Annual report of the Indiana State Board of Agriculture

Indiana. State Board of Agriculture, Indiana. Geological Survey
Compliments of

Indiana State Board of Agriculture,

Alex. Heron, Sec'y,

Exchanges Acceptable.

Indianapolis, Ind.
INDIANA STATE HOUSE.

FIRST FLOOR.
THIRTY-SIXTH ANNUAL REPORT
OF THE
INDIANA
STATE BOARD OF AGRICULTURE.

VOLUME XXVIII, 1886.

Including the Proceedings of the Annual Meeting, 1887; Meetings of the Cattle Breeders, Horse Breeders, Swine Breeders, Wool Growers and Cane Growers, 1887.

TO THE GOVERNOR.

INDIANAPOLIS:
W.M. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.
1887.
INDIANAPOLIS, January 25, 1887.

To His Excellency, ISAAC P. GRAY,
Governor of Indiana:

Sir—In compliance with the act of the General Assembly, approved February 17, 1852, we have the honor to submit herewith the Annual Report of the Indiana State Board of Agriculture for the year ending December 31, 1886, together with such matter as is deemed interesting and useful.

Very respectfully,
WM. B. SEWARD, President.

ALEX. HERON, Secretary.

STATE OF INDIANA, Governor's Office,
Received by the Governor and referred to the Auditor of State for verification of the financial statement.
March 31, 1887.

AUDITOR OF STATE’S Office,
March 31, 1887.

The within report, so far as the same relates to appropriations drawn from State Treasury, is correct.

BRUCE CARR, Auditor of State.

Returned by the Auditor of State with the above certificate, examined by the Governor, and transmitted to the Secretary of State, for publication upon the order of the Board of Commissioners of Public Printing and Binding.

PIERRE GRAY, Private Secretary.

Filed in the office of the Secretary of State of the State of Indiana, this 2d day of April, 1887.

CHARLES F. GRIFFIN, Secretary of State.
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<td>Proceedings of Indiana Horse Breeders</td>
<td>386</td>
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<td>Proceedings of Indiana Wool Growers</td>
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<td>Proceedings of Indiana Swine Breeders</td>
<td>422</td>
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<td>Proceedings of Indiana Cane Growers</td>
<td>431</td>
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</tbody>
</table>
MEMBERS OF THE INDIANA STATE BOARD OF AGRICULTURE--1886.

1st District—Robert Mitchell, Princeton, Gibson County.
2d District—Samuel Hargrove, Union, Pike County.
3d District—J. Q. A. Sieg, Corydon, Harrison County.
4th District—W. B. Seward, Bloomington, Monroe County.
5th District—Will A. Greer, Aurora, Dearborn County.
6th District—Dick Jones, Columbus, Bartholomew County.
7th District—E. H. Peed, New Castle, Henry County.
8th District—S. W. Dungan, Franklin, Johnson County.
9th District—H. LaTourette, Covington, Fountain County.
10th District—Jasper N. Davidson, Whitesville, Montgomery County.
11th District—John M. Graham, Muncie, Delaware County.
12th District—John M. Boggs, Lafayette, Tippecanoe County.
13th District—John Ratliff, Marion, Grant County.
14th District—L. B. Custer, Logansport, Cass County.
15th District—W. A. Banks, Door Village, Laporte County.
16th District—R. M. Lockhart, Waterloo, Dekalb County.

OFFICERS FOR 1886.

Hon. W. B. Seward .................. President.
John M. Graham .................. Vice President.
Alex. Heron .................. Secretary.
Sylvester Johnson .................. Treasurer.
H. B. Stout .................. General Superintendent.

EXECUTIVE COMMITTEE.

Hon. W. B. Seward, President.
Jasper N. Davidson, John Ratliff,
E. H. Peed, John M. Boggs.
### Table Showing the Officers, Place and Receipts of Each Fair Held by the State Board of Agriculture.

<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>Secretary</th>
<th>Treasurer</th>
<th>General Superintendent</th>
<th>Place of Fair</th>
<th>Premiums Paid</th>
<th>Receipts of Fair</th>
</tr>
</thead>
<tbody>
<tr>
<td>1862</td>
<td>Gov. Joseph A. Wright</td>
<td>John B. Dillon</td>
<td>Royal Mayhew</td>
<td>W. T. Dennis</td>
<td>Indianapolis</td>
<td>$4,651 55</td>
<td></td>
</tr>
<tr>
<td>1863</td>
<td>Gov. Joseph A. Wright</td>
<td>John B. Dillon</td>
<td>Royal Mayhew</td>
<td>J. J. B. Seman</td>
<td>Lafayette</td>
<td>6,751 55</td>
<td></td>
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<tr>
<td>1864</td>
<td>Gov. Joseph A. Wright</td>
<td>Wm. T. Dennis</td>
<td>Royal Mayhew</td>
<td>W. T. Dennis</td>
<td>Madison</td>
<td>7,470 77</td>
<td></td>
</tr>
<tr>
<td>1865</td>
<td>Gen. Joseph Orr</td>
<td>John B. Dillon</td>
<td>S. A. Buell</td>
<td>Calvin Fletcher, Jr</td>
<td>Indianapolis</td>
<td>10,822 75</td>
<td></td>
</tr>
<tr>
<td>1866</td>
<td>Dr. A. C. Stevenson</td>
<td>Ignatius Brown</td>
<td>S. A. Buell</td>
<td>Calvin Fletcher, Jr</td>
<td>Indianapolis</td>
<td>14,375 34</td>
<td></td>
</tr>
<tr>
<td>1867</td>
<td>Dr. A. C. Stevenson</td>
<td>Ignatius Brown</td>
<td>S. A. Buell</td>
<td>Calvin Fletcher, Jr</td>
<td>Indianapolis</td>
<td>14,068 75</td>
<td></td>
</tr>
<tr>
<td>1868</td>
<td>Dr. A. C. Stevenson</td>
<td>John B. Dillon</td>
<td>Thomas H. Sharp</td>
<td>Calvin Fletcher, Jr</td>
<td>Indianapolis</td>
<td>15,500 60</td>
<td></td>
</tr>
<tr>
<td>1869</td>
<td>George D. Wagner</td>
<td>John B. Dillon</td>
<td>Thomas H. Sharp</td>
<td>James L. Bradley</td>
<td>New Albany</td>
<td>6,193 00</td>
<td></td>
</tr>
<tr>
<td>1870</td>
<td>George D. Wagner</td>
<td>Wm. T. Dennis</td>
<td>Thomas H. Sharp</td>
<td>James L. Bradley</td>
<td>Indianapolis</td>
<td>11,900 00</td>
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<tr>
<td>1871</td>
<td>D. P. Holloway</td>
<td>Wm. T. Dennis</td>
<td>H. A. Fletcher</td>
<td>James L. Bradley</td>
<td>Indianapolis</td>
<td>11,900 00</td>
<td></td>
</tr>
<tr>
<td>1872</td>
<td>James D. Williams</td>
<td>W. H. Loonis</td>
<td>H. A. Fletcher</td>
<td>J. A. Grosevor</td>
<td>Indianapolis</td>
<td>4,127 55</td>
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<tr>
<td>1873</td>
<td>A. D. Hamrick</td>
<td>W. H. Loonis</td>
<td>H. A. Fletcher</td>
<td>J. A. Grosevor</td>
<td>Indianapolis</td>
<td>9,559 36</td>
<td></td>
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<tr>
<td>1874</td>
<td>Stearns Fisher</td>
<td>W. H. Loonis</td>
<td>Francis King</td>
<td>W. H. Loonis</td>
<td>Indianapolis</td>
<td>10,785 50</td>
<td></td>
</tr>
<tr>
<td>1875</td>
<td>Stearns Fisher</td>
<td>W. H. Loonis</td>
<td>Carlos Dickson</td>
<td>J. A. Grosevor</td>
<td>Indianapolis</td>
<td>17,179 36</td>
<td></td>
</tr>
<tr>
<td>1876</td>
<td>A. D. Hamrick</td>
<td>A. J. Holmes</td>
<td>Carlos Dickson</td>
<td>J. B. Sullivan</td>
<td>Terre Haute</td>
<td>17,148 65</td>
<td></td>
</tr>
<tr>
<td>1877</td>
<td>A. D. Hamrick</td>
<td>A. J. Holmes</td>
<td>Carlos Dickson</td>
<td>J. B. Sullivan</td>
<td>Indianapolis</td>
<td>16,799 00</td>
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<tr>
<td>1878</td>
<td>A. D. Hamrick</td>
<td>A. J. Holmes</td>
<td>Carlos Dickson</td>
<td>J. B. Sullivan</td>
<td>Indianapolis</td>
<td>22,545 65</td>
<td></td>
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<tr>
<td>1879</td>
<td>J. D. Williams</td>
<td>Joseph Powne</td>
<td>Carlos Dickson</td>
<td>J. S. Benson</td>
<td>Indianapolis</td>
<td>19,155 23</td>
<td></td>
</tr>
<tr>
<td>1880</td>
<td>J. D. Williams</td>
<td>Joseph Powne</td>
<td>Carlos Dickson</td>
<td>Jacob Mutz</td>
<td>Indianapolis</td>
<td>20,549 90</td>
<td></td>
</tr>
<tr>
<td>1881</td>
<td>John Sutherland</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>H. W. Caldwell</td>
<td>Indianapolis</td>
<td>23,848 35</td>
<td></td>
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<tr>
<td>1882</td>
<td>John Sutherland</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>H. W. Caldwell</td>
<td>Indianapolis</td>
<td>52,969 10</td>
<td></td>
</tr>
<tr>
<td>1883</td>
<td>John Sutherland</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>E. J. Howland</td>
<td>Indianapolis</td>
<td>10,074 00</td>
<td></td>
</tr>
<tr>
<td>1884</td>
<td>William Crim</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>E. J. Howland</td>
<td>Indianapolis</td>
<td>46,330 48</td>
<td></td>
</tr>
<tr>
<td>1885</td>
<td>Hezekiah Caldwell</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>J. L. Hanra</td>
<td>Indianapolis</td>
<td>12,068 20</td>
<td></td>
</tr>
<tr>
<td>1886</td>
<td>Jacob Mutz</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>J. W. Furnas</td>
<td>Indianapolis</td>
<td>10,999 00</td>
<td></td>
</tr>
<tr>
<td>1887</td>
<td>W. B. Seward</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>R. M. Lockhart</td>
<td>Indianapolis</td>
<td>15,999 35</td>
<td></td>
</tr>
<tr>
<td>1888</td>
<td>Robert Mitchell</td>
<td>Alex. Heron</td>
<td>Carlos Dickson</td>
<td>R. M. Lockhart</td>
<td>Indianapolis</td>
<td>23,819 50</td>
<td></td>
</tr>
<tr>
<td>1889</td>
<td>W. H. Bryan</td>
<td>Alex. Heron</td>
<td>J. A. Wildman</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>15,000 00</td>
<td></td>
</tr>
<tr>
<td>1890</td>
<td>R. M. Lockhart</td>
<td>Alex. Heron</td>
<td>J. A. Wildman</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>17,871 00</td>
<td></td>
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<tr>
<td>1891</td>
<td>H. C. Meredith</td>
<td>Alex. Heron</td>
<td>J. A. Wildman</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>8,090 00</td>
<td></td>
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<tr>
<td>1892</td>
<td>Robert Mitchell</td>
<td>Alex. Heron</td>
<td>J. A. Wildman</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>20,631 10</td>
<td></td>
</tr>
<tr>
<td>1893</td>
<td>Robert Mitchell</td>
<td>Alex. Heron</td>
<td>J. A. Wildman</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>26,638 41</td>
<td></td>
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<tr>
<td>1894</td>
<td>Robert Mitchell</td>
<td>Alex. Heron</td>
<td>S. Johnson</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>10,414 30</td>
<td></td>
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<tr>
<td>1895</td>
<td>R. M. Lockhart</td>
<td>Alex. Heron</td>
<td>S. Johnson</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>24,479 40</td>
<td></td>
</tr>
<tr>
<td>1896</td>
<td>W. B. Seward</td>
<td>Alex. Heron</td>
<td>S. Johnson</td>
<td>Fielding Beeler</td>
<td>Indianapolis</td>
<td>26,555 11</td>
<td></td>
</tr>
<tr>
<td>1897</td>
<td>W. B. Seward</td>
<td>Alex. Heron</td>
<td>S. Johnson</td>
<td>H. B. stout</td>
<td>Indianapolis</td>
<td>26,522 84</td>
<td></td>
</tr>
</tbody>
</table>

A. C. Jameson filled the office of Treasurer for 1873 to the 27th of August, when he resigned, and Carlos Dickson was appointed to fill the unexpired term. H. C. Meredith died July 5th, and L. B. Custer, Vice President, came in as President for the unexpired term.

Note. — In consequence of the loss of papers, incident to the military occupancy of the rooms of the State Board of Agriculture during the late war, and incomplete records preserved, the amount of premiums awarded at the several State Fairs is necessarily incomplete.
STATE INDUSTRIAL ASSOCIATIONS.

OFFICERS FOR THE YEAR 1887.

HEADQUARTERS IN THE AGRICULTURAL ROOMS, CORNER OF TENNESSEE AND MARKET STREETS.

Indiana State Board of Agriculture.—President, Hon. W. B. Seward, Monroe County; Secretary, Alex. Heron, Indianapolis. Organized May, 1851.

Indiana Horticultural Society.—President, Sylvester Johnson, Irvington, Marion County; Secretary, C. M. Hobbs, Bridgeport, Marion County. Organized 1842.

State Association of Shorthorn Breeders.—President, Hon. Robert Mitchell, Princeton, Gibson County; Secretary, Walter J. Quick, Columbus, Ind. Organized May, 1872.

Indiana Horse Breeders' Association.—President, D. L. Thomas, Rushville; Secretary, J. H. Darnell, Lebanon, Boone County. Organized January, 1885.

Indiana Jersey Cattle Breeders' Association.—President, Judge J. D. Conner, Wabash; Secretary, T. A. Lloyd, Indianapolis. Organized January, 1883.

Indiana Swine Breeders' Association.—President, C. J. Clark, Westfield, Hamilton County; Secretary, Dr. C. A. Robinson, Morristown, Shelby County. Organized January, 1877.

Indiana Wool Growers' Association.—President, S. W. Dungan, Franklin, Johnson County; Secretary, J. W. Robe, Greencastle, Putnam County. Organized October, 1876.

Indiana Poultry Breeders' Association.—President, Sid. Conger, Flatrock, Shelby County; Secretary, R. Twills, Montmorenci, Tippecanoe County. Reorganized January, 1887.

Indiana Bee Keepers' Association.—President, F. L. Daugherty, Indianapolis; Secretary, Mrs. C. Robbins, Indianapolis. Organized December, 1879.

Indiana Cane Growers' Association.—President, A. S. Chapman, Madison, Jefferson County; Secretary, E. W. Deming, Fort Scott, Kan. Organized December, 1882.

Indiana Tile Makers' Association.—President, Thomas Chandler, Indianapolis; Secretary, T. A. Randall, Indianapolis. Organized November, 1876.

Indiana Women's State Industrial Association.—President, Mrs. A. M. Noe, Indianapolis; Secretary, Miss Mary R. Heron, Indianapolis. Organized September, 1878.
# TABLE I.

**Meteorological Tables.**

**Monthly Mean Barometer, Thermometer, Etc.**

Table Showing Monthly Mean Barometer, Thermometer, Relative Humidity; Maximum and Minimum Temperature; Prevailing Direction of Wind; Number of Clear, Fair and Cloudy Days; Average Amount of Cloudiness; Number of Days on Which 0.01 Inch or More Precipitation Fell; Total Amount of Precipitation and Number of Days on Which the Temperature Fell Below the Freezing-Point in Indianapolis, Ind., for Each Month of the Year 1886, as Recorded in the Signal-Office at Indianapolis, Ind.

<table>
<thead>
<tr>
<th>1886 MONTHS</th>
<th>Monthly Mean Barometer Reduced to Sea-Level Gravity in Inches</th>
<th>Mean Temperature—Degrees</th>
<th>Mean Relative Humidity—Per Cent.</th>
<th>Maximum Temperature—Degrees</th>
<th>Minimum Temperature—Degrees</th>
<th>Prevailing Direction of Wind</th>
<th>Number of Clear Days</th>
<th>Number of Fair Days</th>
<th>Number of Cloudy Days</th>
<th>Average Cloudiness During the Month, Scale 0-10</th>
<th>Number of Days on Which 0.01 Inch or More Precipitation Fell</th>
<th>Total Amount of Precipitation in Inches</th>
<th>Number of Days on Which Temperature Fell Below Freezing</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>30.463</td>
<td>73.2</td>
<td>55.3</td>
<td>-15.0</td>
<td>W</td>
<td>2</td>
<td>11</td>
<td>18</td>
<td>7.4</td>
<td>17</td>
<td>4.92</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>30.144</td>
<td>76.4</td>
<td>54.5</td>
<td>-4.2</td>
<td>S</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>5.9</td>
<td>9</td>
<td>1.51</td>
<td>24</td>
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<tr>
<td>March</td>
<td>29.975</td>
<td>70.4</td>
<td>79.5</td>
<td>15.8</td>
<td>NW</td>
<td>7</td>
<td>12</td>
<td>12</td>
<td>6.0</td>
<td>16</td>
<td>2.85</td>
<td>20</td>
<td></td>
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<tr>
<td>April</td>
<td>30.029</td>
<td>84.6</td>
<td>84.0</td>
<td>24.5</td>
<td>SE</td>
<td>8</td>
<td>13</td>
<td>9</td>
<td>5.9</td>
<td>11</td>
<td>3.09</td>
<td>8</td>
<td></td>
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<tr>
<td>May</td>
<td>29.925</td>
<td>76.9</td>
<td>87.1</td>
<td>39.1</td>
<td>SW</td>
<td>7</td>
<td>17</td>
<td>7</td>
<td>5.1</td>
<td>12</td>
<td>3.82</td>
<td></td>
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<tr>
<td>June</td>
<td>29.931</td>
<td>69.2</td>
<td>89.0</td>
<td>46.8</td>
<td>S</td>
<td>9</td>
<td>13</td>
<td>8</td>
<td>5.1</td>
<td>13</td>
<td>4.92</td>
<td></td>
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<tr>
<td>July</td>
<td>29.936</td>
<td>74.3</td>
<td>91.8</td>
<td>50.9</td>
<td>SW</td>
<td>11</td>
<td>12</td>
<td>5</td>
<td>3.5</td>
<td>7</td>
<td>2.27</td>
<td></td>
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<tr>
<td>August</td>
<td>29.982</td>
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### TABLE III.

**DAILY AND MONTHLY MEAN TEMPERATURE.**

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(Fahrenheit.)

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**MEETOROLOGICAL TABLES.**

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*Verified and corrected at the office of the Chief Signal Officer of the Army, Washington.*
**TABLE VI.**

Table Showing Monthly Mean Barometer Reduced to Sea-Level (and Since 1885 to Sea-Level and Standard Gravity), at Indianapolis, for Each Year from 1872 to 1886, Inclusive, as Recorded at the Signal Office.

**MONTHLY MEAN BAROMETER (Inches).**

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### Table VI—Continued.

MONTHLY MEAN TEMPERATURE IN DEGREES, FAHRENHEIT.

(Deduced from the three telegraphic observations.)

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### TOTAL PRECIPITATION, IN INCHES AND HUNDREDTHS.

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PREFACE.

The various branches of Agriculture within the scope of this Board are of such extent that we are compelled to select and condense with great care to embrace in this limited volume the proceedings of the past year.

Agriculture is in the front rank, and acknowledged as the “basis of all prosperity.” The reports from this office have a wider circulation, and are more sought after than all other published reports of the State.

We are again blessed with a remarkably productive season, as shown on page 322, the gross products amounting to $355,278,046.

Special attention is directed to the table of contents on page 5. The address on “The Board of Agriculture as an Educator,” is well worth perusal. “The Food Fishes,” “The Reptiles,” and the “Injurious Insects” of Indiana, described herein, will be found new and interesting matter; also the P. O. address of 2,000 exhibitors. The new arrangement of statistical matter, giving estimates according to area, will be found of advantage to the smaller counties.

The local agricultural fairs have “come to stay,” as their official reports plainly indicate.

The proceedings of the industrial associations are now preserved, as reliable reference, especially in the live stock interests, and the prominent part taken by the women in the State Fair deserves commendation.

The coming season will mark a new era in the affairs of the Board. As shown by the diagram on the frontispiece of this volume, the Agricultural Rooms in the new State House will have special prominence, being on the first floor, to the right on entering from the east. The next Annual Meeting of the Delegate Board, January 3, 1888, will be held therein.

The Board have been restrained from operating as extensively as desired owing to the limited appropriation, caused by the “dead-lock” in the last Legislature. They have purchased twenty acres additional Fair Ground at an expense of $15,000, since the close of the year. The natural gas recently found in the State promises renewed prosperity, the magnitude of which can only be conjectured.

Secretary.
STATE BOARD MEETINGS, 1886.

FEBRUARY MEETING.

TUESDAY, FEBRUARY 2.

The Board met pursuant to adjournment January 7. Present—Messrs. Robert Mitchell, of Gibson; Samuel Hargrove, of Union; J. Q. A. Sieg, of Harrison; W. B. Seward, of Monroe; Will A. Greer, of Dearborn; Dick Jones, of Bartholomew; E. H. Peed, of Henry; S. W. Dungan, of Johnson; H. LaTourette, of Fountain; Jasper N. Davidson, of Montgomery; John M. Graham, of Delaware; John M. Boggs, of Tippecanoe; John Ratliff, of Grant; L. B. Custer, of Cass; W. A. Banks, of LaPorte, and R. M. Lockhart, of DeKalb. President Seward in the chair, ordered that the business of the meeting be proceeded with.

Mr. Chas. Schurmann presented several propositions, accompanied with plats, to sell real estate to the Board for fair ground purposes, which were tabled for future action.

Secretary Thompson, of the American Percheron Horse Breeders' Association, presented the following:

"GENTLEMEN OF THE STATE BOARD: We, the importers and breeders of Percheron horses in the United States do respectfully petition your Honorable Body to extend to the Percheron breeders the same privileges that you accord the Clydesdale and other recognized breeds by making a separate class for us in your premium list."

The communication was signed by President T. W. Palmer, of the Percheron Horse Breeders' Association, and, in addition, 120 recognized breeders of the Percheron horse.

2—Bd. of Agr.
This proposition to further classify the "French Draft Class" in the State Fair Premium List for 1886 was discussed before the Board by J. H. Sanders, of the Breeders' Gazette, Chicago; John Virgin, President of the Norman Horse Breeders' Association of Illinois, and Col. J. A. Bridgeland, of Indianapolis, and, on motion of Mr. Mitchell, of the State Board, was tabled.

A communication asking that a separate class be made for "Cleveland Bays" was referred.

The communication from D. L. Thomas, President of the Trotting and Pacing Association of Indiana, asking that the premiums in the Light Harness Class be increased, was tabled.

The recommendations of the Indiana Wool Growers' Association, relating to the award of premiums on sheep at the State Fair, were referred to the Committee of the Whole on Premium List.

On motion of Mr. Mitchell the Board concurred in the action of the officers in paying $5,000 instead of $8,000 of the bonded debt, as ordered by the Board at a previous sitting.

The time for holding the State Fair was fixed for September 27, 1886.

Five thousand copies of Col. J. B. Maynard's address were ordered printed and distributed.

The complaint of W. H. Ketcham, of Indianapolis, as to the constitution of the Committee on Jersey Cattle Awards at the last fair, was satisfactorily met by Messrs. Davidson, Greer and Sieg, who selected the committeeemen complained of.

A communication from the Indianapolis florists was properly referred.

Hon. W. A. Banks, of Laporte County, and Hon. Samuel Hargrove, of Pike County, were nominated as the representatives from the Board for appointment as Trustees for Purdue University.

The motion of Mr. Jones directing the Secretary of the Board to apply for admission to the National Trotting Association was carried.

Adjourned.
Board met, and the time having arrived for the meeting of the International Association of State Fair Managers, the Association being the guest of the Board, and was to hold its sessions at the State Agricultural Rooms, after the appointment of Messrs. Mitchell, Lockhart and Davidson to represent the Board at the above named convention, adjourned on call of the President.

The Board met and occupied the afternoon session in the revision of the premium list. At the evening meeting, after fixing the per diem of Committeemen on awards at $2, with mileage, gatekeepers at $3, and amphitheater ticket takers at $2, the Board again went into Committee of the Whole on revision of the premium list, adjourning immediately after arising and reporting progress.

Board met, with Vice President Graham in the chair.

The Committee of the Whole on the revision of the Premium List reported having completed its labors. Report concurred.

One thousand dollars was appropriated to defray the expenses of the Ladies' Department of the State Fair, the amount to be expended on orders drawn by the officers of the Woman's State Industrial Association.

President Seward announced the following Superintendents of Departments:

*Horse Department*—W. A. Banks and E. H. Peed.
*Speed Ring*—E. H. Peed.
*Cattle Department*—Jasper N. Davidson and J. M. Boggs.
*Hog Department*—Dick Jones.
*Sheep Department*—S. W. Dungan.
*Poultry Department*—L. B. Custer.
*Farm and Garden Products*—H. LaTourette.
*Horticultural Department*—R. M. Lockhart.
*Mechanical Department*—Rob't Mitchell, W. A. Greer and Sam'l Hargrove.
*Carriages and Wagons*—John Ratliff.
*Upper Floor*—Women's State Fair Association.
*Geology, Natural History, etc*—Prof. J. Maurice Thompson, State Geologist.
*Gates*—J. Q. A. Sieg.
*Amphitheater*—J. M. Graham.
On motion of Mr. Mitchell all unfinished business was referred to the Executive Committee.

The Executive Committee, in connection with the President, was directed to outline a system for gathering crop reports and forming Farmers' Institutes throughout the State.

One hundred and fifty feet of show-cases were ordered purchased. Gates were ordered placed at the stairways leading to the upper floor of the Exposition Hall.

The whole matter of speed and special attractions was referred to the Executive Committee.

Adjourned to September 27.

EXECUTIVE COMMITTEE MEETINGS.

MARCH 23.

The Committee met on call of the President. All members present.

A new design for a lithograph poster was adopted, and 4,000 copies ordered printed at a cost of $590.

Better lighting facilities were ordered to be provided for the poultry house.

Application for membership in the National Trotting Association, ordered at the February meeting, was considered inexpedient on account of dissentions in the association named.

Mr. C. A. Howland was appointed superintendent of space on the lower floor of the Exposition Hall.

The arranging of the premium list was left to the President and Secretary. The premium list for 1886 was examined, corrected and indorsed. Fifty dollars was ordered paid on Shetland ponies, $50 on mares, $25 extra on bee supplies, and the same on dogs as 1885.

Adjourned.
President Seward called the Committee to order, all members answering to the roll-call.

The declination of Chas. A. Howland as superintendent of space necessitated the appointment of Fielding Beeler to the place.

J. M. Freeman, of Bicknell, Indiana, was placed in charge of the dog department.

The Treasurer was authorized to sell day tickets to exhibitors in lots of 50 and upward at 25 per cent. discount, under certain restrictions.

The General Superintendent was authorized to rent the Fair Grounds for wintering a show at $500.

Mr. Davidson's motion to offer a $1,000 purse for a free-for-all trot, provided certain noted horses could be secured, was carried.

Certain proposed improvements on the State Fair Grounds were referred to the President and General Superintendent.

Adjourned.

SEPTEMBER MEETING.

September 27.

Board met with President Seward in the chair.

Present: Messrs. Ratliff, Mitchell, Hargrove, Sieg, Jones, Peed, LaTourette, Davidson, Boggs, Custer, Lockhart and Banks.

Exhibitors in the horse department who were unable to procure stalls on the Fair Grounds were granted passes to the grounds.

All stalls not occupied by 6 o'clock p.m. were ordered forfeited.

The time for making entries was extended at the suggestion of the Secretary, while the speed entries were ordered closed at the discretion of the Secretary and Mr. Peed.

Adjourned.
Board met with a quorum present.
Committeemen on awards were requested to report for police duty.
Entries were ordered closed at 12 p. m., except in the speed ring.
The request of the road machine exhibitors, asking that a medal be awarded them in a competitive trial, was tabled.
It was decided to hold the fair on Saturday.
The Secretary was ordered to have printed circulars giving details of races each day, and he was further instructed to request by telegraph a membership in the National Trotting Association.
Adjourned.

October 1.

Board met, a quorum being present.
Ten o’clock a. m. Saturday was appointed as the time for paying premiums.
The judge in the Poultry Department in a communication asked that certain premiums in the non-enumerated class be awarded and paid by the Board. The request was granted.
Mary Beal protested the award on bull terriers, having received second where there was no competition. She was awarded first by the Board.
W. H. Leonard was allowed $20 for services in Speed Class. The Treasurer reported receipts for Thursday at $14,000.
The Woman’s State Fair Association was authorized to issue diplomas in this department.
All protests not settled were referred to the Executive Committee.
The President and Secretary were authorized to settle with the Treasurer.
Adjourned.
EXECUTIVE COMMITTEE MEETING.

November 11.

All members of the Committee were present, with President Seward in the chair. The program for the annual meeting, as prepared by the President and Secretary, was adopted. Col. Millard's protest on light harness team was sustained, and the premium declared forfeited on both awards. Bills for damages sustained at the State Fair by exhibitors were allowed as follows: H. T. Conde, $9.39; Mr. Schrader, $1.08; A. C. Chandler, $1; Women's Department, $26.50. The affidavit to sustain protest of James Armstrong against paying delinquent fees amounting to $44 to the National Trotting Association, was ordered sent to the President of the Association to bring before their Board of Appeals. Twenty thousand dollars of insurance was ordered placed on the main Exposition hall. The proxy for vote in the National Trotting Association was ordered sent to the editor of the Chicago Horseman. Robert Mitchell was authorized to represent the Board at the Cattlemen's Convention at Chicago.

Adjourned.
ANNUAL MEETING, 1887.

JANUARY 4, 10:30 A. M.

The Delegate State Board of Agriculture met in the Agricultural Rooms, with President Seward in the chair. The call of districts showed members present as follows:

1st District—ROBERT MITCHELL, Princeton, Gibson County.
2d District—SAMUEL HARGROVE, Union, Pike County.
3d District—J. Q. A. SIEG, Corydon, Harrison County.
4th District—W. B. SEWARD, Bloomington, Monroe County.
5th District—WILL A. GREER, Aurora, Dearborn County.
6th District—DICK JONES, Columbus, Bartholomew County.
7th District—E. H. PEED, New Castle, Henry County.
8th District—S. W. DUNGAN, Franklin, Johnson County.
9th District—H. LATOURRETTE, Covington, Fountain County.
10th District—JASPER N. DAVIDSON, Whitesville, Montgomery County.
11th District—JOHN M. GRAHAM, Muncie, Delaware County.
12th District—JOHN M. BOGGS, Lafayette, Tippecanoe County.
13th District—JOHN RATLIFF, Marion, Grant County.
14th District—L. B. CUSTER, Logansport, Cass County.
15th District—W. A. BANKS, Door Village, Laporte County.
16th District—R. M. LOCKHART, Waterloo, Dekalb County.
The call of County and District Societies showed:

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<tr>
<th>COUNTY</th>
<th>NAME</th>
<th>POST OFFICE</th>
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<tbody>
<tr>
<td>Bartholomew</td>
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<td>Bartholomew A. and H. Soc.</td>
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<tr>
<td>Whitley</td>
<td>I. B. McDonald</td>
<td>Columbia City</td>
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The district societies were represented by:

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<td>Jas. Bilsland</td>
<td>Covington</td>
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<td>Jos. G. Hunt</td>
<td>Medaryville</td>
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<td>Wm. H. Keesling</td>
<td>Mechanicsburg</td>
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<td>R. A. Smith</td>
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<td>H. B. Howland</td>
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<td>Loogootee District</td>
<td>H. J. Johnson</td>
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<td>N. A. McClung</td>
<td>Rochester</td>
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<td>New Ross District</td>
<td>John W. Lockridge</td>
<td>Mace</td>
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<td>R. M. Lockridge</td>
<td>Waterloo</td>
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<td>J. W. Whiteman</td>
<td>Iroquois, Ill</td>
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<td>W. A. Greer</td>
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<td>J. W. Stewart</td>
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<td>Warren Tri-County</td>
<td>Adam Foust</td>
<td>Warren</td>
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<td>Washington and Clark</td>
<td>Nelson Johnson</td>
<td>Pekin</td>
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<tr>
<td>Wayne, Henry and Randolph</td>
<td>John Macy</td>
<td>Dalton</td>
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<tr>
<td>Urmyville Agr'l Society</td>
<td>John Tilson</td>
<td>Franklin</td>
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The State associations were represented as follows:

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<td>Woman's Industrial</td>
<td>Mrs. A. M. Noe</td>
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<td>Prof. J. H. Smart</td>
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<td>Short Horn Breeders</td>
<td>Robert Mitchell</td>
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<td>Wool Growers</td>
<td>Thomas Nelson</td>
<td>Bloomingdale.</td>
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<td>Swine Breeders</td>
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<tr>
<td>Bee Keepers</td>
<td>I. N. Cotton</td>
<td>Traders' Point.</td>
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**PERPETUATION OF COUNTY FAIRS.**

**Hon. Will Cumberback.** We should have some one on our program next year to read an address on county fairs. There are many in the different counties throughout the State who take little or no interest in this matter, and perhaps some good address published in the county papers would be of interest. It seems to me that it would be an appropriate subject to come before this Board in the form of an address and published in our agricultural papers, as well as county papers, and present the merits and value of county fairs.

**W. B. Seward.** Heretofore we have had too many “cut and dried” papers, and by leaving the question open and having but few we give an opportunity for any gentleman to give all he knows about county fairs, and any other question coming before the meeting. We want to impart to the delegates all the information we have about county fairs, or any district fair in the State of Indiana.

**Mr. McDonald.** I have seen three or four ably written letters in regard to what appropriation the Legislature should make for the benefit of the State society. The States of Ohio and Illinois are receiving ten thousand dollars, while Indiana has gone begging for a moiety for want of a law to sustain the agricultural interests of the State. The question is an important one to the taxpayers of the State. I am favorable to anything that is practical. We should have good roads and good
schools, and I for one pay my taxes willingly for the support of such enterprises. Agriculture and fairs are legitimate and appropriate, and I say to you, gentlemen, I have courage enough to vote for it.

The Indiana State Fair is of great interest to the State and the people. I wish to make this suggestion, Mr. President, that anything this Board should make in this respect should be recognized by the Indiana Legislature.

A motion by Mr. Cumback, instructing the Committee on Program for the Next Annual Meeting to have some one address the Delegate Board on "The Value and Importance of County Fairs," was carried.

The Committee on Credentials, through R. M. Lockhart, reported no contests. Report adopted.

Vice President Graham took the chair during the delivery of the

PRESIDENT'S ADDRESS.

Gentlemen of the Delegate State Board of Agriculture:

The year just past and gone has been a fairly prosperous one. Seed time and harvest have come and gone. The garnered grain attests that mother earth has not forgotten her promised yield. The intelligent and industrious husbandman has not been without his reward. All in all, perhaps we have not had a more prosperous year in the history of our State. But while this is true, possibly, by a more persistent and intelligent effort on our part, even a greater yield might have been had—a few more blades of grass made to grow.

We have met here, on this occasion, to talk of these things, to advise together, to talk of new and old methods, to the end that we may lead Indiana, the grand old State that she is, to the front rank, as an agricultural and manufacturing State, where by natural and acquired advantages she properly belongs.

Most of us, perhaps, are native born, but all make Indiana our home by choice; then let us make her the garden spot, the banner agricultural and manufacturing State of the Union.

Pardon me, if a native born Hoosier feels a growing pride in his native State, and seeks to enthuse you with the same feeling.

Rome, once the pride of the world, was made so by the valor of her soldiers. The name of a Roman soldier or even a Roman citizen was a universal passport and a recognized honor to all who bore it. May we live to see the day that a Hoosier will glory in his name, not from the vain glory of conquering Nations, but from the more peaceful, less dangerous and more honorable one of murdering pestiferous insects and noxious weeds, that seek to suck the life blood from our
growing crops, and persistently dispute the ground with our most precious seeds. Let us conquer refractory ground that is disposed to dispute man's domain over it, and make it yield an hundred fold. Let us open up and develop our mines of coal, iron, stone and other minerals, and if in our delving we penetrate to natural gas, with which we now know our State is permeated, it will only make us feel the more buoyant, and able to rise higher in the scale of States. Let us find and apply the remedy that will stay the ravages of disease among our herds of cattle and hogs, and then, after we have done all these things, a Hoosier name will be more worthy, glorious and lasting in fame, than was ever that of a Roman soldier. It is a worthy pride to feel that we would like to do all these things, an honor to even truly make the effort.

Our annual fairs are held for the purpose of showing the finished work from our farms and workshops. The spirit of emulation that naturally fills the breast of every one is aroused when we see the excellence of the work before our wondering eyes. Even the fat woman and the five-legged calf that sometimes invade our grounds can detract nothing from the interest taken in the perfectly formed animals of various kinds shown. The wheat, corn and grain of all kinds, as well as fruit and vegetables of every description, are all the best of their respective kinds, and it is how to produce better ones that fills the minds of one class of visitors, wonder and admiration of another class.

The value of fairs for the purposes stated can not be over-estimated. The object lessons there learned act as a stimulant to emulation, and the result is known at the next fair by the showing of something better than was ever seen there before.

If fairs are the places to show the finished work of our producers, then this is the place, and this body of men before me are the ones to show how this work was produced. If I had the power (and I much regret that I have not), I would hold all of you in your places, with only reasonable time to eat and sleep, till the most improved method known by any of you, in any department of industry, was known to all.

There are but few before me but have had experience of one kind or another that, if known, would be of benefit to others.

If experiments have been failures, it is almost as important to know it as if they had been successful, as much precious time may be saved to others in not going over the same ground, and if successful all should know it. By telling fully all we know, the missing link, if there is one, may be found and brought to light by some one who is only too glad to find a place for it, as it is totally valueless by itself.

The law authorizing this meeting set a time when it should convene, but not when it should adjourn. The law also clearly indicates that this should be an experience meeting; it is therefore hoped that all will freely enter into the spirit and intent of the occasion, and make it one of lasting benefit to all.

Without criticising previous meetings of this Board, or dictating to this one, I urge you, as I feel it my duty to do, to a full exchange of ideas on all the topics of common interest affecting the industrial pursuits of our citizens, before you adjourn, and by so doing much will be learned, and we will be that much further advanced for the next meeting.
Our last State fair was in all respects a most gratifying success, and fitly illustrated the path of progress in our State. Such an exhibition, taking it as a whole, was never before seen in our State. It is usual to measure the success of a fair by the quantity of animals and goods on exhibition and the number of visitors present. Both quantity of exhibition articles and visitors are essential to make a success, but it is quality of articles exhibited that marks the progress of the times, and is an index to show us to what extent, if any, that we are improving.

In 1856 the Board offered $20 for the fastest trotting horse, but prudently required that not more than four minutes should be consumed in trotting a mile. There are some persons, perhaps, that may not think improvement in the speed of trotting horses is of any real value, but there are others who attach great value to it.

A pair of boots with red tops may fill the measure of human happiness of a boy, while his pa can obtain the same measure of happiness better when behind a three-minute horse, and I confess that my sympathy is somewhat with the boy's pa. But it is not for the improvement in trotting horses alone that fairs are held and are to be commended. In fact, this improvement is of such little moment, as compared to other things, that it is hardly worth mentioning, and would not have been, only to illustrate the fact that improvement and progress have been made.

The comparison between the first State Fair and the last one is as noticeable in the improvement in quality of everything shown as in the quantity. A just spirit of emulation has brought about this result. No one thinks of taking anything to exhibit that is not, in their judgment, at least, the second best of its kind that will be there. The standard of excellence is constantly being raised from year to year, because of the sharp competition at our fairs, and it is not too much to say that to the direct teaching and influence of the State Fair, by means of its object lessons in every department of industry and art, is due a large part of the improvements so noticeable in Indiana during the past thirty years. I was an humble visitor at the first Indiana State Fair, and still have a vivid recollection of much that I saw. I have, with but three exceptions, seen all the fairs since the first one. The improvements, as shown by the fairs, have marched in almost regular progression since that time, and when they will stop, if ever, no one can say.

I do not suppose that we will ever succeed in raising fried spring chicken, or broiled sirloin steaks, or produce automatons that will do all our work. Yet he would be a reckless prognosticator of future events that dared claim that improvement will in time fall far short of this.

The State Board of Agriculture has been an active and important factor for many years in bringing prominently to public notice the improvements made in stock and machinery, and as the field is as wide open and exhaustless now as it was thirty years ago, there is still a work for us to do; in fact, we are just entering upon our mission of usefulness.

You have assembled here as representatives of the oldest, largest, and most important industry known to mankind. I would not presume to dictate to you what you shall do or what your duties are—the meeting is yours to mold and shape as you will. I will however, call your attention to some of the matters that I think may properly come before you for consideration.
The finances of the Board are in as good condition, considering the large interest-bearing debt that we still have hanging over us like a pall, as could be expected. For exact figures as to receipts and expenditures for the past year, I refer you to the reports of the Secretary and Treasurer. The debt that has so long embarrassed and hampered the actions of this Board has been reduced from $90,000 to $35,600. Most of the time since this debt has been against us, the State has furnished money to pay the interest, but the reduction of the principal has been effected by the earnings of the Board. If some way can be devised to extinguish this debt, so that the net proceeds of one fair can be devoted to improvements and new features for the next one, we would soon have the grandest annual industrial exhibitions seen on this continent. Our geographical and other advantages make it possible for us to be the leaders, if our finances were in shape to do so. I hope you will give this matter due consideration.

It has long been known that our Fair Grounds are not large enough, and that in the near future something must be done to enlarge them or get new grounds of ample size. Various plans have been suggested to remedy this defect, some of which, on investigation, have proved to be impracticable, while others must fall to the ground for lack of money.

The matter of a change of location of fair grounds is of such importance, has a bearing in so many directions, with so many things to consider in connection with it, that it should not be hastily done. We had better "hear the ills we have than fly to those we know not of." The available exhibition space on our present grounds can be greatly increased by a more careful distribution of it, and rigidly excluding side shows of every description, which I hope will be done whether the ground is needed for exhibition space or not, so that the fat woman and the five-legged calf will be seen there no more, forever.

The growth of the city, up to and on three sides of our grounds, makes them more valuable for exhibition purposes, and must, in the near future, add greatly to their market value. If, then, we can bear a few years longer with our present position, which, though it is somewhat cramped, yet is so perfectly fitted up for fair purposes, we may then sell our grounds for such a price as will enable us to pay our debts, buy other grounds, and fit them up in grand style. I believe that by holding these grounds a few years longer their enhanced value will place this Board in an independent financial condition.

The disastrous ravages of disease among our herds of hogs during the past year have been very great, and is a matter that should challenge your early attention. The loss to the State from this source alone has been so enormous as to seriously cripple this most important industry. Surely, by combining all the facts that can be gathered as to the peculiarities of this disease, and concerted action by a large number of those who by tact and education are best fitted for the purpose, a remedy may be found.

We are also threatened with a cattle plague equally or even more disastrous. If State or National legislation is needed to pass stringent laws to guard against these diseases, or to provide funds for experiments as to remedies, or to pay for the stock destroyed, if that mode is found to be the only one that will stamp out these diseases, no body of men are better qualified or have more author-
ity to invoke this legislation than you. In view of the above statements and the fact that contagious stock diseases are now so prevalent in many of our States, it is the duty of our Legislature to furnish money to pay a State Veterinarian of recognized ability to look after our interests, and properly diagnose cases should they appear in our State. The large loss already sustained by individual interests, because of false diagnosis of cases, and the authoritative and enforced destruction of herds of cattle charged with being affected with the dread cattle disease; the wide-spread alarm among our stock men, and the enormous loss to the State in the sale of cattle by reason of the cry of "mad-dog" when we had none, gives emphasis to the necessity of the case. We want no man appointed to this position because of his ability to work political intrigues with one party or the other, if he has no other ability for the position. He should be paid by the State and appointed by this Board, which knows no politics and is the most interested in getting the best man for the place.

In agricultural pursuits, no enemy is more to be dreaded, not even drouth, than the ravages of insects on growing crops. The annual loss from this source alone is so enormous that figures would almost fail us did we attempt to give the amount. So insidious are these pests that crops are often destroyed by them before their existence is known.

In view of these facts and the efforts now being made by scientists and others to learn more perfectly the habits of the various destructive insects, and the best mode of destroying them, I think we should have a State Entomologist, to devote his whole time to this subject and report the result to this Board from time to time, for publication in our reports. The cost would be as nothing compared to the benefits that in time would accrue to the State.

It would be safe to say that if we could be entirely free from the ravages of insects for one year, it would save the State more, in material wealth, than the entire cost of every State Institution in the State for that year.

We have in this State a number of industrial associations specially organized to foster and improve some special industry. These associations are a direct growth from this Board, and are doing a most important work in the State. They have so far been working single-handed, and without any aid whatever from any source, except such as we have been able to give them by publishing their proceedings. I have often thought that their work is not appreciated as it should be by the citizens generally throughout the State, and that their membership should be greatly enlarged. Their work is in effect the same as a large committee of experts in some particular line of industry, considering matters they understand best, and are most interested in, therefore reports from them contain the best information possible to obtain on the subject reported.

This State is the pioneer in organizing associations of this kind, and the work done by them has been of such value that I hope some means will be found to aid them, so that their usefulness may be greatly increased.

Farmers' Institutes are now held in many of our sister States, and have been tried to some extent in this State, but results have not been altogether satisfactory with us, owing to the fact that we have had no money provided us, as is the case in other States, to carry them on.
The advantages of these Institutes as educators are beyond question, and it is hoped that in time, when our Legislature is educated up to a knowledge of the advantages of them, and the fact that all education for the general good should be paid for out of the general fund, means will be provided us to carry them on. The subject of Farmers’ Institutes is a proper one for your consideration.

A bill is now pending in Congress, known as the “Hatch Bill,” appropriating $15,000 per year to each State, to sustain an Experimental Farming Station. The advantages that must accrue to the farming interests by reason of these stations, when established, makes it important that you take such steps as will cause an influence to bear on our members of Congress that will insure their voting for this bill when it comes up for passage.

We have in our State a very good law authorizing, under certain conditions, the building of improved county roads. We have associations looking after the interests of almost every thing of a public character except that of public roads. Why not have a State Road-making Association? Some years ago an attempt in this direction was made, but without much good resulting, owing to the fact that public interest was not then so fully awakened to the importance of good county roads as it is now. Much good would, I think, result from such an organization, and if nothing else could be done, they could cheerfully attend the funeral of old man “Injunction,” and all his kin, who have an habitation in almost every neighborhood in the State. They can not live always, and should be buried out of sight as soon as possible, when dead, for the public good.

The annual reports published by this Board are replete with useful information, which it is regretted can not be placed before more of our citizens. The commendations the report receives from abroad are spontaneous and hearty, and should be a just source of pride to the Board, and especially so to the Secretary who is the compiler of it, and to whose intelligent and industrious efforts its value so largely belongs. We should be allowed by law to publish five times as many of them.

Some years ago the department of our fair comprising ladies’ work was set apart for management by ladies. The wisdom of this move became more apparent each year. I refer to it with pride and satisfaction to-day, as at the time of its inauguration I was, as to-day, the executive officer of the Board, and took the authority to allow the innovation made. To Mrs. Noe, President of the Ladies’ State Fair Association, and her co-workers, for the work done by them during the last and preceding years, is due the thanks of this Board, and the thanks of the ladies throughout the State.

Since the last meeting of this Board, an old and honored co-worker with us has passed away. John Sutherland, for seventeen years a member of this Board, and for three years its President, died at his home in Laporte June 16, 1886. It was my fortune to serve with Mr. Sutherland nearly all the years of my service on this Board, and I came to know him intimately and love him truly.

Mr. Sutherland was one of nature’s noblemen. He was human, and might, and doubtless did make mistakes of judgment, but never of heart. No member of this Board ever worked more zealously or intelligently for its interests, and no one during its most trying times was of more value to it.
To the cool judgment of Mr. Sutherland is due, more, perhaps, than to any other member, the successful extrication of the Board from its financial embarrassments some years ago. I can not but feel a glow of pleasure as I remember the special intimate relations that existed between Mr. Sutherland and myself. I regarded it then, as I do now, an honor to have the friendship of such a man, and am glad that I am able to appear before you to-day to attest his worth as a man and public benefactor. In my first days of service on this Board, and my last ones during the time Mr. Sutherland was with us, I always looked up to him for advice when trying and perplexing matters were to be decided, knowing and feeling that he was a safe counselor.

His honor and integrity were conspicuous in his every act. His virtues would fill a volume, if enumerated, and of vices—he had none. Plain, and unassuming, he would be but little noticed by those that did not know him, but to those that had business or social relations with him, his plainness disappeared, and he showed up the giant that he was, in all that goes to make a man good and great.

The State has lost in Mr. Sutherland one of her best citizens, this Board one of its best friends, and to his wife, the loss is irreparable. Let us revere his memory and emulate his virtues.

To the members and officers of the Board I am grateful for universal kind treatment and consideration.

With the hope that our meeting may be pleasant and profitable to all, I respectfully submit this address.

Messrs. Lockhart, Beeson and Wildman were appointed as a special committee on the President's address.

Mayor Denny, of Indianapolis, delivered an address on "The Mutuality of Interests with the Board of Agriculture and Indianapolis." Published in full as essay matter in this report.

Pending the reading of his address the Mayor said: "As Mayor of Indianapolis, I welcome you to the city, and I hope you will have a prosperous meeting. I regret very much that I have not had time to prepare an address as I would like. I regret that I have not had an opportunity of talking with your President upon the subject. I simply submit a few thoughts of my own, and may touch upon some points touched upon by your President."

A vote of thanks was tendered Mayor Denny, and his address was referred to the same committee as the President's address.

Secretary Heron next submitted his annual report.
SECRETARY'S REPORT.

AGRICULTURAL ROOMS, December 31, 1886.

Gentlemen: I have the honor to submit herewith the annual report and financial exhibit of the business of the Indiana State Board of Agriculture for the year ending December 31, 1886:

FINANCIAL EXHIBIT.

Total receipts from all sources .......................... $40,814 54

EXPENDITURES.

General cash orders ......................... $19,699 30
Premium orders ...................... 9,419 00

Total ........................................ $29,118 30

December 31, balance in Treasury .................. 11,696 24

Total ........................................ $40,814 54

ITEMIZED RECEIPTS.

January 1, 1886, cash in Treasury ................ $10,948 79
Notes and interest due .................. 1,581 68

Total ........................................ $12,530 47

Regular appropriation, State Treasury .................. 1,500 00
Rents summer season .................. 435 35
Privileges ................................ $3,004 39
Stalls and pens .................. 1,076 00
Coop rents ................................ 54 15

Total ........................................ 4,134 54

Entry fees, speed ................ $836 00
Entry fees, dogs .................. 53 00

Total ........................................ 889 00

Sale 50-cent admission tickets .................. $17,643 00
Sale 50-cent railroad coupons .................. 1,423 56
Sale 25-cent admission tickets .................. 1,315 75
Sale 10-cent admission tickets .................. 681 70

Total ........................................ 21,063 95
BOARD OF AGRICULTURE.

Sale of old boiler and boiler-house ........................................... $250.00
Credit on cash order overdrawn ................................................. 5.00
Premium money on corn, 1885, returned Phipps Bros ........................ 5.00
Premium money from Hart, Mich., and amount by error
overdrawn and returned ....................................................... 1.23

Total ................................................................................. $261.23

Total ................................................................................. $40,814.54

Statement showing distribution of expenses:

GENERAL EXPENSES.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members’ per diem</td>
<td>$1,555.48</td>
</tr>
<tr>
<td>Salaries Secretary, Treasurer and General Supt.</td>
<td>1,920.83</td>
</tr>
<tr>
<td>Printing and advertising</td>
<td>1,335.93</td>
</tr>
<tr>
<td>Postage and stationery</td>
<td>280.13</td>
</tr>
<tr>
<td>Express, telegrams, moving, etc</td>
<td>186.61</td>
</tr>
<tr>
<td>Furniture and tools</td>
<td>250.00</td>
</tr>
<tr>
<td>Janitor</td>
<td>240.00</td>
</tr>
<tr>
<td>Water rents</td>
<td>200.00</td>
</tr>
<tr>
<td>Insurance</td>
<td>379.13</td>
</tr>
<tr>
<td>Old claims</td>
<td>1,148.00</td>
</tr>
<tr>
<td>Banking and interest accounts</td>
<td>7,258.73</td>
</tr>
<tr>
<td>Premiums annual meeting 1886</td>
<td>13.00</td>
</tr>
</tbody>
</table>

Total ................................................................................. $14,767.84

CONSTRUCTION AND REPAIRS.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumber</td>
<td>$391.94</td>
</tr>
<tr>
<td>Labor</td>
<td>661.28</td>
</tr>
<tr>
<td>Pumps and piping</td>
<td>243.18</td>
</tr>
<tr>
<td>Roofing</td>
<td>87.25</td>
</tr>
<tr>
<td>Hardware</td>
<td>63.85</td>
</tr>
<tr>
<td>Whitewashing, etc</td>
<td>38.00</td>
</tr>
<tr>
<td>Repairing</td>
<td>117.09</td>
</tr>
</tbody>
</table>

Total ................................................................................. $1,602.59

CURRENT EXPENSES STATE FAIR.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate keepers</td>
<td>$177.00</td>
</tr>
<tr>
<td>Police</td>
<td>589.00</td>
</tr>
<tr>
<td>Labor, care takers, etc</td>
<td>328.50</td>
</tr>
<tr>
<td>Assistant superintendents</td>
<td>218.00</td>
</tr>
<tr>
<td>Awarding committees</td>
<td>542.25</td>
</tr>
</tbody>
</table>
## PROCEEDINGS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straw and sawdust</td>
<td>$168.25</td>
</tr>
<tr>
<td>Fuel and power</td>
<td>$52.75</td>
</tr>
<tr>
<td>Gas</td>
<td>$104.04</td>
</tr>
<tr>
<td>Music</td>
<td>$208.00</td>
</tr>
<tr>
<td>Ribbons and emblems</td>
<td>$73.98</td>
</tr>
<tr>
<td>Rents, showcases, plates, and telephone</td>
<td>$137.40</td>
</tr>
<tr>
<td>Supplies</td>
<td>$24.68</td>
</tr>
<tr>
<td>Rebates</td>
<td>$12.00</td>
</tr>
<tr>
<td>Dog show</td>
<td>$37.10</td>
</tr>
<tr>
<td>National Trotting Association</td>
<td>$56.00</td>
</tr>
<tr>
<td>Losses and damage, exhibition goods</td>
<td>$28.58</td>
</tr>
<tr>
<td>Woman's department</td>
<td>$571.34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,328.87</strong></td>
</tr>
</tbody>
</table>

## PREMIUM AWARDS.

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>$1,941.00</td>
</tr>
<tr>
<td>Horses, mules, etc</td>
<td>$3,418.00</td>
</tr>
<tr>
<td>Sheep</td>
<td>$583.00</td>
</tr>
<tr>
<td>Hogs</td>
<td>$739.00</td>
</tr>
<tr>
<td>Poultry</td>
<td>$346.00</td>
</tr>
<tr>
<td>Dogs and ponies</td>
<td>$118.00</td>
</tr>
<tr>
<td><strong>Total live stock</strong></td>
<td><strong>$7,145.00</strong></td>
</tr>
<tr>
<td>Agricultural, grains, etc</td>
<td>$462.00</td>
</tr>
<tr>
<td>Horticulture</td>
<td>$772.00</td>
</tr>
<tr>
<td>Geology and natural history</td>
<td>$153.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,387.00</strong></td>
</tr>
<tr>
<td>Woman's department</td>
<td>$798.00</td>
</tr>
<tr>
<td>Children's department</td>
<td>$89.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$887.00</strong></td>
</tr>
<tr>
<td><strong>Total amount of premium orders.</strong></td>
<td><strong>$9,419.00</strong></td>
</tr>
</tbody>
</table>

## RECAPITULATION.

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General expenses</td>
<td>$14,767.84</td>
</tr>
<tr>
<td>Construction and repairs</td>
<td>$1,602.59</td>
</tr>
<tr>
<td>Current expenses, State fair</td>
<td>$3,328.87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$19,699.30</strong></td>
</tr>
<tr>
<td>Premium awards</td>
<td><strong>$9,419.00</strong></td>
</tr>
<tr>
<td>Balance in treasury</td>
<td>$11,696.24</td>
</tr>
<tr>
<td><strong>Season's operations</strong></td>
<td><strong>$40,814.54</strong></td>
</tr>
</tbody>
</table>
FINANCIAL EXHIBIT.

STATE FAIR—INCLUSIVE.

RECEIPTS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission tickets</td>
<td>$21,063.95</td>
</tr>
<tr>
<td>Entry fees</td>
<td>889.00</td>
</tr>
<tr>
<td>Rents</td>
<td>435.35</td>
</tr>
<tr>
<td>Privileges, etc.</td>
<td>4,134.54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$26,522.84</strong></td>
</tr>
</tbody>
</table>

EXPENDITURES.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members’ per diem (season)</td>
<td>$1,556.48</td>
</tr>
<tr>
<td>Salaries, Secretary, Treasurer and Superintendent</td>
<td>1,920.83</td>
</tr>
<tr>
<td>Advertising</td>
<td>1,335.93</td>
</tr>
<tr>
<td>Postage and stationery</td>
<td>280.13</td>
</tr>
<tr>
<td>Express, telegrams</td>
<td>186.61</td>
</tr>
<tr>
<td>Current expenses of fair</td>
<td>3,328.87</td>
</tr>
<tr>
<td>Twenty per cent. construction and repairs</td>
<td>320.52</td>
</tr>
<tr>
<td>Premium awards</td>
<td>9,419.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$18,347.37</strong></td>
</tr>
<tr>
<td>Net profits from State Fair</td>
<td>8,175.47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$26,522.84</strong></td>
</tr>
</tbody>
</table>

Under general expenses, in banking accounts, are included:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancelled bonds</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Jan. 15, interest on $40,000—6 months</td>
<td>1,200.00</td>
</tr>
<tr>
<td>July 15, interest on $35,000—6 months</td>
<td>1,050.00</td>
</tr>
<tr>
<td>July 15, exchange</td>
<td>7.35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$7,257.35</strong></td>
</tr>
<tr>
<td>Have cancelled $2,970 of assessment notes at an expense of</td>
<td>915.00</td>
</tr>
<tr>
<td>The construction account is</td>
<td>1,602.59</td>
</tr>
<tr>
<td>New show cases purchased</td>
<td>250.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$10,024.94</strong></td>
</tr>
</tbody>
</table>

This much accomplished during the season with our surplus, and have within $834.23 as much in the treasury as we reported at the last annual meeting. Included in the construction account is a new bridge across the State ditch at a cost of $260.
INSURANCE.

The amount of insurance on the fair ground property has been reduced, by order of the Executive Committee, from $30,200 to $24,600, of which $18,500 fire insurance is on the main hall and $2,000 against cyclones. On stables, $2,800; amphitheater, $500; implement hall, $400, and dwelling house, $400.

The business of the office continues to increase, and the State Fair has assumed such a magnitude that we have been compelled to refuse entries for exhibition for want of space.

The advertising for the State Fair has been remarkably successful. Instead of sending out men to post bills, we have had more applications for our show bills than we could supply, and even since the fair have had many calls for them for decoration.

We have been favored by the press of the State in cheerfully publishing our circulars and favorable notices of the fair.

The published annual reports of the Board have been received with favor. The annual reports from the county and district agricultural societies show marked improvement, and the proceedings of Industrial Associations give life and practical value to them.

The work of the Board is almost unlimited in extent in promoting the interests of agriculture and manufacturing by showing the vast resources of the State, and how to protect them.

It is a source of pride to note the importance Indiana is assuming as a manufacturing State with the leading establishments for manufacturing plows, wagons, glass and tiling in the United States.

The Board of Agriculture continues a member of the International Association of Fairs and Expositions that met in these rooms last February, and more recently at Chicago. A report may be expected from our delegates, Messrs. Mitchell, Lockhart and Mrs. Noe.

The Board also has a membership in the N. T. Association at an expense of $56 annually, which is of doubtful utility.

Again I will suggest that the time for this annual meeting should be changed to the first or second week in November, for reasons given in our last annual report. Many of the agricultural societies in the State have held elections and changed officers, and we fail to get the proper notice of this meeting where changes are made.

"The wants, prospects and conditions of the agricultural and manufacturing interests throughout the State," have been so thoroughly and ably reviewed by the President, that a repetition is unnecessary on my part, and will close thanking the Board and all my associates for their assistance and courtesy during the past season.

Respectfully submitted.

ALEX. HERON, Secretary.

The Secretary's report was followed by the report of Sylvester Johnson, Treasurer of the Board.
BOARD OF AGRICULTURE.

TREASURER’S REPORT.

Mr. President and Gentlemen:

I herewith submit my report as Treasurer of the State Board of Agriculture for the year ending December 31, 1886:

RECEIPTS.

Cash on hand January 1, 1886 ............................................ $10,948 79
Receipts from sale of tickets ............................................... 21,063 95
Receipts from all other sources ........................................... 7,185 12

Total receipts ............................................................... $39,197 86

DISBURSEMENTS.

Paid on general orders ...................................................... $19,390 57
Paid on premium orders .................................................... 9,220 00
Cash on hand ................................................................. 10,587 29

Total ........................................................................... $39,197 86

I hold a note made payable to this Board by J. D. Campbell and wife, on which there is a balance of principal of $1,350 and of interest of $329.29 now due.

Respectfully submitted.

SYLVESTER JOHNSON, Treasurer.

The address of Col. J. B. Maynard came next in order, and at its conclusion he was tendered a rising vote of thanks. The address in full may be found elsewhere in this report under the head of Essays.

Mrs. A. M. Noe, President of the Woman’s State Fair Association, submitted her annual report.

WOMAN’S DEPARTMENT.

Time, with its irresistible current, has brought us to the close of another year. Every year has been marked by a steady growth and improvement in this department, and this one has been no exception to the rule, only that a greater work has been accomplished. The expenses have already been given you by your Secretary. The amount received for sales privileges is $213.91, being $48.91 in excess of the previous year. The entries numbered 1,439, less 313 of last year. This, to the casual observer, might seem a falling off in the exhibit, but the careful revision of the premium list had enabled us to strike out a number of useless and unattractive articles, and the agricultural booth, which had not proved a success, was discontinued. This accounts for the deficiency in the entries, while the exhibit was of
much better quality than ever before. In no department is the improvement so marked as in the art, which increases in beauty and merit every year, and Indiana has cause to be proud of her women artists.

The labor in the Woman’s Department is more difficult and arduous than in any other department of the fair. When it is remembered that 1,439 entries do not, by any means, cover the number of articles entered, for under one entry may be from three to ten articles, each to be arranged in the class to which it belongs, one can readily see the amount of work required, and the superintendents of the different departments deserve great credit for the artistic arranging of the varied exhibits, and for their patient answers to the innumerable questions of exhibitors and visitors, and for their faithfulness in the care of the exhibit without loss to the owners. This they have been able to do successfully for years, which is remarkable when the size of the exhibit is considered, and that it must be displayed in a manner which renders it almost impossible to prevent visitors from handling. I wish here to return my thanks to the devoted band of co-laborers for their hearty co-operation in all matters pertaining to the fair and for the faithful discharge of their duties.

This year we have to report a loss of stolen articles to the value of $26.50, not by any neglect of the department superintendents, but from insufficient police arrangements, over which we had no control.

The experiment of placing the entire upper floor under the “absolute control” of the Woman’s Association has, we think, for the second time justified the expectations of those who recommended it. At no time since the Exposition of 1873 has the upper floor presented such a beautiful and attractive exhibit as it did at the last fair. Every available inch of space was taken, and all expressed themselves gratified as to results to such an extent that some have already applied for space next year. The exhibitors expressed their appreciation of the management of this department by presenting to its superintendent an elegant gold badge, which she will ever prize, not only for its intrinsic value, but for the appreciation which prompted it.

The Woman’s State Fair Association at its last annual meeting, January, 1886, changed the constitution so as to require a membership fee of $2.00 per year, in order that it might have a fund of its own to promote the work in the State by sending delegates to the county and district fairs, with the hope that by so doing there might be a woman’s department, managed by women, established at these fairs. This we felt might stimulate women to greater interest in their respective fairs and secure a larger exhibit for the State Fair. Through the kindness of your secretary, Mr. Heron, who secured passes over a number of the roads, we were enabled to visit the following fairs: Marion, Acton, Shelbyville, Noblesville, Muncie, Frankfort, Lebanon, Crawfordsville, Knightstown, Lawrenceburg, New Castle, Princeton, Anderson and Rushville, with good results. It is the intention this year to visit the more remote parts of the State, with the hope of larger and better returns.

The President of the Association attended the meeting of the International Association of Exposition and Fair Managers at Chicago, December 14 and 15, the only woman delegate. She was kindly and courteously received, invited to take
part in the discussions, and, by motion of Judge Perkins, of Kentucky, the Woman's State Fair Association was admitted to honorary membership, with all the privileges, which gives to Indiana three additional delegates and one more vote, and the honor of having the first woman's organization represented in that body.

At no time in the history of the Woman's State Fair Association have the results of the work been so satisfactory as during this year. With the success of the past as an incentive to the future, we hope for greater returns, and to you, gentlemen of the State Board of Agriculture, belongs the honor of giving to woman a place in the management of the State Fair. Each succeeding year has marked an increased interest and a greater liberality toward women and their industries. Surely you built better than you knew, for by giving the women of your State these facilities you have opened up a highway that women in every State may tread, and in so doing call you blessed.

In behalf of our Association I return you our sincere thanks for your hearty coöperation during the year just closed.

Superintendent H. B. Stout submitted his annual report as follows:

ANNUAL REPORT OF GENERAL SUPERINTENDENT.

To the President and Members of the State Board of Agriculture:

GENTLEMEN—I submit herewith a statement of moneys received by me as Superintendent of the State Fair, for privileges sold during our late State Fair, now on file with the Secretary.

I venture, furthermore, to submit the following suggestions touching needed improvements, for your consideration:

First. More permanent stalls should be built for horses, cattle and hogs. At the late fair we were obliged to make arrangements for forty horse stalls outside of the grounds. There is room for twenty or thirty horse stalls on the west side of the ditch. I also built sixty temporary cattle stalls and thirty-five hog pens. Building temporary stalls is expensive in the long run, and should be discontinued.

Second. I recommend the soiling of the track. It could be put in fair condition for about five hundred dollars. This may appear at first thought a little expensive, but it would pay in the end, as horsemen would speak of it in such a way as to largely advertise the Fair, thereby benefiting the Association. These men will not allow their horses to speed over the track in its present condition for fear of injuring them. The track is too hard and full of gravel. It also needs a new fence around it.

Third. The roof of the Exposition Building is in bad condition. My worthy predecessor said of this: "It has been patched so much that it isn't worth further repairing. There has been enough expense put on it in the last five years to have built a new roof, and it will cost more every year."

Fourth. The fence around the grounds needs repairing.

Fifth. I think the changing of the poultry department to the Horticultural Hall was a good move, and it should be permanently located there.
My financial report has already been submitted by the Secretary, and it is unnecessary to repeat it here. I think the Women's Department should have exclusive control upstairs, not only of hiring officers, but carpenters also. It can and should be kept separate from the General Superintendent.

The reports of the Secretary, Treasurer and General Superintendent were all properly referred.

CATTLE DEPARTMENT.

MESSRS. DAVIDSON AND BOGGS, SUPERINTENDENTS.

In making our report of the Cattle Department of the State Fair we are glad to be able to report progress and note an improvement over 1885, not only in quantity and quality, but also in variety, an additional breed, viz.: a herd of fifteen Galloways, recently imported from Scotland, making seven distinct breeds on exhibition, as against six last year. In the beef breeds, Ohio, Kentucky, Indiana, Illinois, Iowa and Kansas were represented, and the contest was unpleasantly close for the committee, each State getting some first premiums in classes, while in herds Indiana had the honor of getting first on both aged and young herd; Iowa second on aged, and Kentucky second on young herd. The show of dairy cattle was large and fine, and took close work and no little patience by the committee to decide, Indiana taking first premium on herds; Ohio, second. The same rule was adhered to as adopted by the Board last year in regard to awarding committees, and, as a general thing, gave satisfaction.

The various breeds represented were as follows: Shorthorns, 47; Herefords, 42; Polled Angus, 31; Galloways, 15; Devons, 37; Holsteins, 67; Jerseys, 68—total, 307, an increase over last year of 19 head. The following States were represented as follows: New York, 14; Ohio, 64; Kentucky, 11; Illinois, 20; Iowa, 7; Kansas, 15; Indiana, 176. Your superintendents would respectfully repeat the suggestion made last year, to divide the sweepstake premium on dairy breeds into three parts, and let each breed compete among themselves; also make the herd premium on aged and young beef herds more nearly equal, as early maturity is fast growing in favor. We wish to return our thanks to the exhibitors for their prompt response to the call of the Marshal, thereby enabling us to get through with the different rings, according to program.
BOARD OF AGRICULTURE.

HORSE DEPARTMENT.

MESSRS. W. A. BANCS AND E. H. PEED, SUPERINTENDENTS.

In this department the show was excellent and equaled any preceding exhibition. The show of draft animals was not quite up to the standard, but the quality was exceedingly good. The general purpose and light harness classes, especially the last named, were fine, and we think surpassed the exhibit at any previous fair. There was much complaint on the ruling of the Board in the light harness class, requiring stallions shown to be standard bred. We thought at the time that the ruling was right, and, after witnessing the exhibit, were more convinced than ever that it was right, and think it would be a great mistake to go back to the old rule. The awards made by committees were in the main good, and the best of feeling prevailed. In the speed class the races were good, and were in every case trotted and paced for blood. All the stalls on the grounds were filled, and we were compelled to secure about fifty more at stables outside the grounds. With proper accommodations the horse department of the Fair can be made to rival any fair in the country.

SHEEP DEPARTMENT.

S. W. DUNGAN, SUPERINTENDENT.

The exhibit in the Sheep Department at our recent State Fair was quite creditable, both in numbers and quality. The principal breeds were represented as follows:

Cotswolds, 54; Southdowns, 73; Merinos, 35; Shropshires, 66; Oxfordshire-downs, 10; making a total of 238 head.

Of this number, 22 were from Ohio, 57 from Michigan, 36 from Kentucky, and 131 from Indiana.

Notwithstanding the continued depression both in the wool and mutton markets for the past four or five years, the exhibit in most of the classes, and more particularly in the sweepstake class, excelled any former show.

We were fortunate in having good awarding committee men, whose decisions were satisfactory both to exhibitors and "lookers-on." No protests were entered, and everything passed off pleasantly.
HOG DEPARTMENT.

DICK JONES, SUPERINTENDENT.

Upon entering the grounds Saturday before the fair, your Superintendent found all pens taken and some fifty applications on file. To build new pens is a small job, but to find ground to build them on was a question hard to solve. Through the kindness of Mr. Dungan we secured fifty-six sheep pens and built twenty new ones, thus managing to get our exhibit in shape.

It is hardly necessary to report to this convention that the show of swine at the Indiana State Fairs is the grandest in the United States. This all you who attend the fairs already know. We give the number of entries in each class, but this does not show the full number of hogs on the ground, as in some cases one entry requires five head of hogs. The entries were: Berkshires, 83; Poland Chinas, 180; Chester Whites, 36; small breeds, 54; sweepstakes, large, 96; sweepstakes, small, 46; total number entries, 495. The States represented were Indiana, Ohio, New York and Pennsylvania. In submitting this report too much can not be said in praise of the exhibitors. Crowded as they were, and often compelled to move their herds to make room, not one word of complaint was heard, but every effort was made by the exhibitor to assist the Board in every way possible.

We would suggest that this department be divided, and two superintendents be placed in charge, giving one the large and the other the small breeds.

We also suggest and recommend that the expert judge be used, and in all classes where a scale of points have been agreed on the score card be used.

We would further recommend additional premiums for breeders' herd of not less than seven animals, all to be bred and owned by one exhibitor, and for boar and five of his get under one year old.

POULTRY DEPARTMENT.

L. B. CUSTER, SUPERINTENDENT.

In the poultry department the exhibit was one of the very best that it has been our fortune to have on the State Fair grounds. The number of entries was five hundred and thirty-six, including fancy pigeons, rabbits, etc.

The improvements in the various breeds of poultry keep pace with that of any other class of farm stock.

The exhibitors were all well pleased with the change from the old poultry hall to the hall west of the main building, which is well adapted and suited for that purpose.

I would recommend that the same building be used the coming season.
The judge was very exact and cautious in making his awards, which gave general satisfaction to the exhibitors.

Everything passed satisfactorily and pleasantly to exhibitors and visitors.

MECHANICAL DEPARTMENT.

MESSRS. MITCHELL, GREER AND HARGROVE, SUPERINTENDENTS.

The only thing needed to make the mechanical display at the fair of 1886 perfect was work room.

There was enough on exhibition to have filled three times the space, yet with their characteristic good nature the exhibitors were willing to divide space, and be crowded to such an extent that the management were ashamed to ask more.

Our exhibition is continually increasing in size and merit, and we must have more room. Every State save three in the United States was represented, and applicants from several were turned away for want of room.

The same ticket system was adopted as in 1885, and I see no reason to abandon the same.

To the excellent "spacing" in the departments, we are much indebted to Mr. C. E. Merrifield, who is the man to have charge of that thankless job.

CARRIAGES AND WAGONS.

JOHN RATLIFF, SUPERINTENDENT.

This department was well represented. Displays were made from eight or ten States. The space assigned for the displays in this department consisted of the greater portion of the lower floor of the Exposition Building, all of which was rigidly economized.

This department comprised carriages, wagons, buggies, sleighs, furniture, stoves, etc. The washing-machine man, dairymen and soap vendor were not wanting to give density to the exhibit. The display was creditable to exhibitors as well as entertaining to visitors.

Notwithstanding the crowded condition of the building, and the reassigning of space not occupied by the first applicant, all exhibitors were provided for so as to secure a mutual good feeling. A few exhibitors at first seemed to think space was not as liberally bestowed as they desired, but on witnessing the crowded condition and the efforts of the Board to accommodate expressed entire satisfaction before the close of the fair.
I have had charge of this department for the third time, and think I may safely say the display was never better, and that those immediately interested should have credit for the results.

President Seward announced the following standing committees:

On Finance.—Messrs. L. B. Custer, Gerard Reiter and J. C. Stevens.

On Fair Grounds.—Messrs. J. M. Boggs, Will Cumback and Samuel Bowman.

The Secretary was instructed to have 5,000 copies of Col. J. B. Maynard’s address printed and distributed.

The following nominations to fill vacancies on the State Board were made:

5th District—Will A. Greer, of Dearborn.
6th District—Dick Jones, of Bartholomew, and B. B. Beeson, of Wayne.
7th District—E. H. Peed, of Henry.
9th District—R. C. McWilliams, of Parke, and H. LaTourette, of Fountain.
10th District—Jasper N. Davidson, of Montgomery.
11th District—John M. Graham, of Delaware, and Robert Simonton, of Huntington.
12th District—John M. Boggs, of Tippecanoe.
13th District—John Ratliff, of Grant, and Col. Willis W. Blanche, of Howard.

There being no further nominations the Board proceeded to discuss the practicability of moving the Fair Grounds to a more desirable locality, having better facilities for railroad transportation.

FAIR GROUNDS—CHANGE OF LOCATION.

Mr. Hendry. My idea was to have a committee appointed to look over the present grounds and determine whether it would be best to remain there or move elsewhere.

Mr. Mitchell. Let us settle this question now.

Mr. Nelson. I understand there was a committee appointed on this subject a year ago, I do not know why it has not reported; we are all anxious to know. If the President is authority on this matter we want to hear from him.

President Seward. I believe I was one of that committee appointed a year ago, and was also on the committee to see the
Governor, with a view of having him impress upon the Legislature the importance of leasing to us a piece of ground near the Deaf and Dumb Asylum. This was discussed at our last annual meeting. It was the sense of the meeting then that it was the best thing that could be done. The State was doing nothing with this ground, which was only a pasture for cattle running at large, and we thought they would certainly lease it to us, and let us have some money to fit it up with. During the summer and fall I visited that ground, and I must say if I was the whole State Board of Agriculture I would not take it as a gift for fair purposes. The ground lays badly, and you are compelled to cross the whole eastern railroad system to reach it. Mr. Heron and I drove there one day since the last fair, and it required twenty minutes to cross one railroad system, and I presume there are six or seven railroads to cross before reaching it. In my judgment, nothing could be done to injure our prosperity more; the people can not get there. Nine-tenths of the people first find a hotel and will then go to the fair in carriages or other conveyance. Railroad trains are calculated to frighten horses. Trains are moving constantly one way or the other, and would be a source of great danger. I do not think we want that ground. There are other grounds large enough and good enough, but we have nothing to buy with. It will require $50,000 to fit up a ground that we could put up with at all, and it will require $50,000 more to buy the land. We are tied hand and foot until we get out of debt. When we consider that we have the best fitted up grounds in the whole country, and, as I suggested in my address, if we exclude everything unimportant, in my opinion we will have plenty of room. We do not want anything there but what is a part of the State Fair exhibit. We will not, I think, in the future admit anything but what is a part of the State Fair exhibit. It is probable the time will come when we will have to move, but I think it has not come yet. I am in favor of remaining where we are until our financial condition will allow us to do better.
R. M. Lockhart. I had hoped this question would not come up until to-morrow. I think there would be no difficulty in getting a lease on the ground in question for a period of ninety-nine years, if we want it. Now, gentlemen, some of you will claim that the time has not come when it should be removed from the present location. I am one who believes that the time has come; that we should take some steps toward a change of location, where our exhibitors can be better accommodated than at present. The territory we occupy now is inadequate, and near the resident portion of the city. A few years ago we had a railroad track laid, which enabled exhibitors to carry their stock and machinery directly to the fair grounds, but we were afterward compelled to do without the track. One of the city officers told me last evening that a great fight would ensue if we attempted again to run steam cars in the north part of the city. Indiana is a great State—one of the foremost States in the Union, holding some of the grandest fairs in the country, and we should not be ashamed to go before the Legislature to ask for help. We do not have room enough for our exhibits. Last year I was assigned to the Horticultural Department, in the southwest corner of the building, while in the northeast a little corner was set apart for the floral display, neither of which was adequate for the exhibit. Machinery is an important feature of our fairs, but our accommodations are such that it necessarily has to be crowded into small space, and filled up, so that it is difficult for visitors to properly see and examine the exhibit. The time has come when we want more room; and the people are demanding better facilities for reaching the grounds. I deem it important that we have a way of reaching our fair grounds by railway trains. Some urge that it will be damaging to the city of Indianapolis, but I do not see how it can. At present the street cars are always crowded, and sometimes it is very difficult to reach the grounds in this way. Men with their wives and children won't go that way on account of the crowded condition of the streets cars, and I repeat that it is important that we have better facilities. Col. Maynard has told us in his
address that the agriculturalists should be treated better, and that we should not be afraid to go before our legislators and ask them to aid us. Our President says we are in debt; but to whom does this ground belong? It belongs to Indiana, and if we ever make more money than is required to run the fair, it will go into the treasury of the State. If our fairs from this time on are held in a place where we can get to the grounds with our machinery with less difficulty, the results will be more favorable. I must say that I want a change of location.

Mr. Mitchell. This question must be settled. This continued talk of moving the Fair Grounds is doing us an injury. I was at Chicago this fall, they have the street cars filled, while the steam cars are not. At St. Louis they have no trouble, and there is not a steam car reaching the ground. At the fat stock show, where they have a thousand head of horses and cattle, it is impossible for the transferman to move them away in time. Here at Indianapolis you are unloaded and on the way to the Fair Grounds within an hour. The fairs at Chicago are much larger than ours, and it is necessary to have large grounds. They have eighty acres and it makes the exhibit a little scattered. I am of the opinion that our fair should for the present remain where it is. The street cars, with five lines, could carry one hundred thousand visitors to the St. Louis fair daily. I hope the delegate members of the State Board will speak on this subject and have it settled forever.

Mr. Anderson. I think we should leave this until to-morrow. I suggest that a vote on this question be deferred until that time.

S. W. Dungan. I would like to hear from the Delegate Board. It was introduced at this time in order that they might discuss it. The State Board can discuss it at any time.

Mr. Anderson. I do not wish to stop this discussion.

Mr. Mitchell. What are your views on this subject?

Mr. Anderson. I am undecided; our State is divided so politically that we can not expect to get much assistance from the Legislature. For this reason, we will have to look to our own resources, and perhaps the fair had better remain where it is.
Mr. W. A. Maze. I have for some years been an exhibitor of swine at the State Fair. It has cost me more to get my stock from the railroad to the grounds than it does freight over the roads. It has always been an inconvenience to get stock to the grounds. If I arrive in the city at 4 o'clock, it takes until near midnight to reach the ground. This is one of the principal reasons I have for advocating its removal. If we could have it located near the Belt Road the expenses would be much less. People can get to the fair by street cars, but stock and heavy articles are more difficult to get there, and the transfer men charge double prices at State Fair time.

Mr. Stevens. I have had some experience in the past with fairs. This question has two sides. We have to make arrangements for transporting stock and machinery, and also to get the people there. I find, with what experience I have in holding fairs for twenty-five years, we have managed to get along very well. If we get close together, it teaches us sociability. With the present debt hanging over us and the Legislature fails to do anything for us, I think it bad policy to heap any more debt upon the Board.

Mr. Jones. I am anxious to have this question settled now. Manufacturers do not feel it practical to build on our present grounds when we are constantly discussing the propriety of moving the fair. I was talking with Mr. Reeves, our manufacturer, before leaving home. He said, "Whatever you do, don't get your grounds too large. The Ohio grounds are too much so, and the exhibit too widely scattered." Mr. Reeves said it was the same thing in Texas, and they were going to lease a part of the fair ground and make it smaller.

Mr. Davidson. This delegate board can not settle this question. It will be for the State Board to settle, and will have to be done in the future.

Mr. Tillson. I can not see why we should be continually agitating this question of moving the fair. The first thing to present before this Board would be somewhere to go to better ourselves. There has not been any place offered to us fit to hold a fair on, and now if we are going to move, where are we
going? It is an injury to be always agitating this question. I am in favor of stopping this right here, and in the future if a suitable place is offered we can move. We are considerably in debt, and have been trying to pay this debt off and it is not done yet.

R. M. Lockhart. It seems to me that we should act intelligently in this matter. There is no other city in the Union that has better facilities for transporting their stock than Indianapolis. We are assured that a good location can be had, and I think it is the duty of this Board to take some action in the matter at once.

Mr. Crim. As our Legislature is to meet soon, I was in hopes this committee would see different grounds, so we could make some proposition to the Legislature. I do not see how we can move the grounds for the next two years, as we have no place to go, and the Legislature would not make any appropriation until we know of some location and what the probable cost would be. I was in hopes this would have been the report of the committee. I am satisfied our present grounds are too small, and we will have to enlarge them to accommodate visitors and exhibitors. If we could get eight or ten acres in addition to what we have we could do for some years to come. Ground is getting high in price, and I do not know whether it would be advisable for this Board to purchase. I do not see how we can move until we get an appropriation from the Legislature. We have managed to reduce the debt somewhat, but still there is a great debt hanging over us. The question of railroads is an item for consideration. If we could get some suitable location that could be reached by steam cars, it would be better, but I would not want to take the grounds east of the city if they were donated. We can not get to them without crossing a number of railroad tracks, which would be a source of danger all the time. If we could secure ground that we could get to by the steam cars the attendance would be much larger. The year of the Exposition we sold 40,000 tickets one day, which was never equaled before or since. The facilities for getting the people from the depot to the Fair Grounds are
not sufficient. If we had cars running to the grounds we would doubtless have double the number of visitors. At the time of the Exposition we had steam to get them there and 25 cents admission. We have since increased the admission to 50 cents. If we had a location to which we could have access to by steam, I think the Legislature would make a handsome appropriation.

Mr. Sieg. This has been the trouble all the time. Why not settle this question here and forever? Why should we keep agitating this question? We can not pass laws like the Medes and Persians, and make them good for 100 years, but we can for five years. We can not get exhibitors to build houses and make improvements for one fair. People don’t want to do anything on uncertainties. We had better stay where we are for a definite time.

President Seward. Some think if it were on the Belt Road we would be fixed. There is not a greater mistake; the distance is too great. A great many go on foot and in carriages. A distance of four or five miles would make it late before they would get there. If the Fair Grounds were a mile closer it would be better for us, and the attendance would be larger. I think it is folly to move the Fair Grounds to the Belt Road. The Belt Road west of the river is near, but in any other direction it is three or four miles.

Mr. Ratliff. I think it is impossible for this convention to determine about moving the Fair Grounds in five or ten years. We can only say that it is impracticable to move it now. We can not pass on anything to bind a future body. We can only vote our present condition.

Mr. Mitchell. All through the year the agricultural papers have been agitating the idea of moving the Fair Grounds. The gentleman over here wants the resolution to lay over, which would be in order until the question of the report on the President’s address comes up.

Mr. Hendry. Several years ago we asked the Legislature to meet the interest on our outstanding indebtedness, which it did, and again when the receipts of the State Board were not suffi-
cient to meet the interest the Legislature stepped in and paid the interest. I understand these appropriations and the amount the State Board has been able to pay have reduced the indebtedness about one-half. This is doing well, but it has occupied a period of about thirteen years. While this is a fact, I very much doubt the propriety of the agriculturists of Indiana being burdened another thirteen years. If we go to the Legislature again, the first question they will ask will be, "What is the condition of the State Board of Agriculture? What has it been doing during the past thirteen years we have aided in saving your ground and credit?"

We should try and do something to infuse new life and blood in the agricultural interest of the State, and before this Delegate Board adjourns I hope to see some new method adopted for the propagation of the agricultural interest of the State.

We have county and township institutes, the object of which is to reach the teachers, pupils and parents, and all who are interested in the schools, and they do it most successfully. I want this Delegate Board to undertake this kind of work to infuse new ideas and carry them home to their families, building up agricultural institutes over the State, thereby doing much good.

At the close of the discussion a motion by Mr. Mitchell to hold the fair on the present grounds was carried.

The Board adjourned.

January 5, 1887.

Board met pursuant to adjournment.

After roll call Mr. Boggs, from the Committee on Fair Grounds, reported recommending a new roof for the main Exposition Building, a new fence around the race track, and the resoiling of the track at the home stretch. The matter of new horse stalls was referred to the new board.

The report was adopted.

Mr. Mitchell, Chairman of the Committee on Premium List, reported recommending its reference to the February meeting of the Board.

Report concurred in.
Mr. Mitchell offered the following, which was adopted:

Resolved, That in view of the very heavy losses resulting to the agricultural interests from the destruction of live stock in the States of Ohio, Kentucky, Missouri, Illinois and Indiana, by pleuro-pneumonia, hog cholera and other infectious and contagious diseases, it is of the utmost importance to the agricultural interests of Indiana that some means be devised and adopted by the State Legislature at its present session, whereby the introduction and spread of these diseases shall, so far as it is possible, be prevented in the State. And, be it further

Resolved, That a committee of three from this delegate State Board be appointed by the chair for the purpose of meeting with the Committee on Agriculture and other members of the Legislature to draft and agree on a bill to meet the requirements of this resolution.

The president appointed Messrs. Mitchell, Pruitt and S. F. Lockridge on the above resolutions.

DISCUSSION.

Mr. Mitchell. I wish all here would take interest enough to see their Representatives in the Legislature and urge upon them the enactment of a law through which this disease may be kept out of our State.

Mr. McDonald. I concur with the gentleman, and I hope the Chair will take no exceptions to what I may say. In the appointing of a committee we want a practical business committee. I am an agricultural man, and I want real practical men, irrespective of political party, represented on it.

Mr. Cumback. We had a committee appointed at the last meeting of this Delegate Board to make arrangements for the holding of this meeting in the new State House. I think now would be a good time for that committee to report.

President Seward. I believe I was one of that committee. I announced last year that our our next meeting would be held in the new State House, but six months ago it became apparent it could not be. The rooms set apart for the State Board of Agriculture are in progress, and only require furnishing. As I am connected with the State House Commission, I think we may safely say that the next meeting of this Board will certainly be held in the new State House.
Mr. Mitchell offered the following, which was unanimously adopted:

Whereas, Our entire cattle interests are constantly menaced by the presence of contagious pleuro-pneumonia in this country, and incalculable loss has already been inflicted upon this grand industry by the outbreaks of that disease; and

Whereas, The Consolidated Cattle Growers' Association of America, through its authorized committee, has formulated and had introduced into both Houses of Congress what is known as the Miller bill, providing adequate measures for completely eradicating the lung plague from this country; therefore,

Resolved, That the Indiana State and Delegate Board of Agriculture demand of the Representatives and Senators of this State in Congress their active support of this Miller bill, which has received the official indorsement of the authorized committee of the most powerful and influential association of cattle men ever organized.

Resolved, That the Secretary of the State Board be instructed to forward a copy of this resolution to each Representative and Senator in Congress from this State.

Mr. Lockhart, from the special committee on the President's and Mayor Denny's addresses, reported that they had carefully noted what the President had said as to the development of the various sources of wealth in the State. The finding of natural gas in different portions of the State may result in great good to the masses of our people, and its further development should be properly encouraged.

The importance of our annual meetings for the discussion of questions of mutual interest to all persons engaged in fair work can not be overestimated, and we regret that more time can not be given to the discussion of various questions that are brought forward at these annual gatherings.

The financial condition of the Board of Agriculture, as shown by the reports of the Secretary and Treasurer, show most conclusively that the Board has done everything in its power to remove the heavy burden of debt that hung, like a dark pall, over it for many years. We believe that our State Legislature, about to convene, should come to its rescue at once, and provide a fund for the payment of the balance of the indebtedness, and thereby place the Board on a footing that should enable it to carry out the designs of the law creating the State Board of Agriculture.

The question of a relocation of the fair grounds having been already discussed, and action taken by a vote of the Delegate Board, we do not consider it necessary to make any further suggestions at this time in relation to that matter.

The matter, as presented, in relation to the diseases of cattle and hogs in our State is one of vital importance, and we think this body should petition the Legislature to pass such laws as will permit the immediate action of the Governor of the State at all times to at once stamp out the disease when known to exist within the borders of our State, and to quarantine against stock coming from other States, when it is known that such diseases exist.
We believe that arrangements should be immediately made to locate a chair
of veterinary science, to be located at Purdue University under the charge of an
experienced veterinary surgeon, to whom all matters of this nature should be re-
ferred for investigation and immediate action.

Also, at the same place, a chair of entomology should be liberally provided
for, so that an experienced entomologist may be employed to look after the insect
pests that are giving our farmers so much trouble in different parts of the State.

We are also of the opinion that the Legislature should appropriate a sum of
money each year to be used by the State Board for the purpose of sending a com-
petent person out through the State to work up what are called "Farmers' Insti-
tutes." This course has been adopted by several of our sister States, and it has been
found to work admirably and has been a source of great benefit to the farming com-
munity in every State where it has been adopted.

We are in favor of what is termed the "Hatch Bill" now pending in Congress,
and favor the passage by this Delegate Board of the following resolutions:

To the Honorable Senators and Representatives in Congress from Indiana:

Whereas, The Indiana State Board of Agriculture is fully in sympathy with
all proper measures for the promotion of agriculture; therefore,

Resolved, That we heartily indorse the bill known as the "Hatch Experiment
Station Bill" now before the National Congress; and,

Resolved, That we respectfully and earnestly urge the Senators and Representa-
tives from Indiana to aid in securing the early passage of this bill, or the prin-
ciples it involves.

We do most fully indorse every word that has been said by our worthy Presi-
dent relating to the life work of our deputed fellow-worker, John Sutherland. His
memory will always be held dear and sacred by every one who had the good fortu-
une to know him in life.

We have reviewed the address of Mayor Denny, and do most heartily concur
with him in the many suggestions he has made for a co-operation of work between
the city of Indianapolis and the State Board of Agriculture, and we hope whoever
may be selected on the part of the State Board to look after its interests during the
coming year, may hold many conferences with the worthy Mayor and the business
men of this city for the purpose of carrying out this suggestion.

R. M. Lockhart,
B. B. Beeson,
John F. Wildman.

Committee.

Pending the adoption of the report Mr. Cumback said:

I presume the Legislature has by law determined the number of districts this
Board shall represent. We have at present sixteen districts. This report asks for
an appropriation for the promotion of "Farmers' Institutes." It occurs to me
that it would be well to ask the Legislature to increase the number of districts.
Some of the members of this Board represent ten or twelve counties, and if each
member represented three or four counties he could take charge of these institutes, and overlook the fair interest and put them in some kind of condition to do good. Those who hold institutes could regulate the time of holding county fairs so as not to interfere with others, and all work in harmony and union.

The report was adopted.

The subject of organizing "Farmers' Institutes" in the State was discussed as follows:

FARMERS' INSTITUTES.

W. B. Seward. We must have some legislative aid to assist in properly holding these institutes.

Mr. Mitchell. We had a very important paper on "The State Board of Agriculture as an Educator." In the first district our fairs do not conflict with each other. We make it a point to go around every season and discuss questions pertaining to agriculture. In Illinois they are holding Institutes in agricultural districts. Papers of importance are read before these institutes, some on drainage, some on the growth of wheat, others on the rearing of livestock, and other subjects that are of interest and value to the farmer. These papers are all followed by animated discussions, and are doing much good. If we can get the farmers to come out we shall have gained one point; but the difficulty comes home. Can you get them out to attend these Institutes? We have held Institutes in two or three instances in our own State, one at Crawfordsville, at which the attendance was quite meager.

Mr. Davidson. In regard to the Institute at Crawfordsville four years ago, I was fortunate enough to get a meeting at our place. We had a nice program and the best of writers, an ample room and nicely furnished; the meeting was well advertised. At that meeting we could not get the people to come out. The farmers did not seem to want to come. Perhaps they would call an hour or two and get a little information from some gentleman on the floor and retire again, coming and going all the time. We did not have the interest manifested we should have had. The next meeting was at Columbus. Mr. Quick spent $20 in working up that meeting; perhaps it
was better advertised. We advertised judiciously, but spent no private funds. We can not see how it is to be brought about. We have the Shorthorn, Wool-Growers', Swine Breeders' and other conventions, auxiliaries of the State Board, doing much good. I do not know whether it would be best to let this information remain in these channels or not.

Mr. Davis. Certainly there is some way to reach the farmer and cause him to become interested in this work. We should keep agitating the cause. New enterprises seldom make much headway on the start. You have to interest the people, which can be done only by talking on various farm topics.

Thos. Nelson. I attended the Institute held at Crawfordsville. It was not well attended. The Board became discouraged too soon. They should have kept on a little longer. That has been five or six years ago. There has been some progress since then. Then we did not have confidence in each other as we do now. The system should be taken up again.

Mr. Jones. We had some of the best papers ever read at the Institute at Crawfordsville. Mr. Kingsbury, Dr. Brown and others favored us with able addresses. It was agreed, then, that those Institutes should be held in four different sections of the State. I see Prof. Latta here. I would like to hear from him.

Prof. W. C. Latta, Purdue University. I have corresponded with Prof. Ingersoll on this subject. He was as enthusiastic in this matter as I am. We can get some light on this by looking at our sister States who have held such Institutes. In Michigan, Kansas, Illinois and Ohio they speak in glowing terms of the great good they have accomplished. I have had some little experience in Michigan before coming to this State. I do not know just what plan is best, but I think it is the general experience of those who have engaged in the work that it is best for the farming community to have the meetings in small towns, rather than in large cities, to get a good attendance. We should not be discouraged by the small crowds that attend. We must recognize that genuine growth and development is slow. We need pluck and perseverance, and then we will win.
Mr. Lockhart. In Ohio they pay Secretary Chamberlain, of the Ohio State Board, $2,500 a year for lecturing. He goes through the State holding farmers' Institutes. They have it understood that there will be an Institute, held at a certain time and place, and get them interested. If they know that some man is going to discuss practical knowledge they come out to hear him. If we could get the farmers and stock men interested and hold Institutes in the various counties of the State it would have a grand influence, worth much to us in the State of Indiana financially.

Mr. McGaughey. Mr. Lockhart has hit on the true theory. We want practical knowledge. The greatest drawback to these Institutes is the discussion of matters on scientific principles. The most successful way would be to encourage local organizations or societies, have them make exhibits of their own products. In this way you can encourage farmers.

Mr. Seward. We should have local organizations in the townships of the State, under the direction of the State Board of Agriculture. These primary meetings should be held by the local farmers of their respective neighborhood. The discussions will bring forward many matters, so the best men will be developed, and we will have district and local organizations and have practical information. There won't be so many D. D. and LL. D.'s, but individual farmers will become interested in these Institutes. Whenever you can get an Institute worked up in a township, let us have a set of rules and formula of business, appointing officers, etc. An Institute of this kind can be worked up and a large amount of good done.

Mr. Mitchell. The members of the Board in each district should take hold of the matter. Instead of having two or three in the State let us have many of them. There is no better channel than right through the Agricultural Association of the districts. Call them together and agree on a place of meeting, make everything as attractive as possible and urge the people to come out.

Mr. Cumback. I believe we had better refer this to the State Board to adopt a set of rules in each township, county and
district and let us get the farmers interested, we will then accomplish something. If we can have township organizations it will have a better effect on our fairs. I hope each member in the district will take steps to further the move.

Mr. McDonald. If you want these Institutes to prosper you must be practical and get men who are practical to discuss these questions of interest with the farmers. We should not “despise the day of small things,” but keep working on like Martin Luther and John Wesley, the two great Christian reformers of the world.

I. N. Cotton. We had a little experience in Marion County. We have an organization known as the Marion County Agricultural and Horticultural Society. We hold our meetings once a month. Through the summer season we hold in different country places in the county, have them to bring their dinners and hold them in picnic style. We offer a little premium on vegetables. Last August we held a meeting at my place. Some predicted a small attendance, but the result was we had 300 people at that meeting in my grove. They came with their baskets filled and we had a good time. If we could have had another in a month, I do not know whether my grove would have held them. They brought potatoes, butter and honey, on which we offered a small premium.

Mr. Cumback offered the following, which was adopted:

Resolved, That all that portion of the President's address and the report of the committee to whom it was referred, on the subject of Farmers' Institutes, be referred to the State Board, with the request that they formulate a full set of rules for the organization of such Institutes, and that the members of the State Board shall take such steps as they may deem best to secure such an organization in the county and townships in their several districts.

The following additional nominations were made: 13th District, I. B. McDonald and W. A. Maze; 10th District, J. W. Robe.

Mr. Davidson, from the Committee on Rules and Regulations, reported. The report was concurred in.

The subject of dehorning cattle was discussed at the suggestion of Mr. Will Greer.
DEHORNING CATTLE.

Will A. Greer. There seems to be no special business before the meeting. I wish to say that I have an interest in some valuable cattle. My bull is inclined to be vicious. I wish to know if aged cattle can be dehorned without killing them.

J. M. Boggs. John Heath had some Hereford cattle and had them dehorned without injuring them. I think if I had an animal that was vicious I would dehorn him and take the chances. Cattle are dehorned by cutting the horns off close to the skull with a saw.

Mr. Mitchell. If you breed your cows to a Polled Angus you will soon be rid of the horns. [Laughter.] There is a certain distance from the skull where the horns may be taken off easily and with only a slight flow of blood.

Mr. Crim. Any man who would dehorn a grown animal should be prosecuted.

Mr. Dinsmore. One of our large breeders has practiced this for two years. He says November is the best time.

Mr. Nelson. I know but little about this subject. It has been practiced on a Jersey bull in my neighborhood, and successfully; but, in my opinion, if friend Greer wants them without horns he had better get another breed.

Mr. Crim. I have a vicious bull, yet I would not risk dehorning him.

Mr. Goodwin, of the "Breeders' Gazette." Mr. Greer desires me to say something on this subject. I probably had best not give anything in the way of a reportorial or editorial opinion about it. Mr. H. H. Half, of Genesee, Ill., has decided that the horns can be taken off without injury to the animal. The Humane Society of Illinois stood out against it. The case was taken to court and witnesses put on the stand and testified that it was wrong, and Mr. Half's neighbors said when he began the dehorning process they proposed to mob him, but after watching the process carefully, finally, one by one, until each and every man said in that court room, under oath, that it was
the proper humane thing to do. These are facts. I do not care to express my opinion. I prefer a change of breed.

The motion of Mr. Mitchell asking that the Legislature be requested to increase the membership of the State Board of Agriculture was discussed.

**INCREASING MEMBERSHIP OF STATE BOARD.**

*Mr. Lockhart.* I am satisfied that no gentleman on the State Board would object to an addition to the number. At present there are but sixteen members. When there is an additional department at the State Fair to handle, it is sometimes hard work to get through. If some of the gentlemen are sick or not present to take care of his department, it falls to others. If the Legislature was asked to increase the number from sixteen to twenty-four, it would give but four counties in a district, there being ninety-six counties in the State. The districts are divided according to population. I think it would be a move in the right direction. It would increase the workers on the Board.

*Mr. Davis.* The gentleman is about right. Twenty-four would increase interest in the State and county fairs. If you have only one representative in seven or eight counties you can not have the same interest in the matter. Indiana is a large State, and certainly should be represented by twenty-four members.

*Mr. Mutz.* I feel some interest in the agricultural interest of the State, but, with all due respect to the gentleman, must enter my protest against this proceeding. We all know by experience and observation that large bodies are hard to control, and small bodies easy. When you increase the number of members of the State Board to double, or even twenty-four, it is very much harder to get up enterprise and interest. Sixteen members, well distributed over the State, will represent the agricultural interest of the State. With twenty-four members there would be an additional expense, and there seems to be enough scramble for office at present. Every district has a
representative to the State Board, and this Delegate Board may, at any time, instruct the State Board proper, and it will, no doubt, heed that instruction.

The motion to increase the membership was lost.

Prof. D. S. Jordon, of the State University, delivered his address on "The Food Fishes of Indiana," which will be found elsewhere in this report.

The Board proceeded to the election of members in the districts where terms expired to serve during the ensuing two years, with the following result:

Fifth District, Will A. Greer, Dearborn County.
Sixth District, Dick Jones, Bartholomew County.
Seventh District, E. H. Peed, Henry County.
Ninth District, R. C. McWilliams, Parke County.
Eleventh District, Robert Simonton, Huntington County.
Twelfth District, John M. Boggs, Tippecanoe County.
Thirteenth District, Col. Willis Blanche, Howard County.

DRAINAGE OF THE KANKAKEE.

Mr. Yeoman. There was a committee appointed a year ago by this Board to look after the drainage of the Kankakee River. I would like to hear from that committee.

Mr. Sieg. Mr. Banks, I believe, is chairman of that committee, but has no orders to report to this body. I do not know what steps have been taken in the matter.

Mr. Banks. We have not got it drained yet. I understand, Mr. President, that Illinois has a committee appointed to wait upon the people of Momence to see if they can effect some plan wherein they can get those ledges of rock taken away or lowered. I do not know whether they will succeed or not. We cannot do anything unless this is effected, and it is very doubtful whether this can be done. It is hard work for anything to be done in the matter, unless the Legislature will take hold of it. We have done all we can to get Congress to act upon it, with poor encouragement.

The Finance Committee reported on the Secretary's and Treasurer's accounts, finding them correct in every particular.
Mrs. L. G. Hufford addressed the Board on "The Place of Woman Among the World's Workers," which will be found elsewhere in this report.

A vote of thanks was tendered her, after which the Board adjourned to 8:30 A. M.

JANUARY 6, 1887.

The Delegate State Board met pursuant to adjournment.

On motion of Mr. Mitchell, Messrs. Seward, Sieg, and the mover (Mr. Mitchell) were appointed to investigate the charge by one of the ticket sellers that there was a shortage in ticket packages at the last Fair. Pending report of committee, Prof. F. M. Webster, State Entomologist, delivered an address on "Some Insects Affecting the Smaller Cereal Grains," which is published in full elsewhere in this report.

Mr. Banks offered the following:

WHEREAS, We believe the investigations of the habits of injurious insects now being carried on by the entomological division of the United States Department of Agriculture, to be of important practical value to the agriculturists of this and other States, and hence of vast benefit to the entire country; therefore,

Resolved, That we do hereby respectfully petition the Honorable Senators and Representatives of the State of Indiana to use their best efforts to secure for said division of the United States Department of Agriculture a sufficient appropriation to permit of the successful continuance of these investigations in the future.

The resolution was adopted.

Prof. Latta, of Purdue University, addressed the Board on "Desirable Soil Conditions and How Far Secured by Tile Drainage," which will be found elsewhere in this report.

After voting thanks to Prof. Webster and Prof. Latta, the Delegate Board adjourned sine die.

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PROCEEDINGS OF OLD BOARD—1886.

10 O'CLOCK, A. M.

The State Board met on the adjournment of the Delegate Board and received the report of the Committee on the alleged shortage in tickets, which fully and completely exonerated Treasurer Johnson from any knowledge of the shortage.

5—Bd. of Agr.
Thereupon the Board proceeded to complete the year's work, which was quickly done, by sustaining several protests entered at the last State Fair.

Adjourned *sine die.*

**ORGANIZATION NEW BOARD—1887.**

3 o'clock P. M.


The organization of the new Board was completed by the election of the following officers:

- President: Hon. W. B. Seward, of Monroe County.
- Vice President: Will A. Greer, of Dearborn County.
- Secretary: Alex Heron, Marion County.
- Treasurer: Sylvester Johnson, Marion County.
- General Superintendent: C. E. Merrifield, of Marion County.

The Secretary's salary was increased to $1,600 per year, and the Treasurer's to $300.

The date of the fair for 1887 was fixed for the week beginning September 19.

Messrs. Mitchell, Banks and Hargrove were appointed to draft resolutions on the death of Hon. John Sutherland, of Laporte, and report to the February meeting.

Mr. Mitchell offered a resolution requesting the railroads centering at Indianapolis to give reduced rates to delegates attending the State Association meetings. Adopted.

Messrs. Lockhart, Mitchell, Simonton and Seward were appointed as a committee to "formulate a system governing County Institutes."

Board adjourned to February 15, 1887.
INDIANA STATE FAIR.

1886.

PREMIUM AWARDS.

CATTLE.

J. N. DAVIDSON AND J. M. BOGGS, Superintendents.

CLASS I—Shorthorns.

(Where State is not given Indiana is implied.)

Bull, 3 years old and over, Jacob Henn, Redmond, Ill .... $25 00
  Second, Thomas Wilhoit, Middletown .................. 12 00
Bull, 2 years old and under 3, Abram Renick & Bros., Clintonville, Ky ... 20 00
  Second, Thomas Wilhoit, Middletown .................. 10 00
Bull, 1 year old and under 2, Abram Renick & Bros., Clintonville, Ky ... 16 00
  Second, Jacob Henn, Redmond, Ill .................... 8 00
Bull, under 1 year, Thomas Wilhoit, Middletown ........... 8 00
  Second, Thomas Wilhoit, Middletown .................. 4 00
Cow, 3 years old and over, Jacob Henn, Redmond, Ill .... 25 00
  Second, Abram Renick & Bros., Clintonville, Ky .... 12 00
Cow, 2 years old and under 3, Thos. Wilhoit, Middletown ... 20 00
  Second, Abram Renick & Bros., Clintonville, Ky .... 10 00
Heifer, 1 year old and under 2, Abram Renick & Bros., Clintonville, Ky .... 16 00
  Second, Thomas Wilhoit, Middletown .................. 8 00
Heifer, under 1 year, Jacob Henn, Redmond, Ill ........ 8 00
  Second, Abram Renick & Bros., Clintonville, Ky .... 4 00

Committee—Eugene F. Owen, New Harmony; J. G. Goodwin, Beloit, Kas.; C. Holler, South Bend.
BOARD OF AGRICULTURE.

CLASS II—Herefords.

Bull, 3 years old and over, Adams Earl, Lafayette .................. $25 00
  Second, Iowa Hereford Cattle Co., Indianola, Iowa ................ 12 00
Bull, 2 years old and under 3, Ind. Blooded Stock Co., Indianapolis ... 20 00
  Second, Thomas Clark, Beecher, Ill .......................... 10 00
Bull, 1 year old and under 2, Thomas Clark, Beecher, Ill ............. 16 00
  Second, Adams Earl, Lafayette ................................ 8 00
Bull, under 1 year, Adams Earl, Lafayette ................................ 8 00
  Second, Ind. Blooded Stock Co., Indianapolis .................... 4 00
Cow, 3 years old and over, Thos. Clark, Beecher, Ill ................. 25 00
  Second, Adams Earl, Lafayette ................................ 12 00
Cow, 2 years old and under 3, Iowa Hereford Cattle Co., Indianola, Iowa 20 00
  Second, Adams Earl, Lafayette ................................ 10 00
Heifer, 1 year old and under 2, Thos. Clark, Beecher, Ill ............ 16 00
  Second, Iowa Hereford Cattle Co., Indianola, Iowa .............. 8 00
Heifer, under 1 year, Iowa Hereford Cattle Co., Indianola, Iowa .... 8 00
  Second, Adams Earl, Lafayette ................................ 4 00

Committee—Samuel Dinsmore, Bloomington; Jas. Gillie, Fort Wayne; W. Q. O’Neall, Yountsville.

CLASS III—All Polled Breeds.

Bull, 3 years old and over, J. S. Goodwin, Beloit, Kan .................. $25 00
  Second, David McKay, Fort Wayne .................................. 12 00
Bull, 1 year old and under 2, Benton Garinger, Washington C. H., Ohio 16 00
  Second, J. S. Goodwin, Beloit, Kan ............................. 8 00
Bull, under 1 year, Ind. Blooded Stock Co., Indianapolis ............... 8 00
  Second, David McKay, Fort Wayne .................................. 4 00
Cow, 3 years old and over, J. S. Goodwin, Beloit, Kan .................. 25 00
  Second, David McKay, Fort Wayne .................................. 12 00
Cow, 2 years old and under 3, David McKay, Fort Wayne ................. 20 00
  Second, J. S. Goodwin, Beloit, Kan ............................. 10 00
Heifer, 1 year old and under 2, J. S. Goodwin, Beloit, Kan ............ 16 00
  Second, Benton, Garinger, Washington C. H., Ohio ............... 8 00
Heifer, under 1 year, Benton, Garinger, Washington C. H., Ohio ....... 8 00
  Second, Benton Garinger, Washington C. H., Ohio ................ 4 00

Committee—Samuel Dinsmore, Bloomington; C. H. Capeen, Aurora, Ill.; W. Q. O’Neall, Yountsville.
PREMIUM AWARDS.

CLASS IV—Jerseys.

Bull, 3 years old and over, Peter Raab, Dumont .................................................. $25 00
  Second, W. J. Hasselman, Indianapolis ................................................................. 12 00
Bull, 1 year old and under 2, T. P. Haughey, Indianapolis ............................... 16 00
  Second, R. R. Sloan, Indianapolis .............................................................................. 8 00
Bull, under 1 year, W. J. Hasselman, Indianapolis .................................................... 8 00
  Second, Peter Raab, Dumont ...................................................................................... 4 00
Cow, 3 years old and over, H. H. Whitchcraft, Greenwood ............................... 25 00
  Second, R. R. Sloan, Indianapolis .............................................................................. 12 00
Cow, 2 years old and under 3, T. P. Haughey, city ............................................... 20 00
  Second, W. H. Whitchcraft, Greenwood .................................................................... 10 00
Heifer, 1 year old and under 2, W. H. Whitchcraft, Greenwood ...................... 16 00
  Second, W. J. Hasselman, city .................................................................................... 8 00
Heifer, under 1 year, W. J. Hasselman, city .............................................................. 8 00
  Second, Jos. A. Moore, city ......................................................................................... 4 00


CLASS V—Devon.

Bull, 3 years old and over, Whitmore & Younger, Casstown, Ohio ................ $25 00
  Second, Chas. York, Brock, Ohio .................................................................................. 12 00
Bull, 2 years old and under 3, Chas. York, Brock, Ohio ...................................... 20 00
  Second, Whitmore & Younger, Casstown, Ohio ......................................................... 10 00
Bull, 1 year old and under 2, Whitmore & Younger, Casstown, Ohio .............. 16 00
  Second, J. L. Crawford, Oakland ................................................................................ 8 00
Bull, under 1 year, Whitmore & Younger, Casstown, Ohio .................................. 8 00
  Second, Chas. York, Brock, Ohio ................................................................................ 4 00
Cow, 3 years old and over, Chas. York, Brock, Ohio ............................................. 25 00
  Second, Chas. York, Brock, Ohio ................................................................................ 12 00
Cow, 2 years old and under 3, Chas. York, Brock, Ohio ....................................... 20 00
  Second, Whitmore & Younger, Casstown, Ohio ......................................................... 10 00
Heifer, 1 year old and under 2, Chas. York, Brock, Ohio ..................................... 16 00
  Second, Whitmore & Younger, Casstown, Ohio ......................................................... 8 00
Heifer, under 1 year, Whitmore & Younger, Casstown, Ohio .............................. 8 00
  Second, Whitmore & Younger, Casstown, Ohio ......................................................... 4 00


CLASS VI—Holsteins.

Bull, 3 years old and over, J. W. Stillwell, Troy, Ohio ........................................ $25 00
  Second, Unadilla Valley Stock Breeders’ Ass’n., W. Edmeston, N. Y. ............... 12 00
Bull, 2 years old and under 3, S. W. Dungan, Franklin .................................... 20 00
  Second, Jos. A. Moore, city ........................................................................................ 10 00
Bull, 1 year old and under 2, J. W. Stillwell & Co., Troy, Ohio .......... $16.00  
Second, H. Lensmann, Indianapolis .................................. 8.00  
Bull, under 1 year, Jos. A. Moore, Indianapolis .................. 8.00  
Second, J. W. Stillwell & Co., Troy, Ohio ......................... 4.00  
Cow, 3 years old and over, J. W. Stillwell & Co., Troy, Ohio .... 25.00  
Second, J. W. Stillwell & Co., Troy, Ohio ......................... 12.00  
Cow, 2 years old and under 3, J. W. Stillwell & Co., Troy, Ohio .... 20.00  
Second, H. Lensmann, Indianapolis .................................. 10.00  
Heifer, 1 year old and under 2, S. W. Dungan, Franklin .......... 16.00  
Second, J. W. Stillwell & Co., Troy, Ohio .......................... 8.00  
Heifer, under 1 year, J. W. Stillwell & Co., Troy, Ohio ........... 8.00  
Second, J. W. Stillwell & Co., Troy, Ohio ......................... 4.00  

Committee—Christian Holler, South Bend; L. H. Greer, Aurora; I. L. Kenyon, Indianapolis.

CLASS VII—Sweepstakes—Beef Breeds of Cattle.

Bull, any age or breed, Iowa Hereford Cattle Co., Indianola, Iowa  ................ $30.00  
Cow, any age or breed, Thomas Wilhoit, Middletown .................. 25.00  
Herd of five, consisting of one bull 2 years old or over, 1 cow 3 years old  
or over, 1 heifer 2 years old and under 3, 1 heifer 1 year old and  
under 2, 1 heifer calf under 1 year old, Adams Earl, Lafayette .......... 150.00  
Second, Iowa Hereford Cattle Co, Indianola, Iowa ................... 75.00  
Best young herd beef cattle, to consist of one bull and four heifers, all  
under 2 years old, Adams Earl, Lafayette ........................... 80.00  
Second, Abram Renick & Bros., Clintonville, Ky ..................... 40.00  
Best five fat steers, no steer to weigh less than 1,500 pounds; mode of feeding  
and breeding, and age of each steer must accompany the entries, Thos. Wilhoit, Middletown .......... 75.00  

Committee—Samuel Dinsmore, Bloomington; James Gillie,  
Fort Wayne; W. Q. O'Neall, Yountsville.

CLASS VIII—Sweepstakes—Milk Breeds Cattle.

Bull, any age or breed, Unadilla Valley Stock Breeders' Association, West  
Edmeston, N. Y. ......................................................... $30.00  
Cow or heifer, any age or breed, Unadilla Valley Stock Breeders' Association,  
West Edmeston, N. Y. ................................................. 25.00  
Herd, consisting of 1 bull 2 years old or over, 1 cow 3 years old or over, 1  
heifer 2 years old and under 3, 1 heifer 1 year old and under 2,  
heifer calf under 1 year old, H. H. Wheatcraft, Southport, Ind ....... 150.00  
Second, Chas. York, Brock, Ohio .................................... 75.00  

Committee—Calvin Fletcher, Spencer; Geo. W. Krinfa,  
Greencastle; D. J. Whitmore, Casstown, Ohio.
HORSES.

W. A. Banks and E. H. Peed, Superintendents.

CLASS IX—Heavy Draft.

FRENCH DRAFT.

Stallion, 4 years old and over, Dillon Bros., Normal, Ill. $35 00
Second, Bridgeland & Berry, Indianapolis 18 00
Stallion, 3 years old and under 4, Bridgeland & Berry, Indianapolis 25 00
Second, Dillon Bros., Normal, Ill. 13 00
Stallion, 2 years old and under 3, Dillon Bros., Normal, Ill. 16 00
Second, Bridgeland & Berry, Indianapolis 8 00
Stallion, 1 year old and under 2, Bridgeland & Berry, Indianapolis 8 00
Second, Dillon Bros., Normal, Ill. 4 00
Stallion colt, under 1 year, Bridgeland & Berry, Indianapolis 6 00
Mare, 4 years old and over, Bridgeland & Berry, Indianapolis 20 00
Second, Dillon Bros., Normal, Ill. 10 00
Mare, 3 years old and under 4, Dillon Bros., Normal, Ill 16 00
Second, Bridgeland & Berry, Indianapolis 8 00
Mare, 2 years old and under 3, Bridgeland & Berry, Indianapolis 12 00
Second, Dillon Bros., Normal, Ill. 6 00
Mare, 1 year old and under 2, Bridgeland & Berry, Indianapolis 8 00
Second, Dillon Bros., Normal, Ill. 4 00
Mare colt under 1 year, Dillon Bros., Normal Ill. 6 00
Second, Dillon Bros., Normal, Ill. 3 00


CLASS X—Clydesdale and English Draft.

Stallion, 4 years old and over, Mathew Hazlitt & Son, Franklin $35 00
Second, David McKay, Fort Wayne 18 00
Stallion, 3 years old and under 4, Hick Jackson, Mooresville 25 00
Second, Door Prairie Live Stock Association, Door Village 13 00
Stallion, 2 years old and under 3, D. P. Live Stock Ass'n, Door Village 16 00
Second, Fisher & Gilson, Canada 8 00
Mare, 4 years old and over, David McKay, Fort Wayne 20 00
Second, David McKay, Fort Wayne 10 00

Committee—George Agniel, Princeton; Eli Brenneman, Decatur, Ill.; J. C. Brand, Waterloo.
BOARD OF AGRICULTURE.

DRAFT HERD—All Classes.

Herd of six consisting of 1 stallion, 1 mare 4 years old and over, 1 mare 3 years old and under 4, one 2 years old and under 3, one 1 year old and under 2 and one suckling colt, Dillon Bros., Normal, Ill. $70 00
Second, Bridgeland & Berry, Indianapolis 35 00

Committee—George Agniel, Princeton; H. B. Howland; A. G. Vance, Franklin.

CLASS XI—Grade, Draft—Mares and Geldings.

Mare, 4 years and over, Dillon Bros., Normal, Ill. $16 00
Second, Dillon Bros., Normal, Ill. 8 00
Mares, 3 years old and under 4, Samuel Buchanan, Zionsville 12 00
Second, Samuel Buchanan, Zionsville 6 00
Mare, 2 years old and under 3, S. L. Wright, Bloomington 10 00
Mare colt under 1 year, Dillon Bros., Normal, Ill. 6 00
Draft team, Dillon Bros., Normal, Ill. 16 00

Committee.—Geo. Agniel, Princeton; Eli Brenneman, Decatur, Ill.; J. C. Brand, Waterloo.

CLASS XII—Cleveland Bays.

Stallion, 4 years old and over, D. P. Live Stock Ass'n., Door Village. $35 00
Second, Door Prairie Live Stock Association, Door Village. 18 00
Stallion, 3 years old and under 4, D. P. Live Stock Ass'n., Door Village. 25 00
Stallion, 2 years old and under 3, D. P. Live Stock Ass'n., Door Village. 16 00
Mare, 2 years old and under 3, V. Banhard, Martinsville 12 00

Committee—George Agniel, Princeton; P. C. McWilliams; Rockville.

CLASS XIII—Horses for General Purposes.

Stallion, 4 years old and over, Clark Hyde, Knightstown $35 00
Second, W. L. King, Manilla 18 00
Stallion, 3 years old and under 4, F. A. Walker, Traders Point 25 00
Second, S. H. Blayds, Roachdale. 13 00
Stallion, 2 years old and under 3, John Hoover, Spiceland. 16 00
Second, McKee & Jackson, Mooresville. 8 00
Stallion, 1 year old and under 2, W. P. Swain & Son, Bellmore. 8 00
Second, J. D. Lowden, Lawrence 00
Stallion colt under 1 year, W. P. Swain & Son, Bellmore. 6 00
Mare, 4 years old and over, John W. Fort, Indianapolis 20 00
Second, George List, Oakland 10 00
Mare, 3 years and under 4, John W. Fort, Indianapolis 16 00
Second, Harry G. Patterson, Indianapolis 8 00
PREMIUM AWARDS.

Mare, 2 years old and under 3, J. M. Prichard, Jolietville, Hamilton County $12 00
  Second, John W. Fort, Indianapolis 6 00
Mare, 1 year old and under 2, Jas. Robey, Sabine 8 00
  Second, John W. Fort, Indianapolis 4 00
Mare, colt under 1 year, John W. Fort, Indianapolis 6 00
  Second, W. P. Swain & Son, Bellemore, Parke County 3 00
Gelding, 3 years old and over, W. W. Baker, Indianapolis 25 00
  Second, Geo. Anderson, Greensburg 12 00
Pair of geldings or mares, Samuel Buchanan, Zionsville 20 00
  Second, W. D. Wiles, Indianapolis 10 00

General Purpose Herd.

Herd of six, consisting of one stallion, 1 mare 4 years old and over, one 3 years old and under 4, one 2 years old and under 3, one 1 year old and under 2, and one sucking colt, John W. Fort, Indianapolis. $70 00

Committee—P. C. McWilliams, Rockville; Geo. Agniel, Princeton; W. E. Nichols, Indiana, Pa.

CLASS XIV—Light Harness Horses.

Stallion, 4 years old and over, Buck Dickerson, Greensburg $35 00
  Second, Brenneman Bros., Decatur, Ill 18 00
Stallion, 3 years old and under 4, Brenneman Bros., Decatur, Ill 25 00
  Second, M. L. Hare, Fisher's Station 13 00
Stallion, 2 years old and under 3, M. L. Hare, Fisher's Station 16 00
  Second, Brenneman Bros., Decatur, Ill 8 00
Stallion, 1 year old and under 2, M. L. Hare, Fisher's Station 8 00
  Second, Thomas Levi, Noblesville, Ind 4 00
Stallion colt, under 1 year, M. L. Hare, Fisher's Station 6 00
  Second, B. T. Buford, Danville 3 00
Gelding, 3 years old and over, Buck Dickerson, Greensburg 25 00
  Second, J. V. Mitchell, Martinsville 12 00
Mare, 4 years old and over, M. L. Hare, Fisher's Station 20 00
  Second, Frank Armstrong, Indianapolis 10 00
Mare, 3 years old and under 4, J. L. Caldwell, Lewisville 16 00
  Second, M. L. Hare, Fisher's Station 8 00
Mare, 2 years old and under 3, Brenneman Bros., Decatur, Ill 12 00
  Second, M. L. Hare, Fisher's Station 6 00
Mare, 1 year old and under 2, M. L. Hare, Fisher's Station 8 00
  Second, J. L. Caldwell, Lewisville, Henry County 4 00
Mare, colt, under 1 year, M. L. Hare, Fisher's Station 6 00
  Second, Joseph Beard, Indianapolis 3 00
Light harness team, Frank Walker, city 16 00
  Second, M. L. Hare, Fisher's Station 8 00
BOARD OF AGRICULTURE.

Light Harness Herd.

Herd of six, consisting of 1 stallion, 1 mare 4 years old and over, 1 mare 3 years old and under 4, 1 mare 2 years old and under 3, 1 mare 1 year old and under 2, and one sucking colt, J. L. Caldwell, Louisville: $70 00
Second, M. L. Hare, Fisher's Station: 35 00

Saddle Horses.

Stallion, gelding or mare, any age, Horace Wood, Indianapolis: $15 00
Second, A C. Remy, Indianapolis: 7 00

Committee—John Paul, Wabash; J. C. Brand, Waterloo; J. R. White, Henderson, Ky.

CLASS XV—Sweepstakes on Horses.

Stallion of any age, draft, Mathew Hazlett & Sons, Franklin: $25 00
Stallion of any age, general purpose, W. L. King, Manilla: 25 00
Stallion of any age, light harness, Brennaman Bros., Decatur, Ill: 25 00
Mare of any age, draft, Dillion Bros., Normal, Ill: 20 00
Mare of any age, general purpose, T. F. McCarty, Fisher's Station: 20 00
Mare of any age, light harness, M. L. Hare, Fisher's Station: 20 00
Brood mare with sucking colt at foot, heavy draft, Bridgeland & Barry, Indianapolis: 10 00
Brood mare with sucking colt at foot, general purpose, W. P. Swain & Son, Bellmore: 10 00
Brood mare with sucking colt at foot, light harness, M. L. Hare, Fisher's Station: 10 00

Committee—M. W. Hilles, Greensburg; Geo. W. Sawdon, Aurora; V. K. Office, Volga; C. A. C. Hawett, Millville; Geo. Agniel, Princeton; Robert Dixon, Henderson, Ky.

CLASS XVI—Jacks, Jennets and Mules.

Jack, 3 years old and over, W. L. Caldwell, Danville, Ky: $16 00
Second, A. C. Remy, Indianapolis: 8 00
Jack, 2 years old and under 3, W. L. Caldwell, Danville, Ky: 12 00
Second, W. L. Caldwell, Danville, Ky: 6 00
Jack, 1 year old and under 2, W. L. Caldwell, Danville, Ky: 8 00
Jennet, 3 years old and over, W. L. Caldwell, Danville, Ky: 8 00
Second, Jos. and James Beatty, Indianapolis: 4 00
Mule, 4 years old and over, Moses Kennedy, Danville: 10 00
Second, Levi & Munter, Indianapolis: 5 00
Pair of mules, 3 years old and over, Moses Kennedy, Danville: 20 00
Second, John H. Harvey, Carmel: 10 00
PREMIUM AWARDS.

Sweepstakes on Jacks and Jennets.

Jack, any age, W. L. Caldwell, Danville, Ky.
Jennet, any age.

Committee—W. W. Hamilton, Greensburg; A. W. Powell, New Castle; Cale W. Waterman, Waterman.

CLASS XVII—Speed List.

Three-year-old Trot—Purse $130:
James Hazelton, Decatur, Ill.
J. H. Dickerson, Greensburg
W. H. Wheeler, Malott Park

2:37 Pace—Purse $130:
H. D. McCory, Evansville
W. M. Watters, Strawn Station, Henry County
Buck Dickerson, Greensburg

2:37 Trot—Purse $170:
Richard Wilson, Rushville
J. T. McCoy, Madison
H. W. Caylor, Noblesville

Three-minute Trot—Purse $170:
Buck Dickerson, Greensburg
Sam O. Flemming, Terre Haute

Runners, half-mile, best two in three—Purse $100:
Sam O. Flemming, Terre Haute
M. Stark, Slidell, Ill
James Neff, Lebanon

Running race, one mile and repeat—Purse $130:
Sam O. Flemming, Terre Haute
James Neff, Lebanon
Tom Levi, Noblesville

Free-for-all Pace—Purse $200:
George Cutsinger, Edinburg
Buck Dickerson, Greensburg
W. D. McCory, Evansville

2:30 Trot—Purse $200:
A. Hanes, Terre Haute
Sam O. Flemming, Terre Haute
James Hazelton, Decatur, Ill
Time—2:36, 2:37, 2:37, 2:33.
BOARD OF AGRICULTURE.

Stallion Trot, all ages—Purse $200:

Robert Dixon, Henderson, Ky ........................................... $100 00
L. W. Cobb, Aurora ......................................................... 65 00
Tom Levi, Noblesville ...................................................... 35 00

Free-for-all Trot—Purse $200:

J. S. Ryan, Detroit, Mich ................................................. 100 00
A. Hanes, Terre Haute ..................................................... 65 00
John Dickerson, Greensburg ............................................. 35 00

2:30 Pace—Purse $130:

Tom Stewart, Orleans .................................................... 70 00
George H. Gifford, Tipton .............................................. 45 00
Archie Bowman, Indianapolis ........................................... 15 00

SHEEP.

S. W. DUNGAN, Superintendent.

CLASS XVIII—Fine Wool, to Include American, Spanish and French Merinos.

Buck, 2 years old and over, Cook & Morse, Raymonds, Ohio .......... $12 00
Second, Uriah Privett & Bros., Greensburg .......................... 6 00
Buck, 1 year old under 2, Cook & Morse, Raymonds, Ohio .......... 8 00
Second, Cook & Morse, Raymonds, Ohio ............................ 4 00
Buck, under 1 year, Uriah Privett & Bros., Greensburg .......... 6 00
Second, Cook & Morse, Raymonds, Ohio ............................ 3 00
Ewe, 2 years old and over, Cook & Morse, Raymonds, Ohio .......... 10 00
Second, Uriah Privett & Bros., Greensburg .......................... 5 00
Ewe, 1 year old and under 2, Uriah Privett & Bros., Greensburg .. 6 00
Second, Uriah Privett & Bros., Greensburg .......................... 3 00
Ewe, under 1 year, Cook & Morse, Raymonds, Ohio .................. 5 00
Second, Uriah Privett & Bros., Greensburg .......................... 3 00
Five lambs, Cook & Morse, Raymonds, Ohio .......................... 8 00
Second, Uriah Privett & Bros., Greensburg .......................... 4 00

Committee—Chas. Kurtz, H. C. Wagner, Wm. Peed, New Castle.
PREMIUM AWARDS.

CLASS XIX—Long Wool Sheep, Cotswold, Leicester or Lincoln.

Buck, 2 years old and over, J. B. Harkless, Knightstown .............. $12 00
- Second, Uriah Privett & Bros., Greensburg .......................... 6 00
Buck, 1 year old and under 2, Uriah Privett & Bros., Greensburg .... 8 00
  Second, Uriah Privett & Bros., Greensburg ......................... 4 00
Buck, under 1 year, J. B. Harkless, Knightstown ....................... 6 00
  Second, Anne Newton, Pontiac, Mich. ............................... 3 00
Ewe, 2 years old and over, Uriah Privett & Bros., Greensburg ....... 10 00
  Second, Uriah Privett & Bros., Greensburg ......................... 5 00
Ewe, 1 year old and under 2, Uriah Privett & Bros., Greensburg ....... 6 00
  Second, Uriah Privett & Bros., Greensburg ......................... 3 00
Ewe, under 1 year, J. B. Harkless, Knightstown ....................... 5 00
  Second Frank Wilson, Jackson, Mich ............................... 3 00
Five lambs, J. B. Harkless, Knightstown ........................... 8 00
  Second, Frank Wilson, Jackson, Mich ............................... 4 00


CLASS XX—Southdowns.

Buck, 2 years old and over, Uriah Privett & Bros., Greensburg ........ $12 00
  Second, W. D. Irwin, Danville, Ky .................................. 6 00
Buck, 1 year old and under 2, Anna Newton, Pontiac, Mich ............ 8 00
  Second, W. D. Irwin, Danville, Ky .................................. 4 00
Buck, under 1 year, Bals & Laut, Indianapolis ........................ 6 00
  Second, W. D. Irwin, Danville, Ky .................................. 3 00
Ewe, two years old and over, W. D. Irwin, Danville, Ky ............... 10 00
  Second, Uriah Privett & Bros., Greensburg ......................... 5 00
Ewe, 1 year old and under 2, Anna Newton, Pontiac, Mich ............. 6 00
  Second, W. D. Irwin, Danville, Ky .................................. 3 00
Ewe, under 1 year, Bals & Laut, Indianapolis ........................ 5 00
  Second, W. D. Irwin, Danville, Ky .................................. 3 00
Five lambs, W. D. Irwin, Danville, Ky ............................... 8 00


CLASS XXI—Oxfordshire, Shropshire and Hampshire.

Buck, 2 years old and over, J. L. Thompson & Son, Arcana ............ $12 00
  Second, Uriah Privett & Bros., Greensburg ......................... 6 00
Buck, 1 year old and under 2, Uriah Privett & Bros., Greensburg .... 8 00
  Second, J. L. Thompson & Son, Arcana .............................. 4 00
Buck, under 1 year, J. L. Thompson & Son, Arcana .................... 6 00
  Second Anna Newton, Pontiac, Mich ................................. 3 00
Ewe, 2 years old and over, Uriah Privett & Bros., Greensburg $10 00
   Second, J. L. Thompson & Son, Arcana 5 00
Ewe, one year old and under 2, J. L. Thompson & Son, Arcana 6 00
   Second, Uriah Privett & Bros., Greensburg 3 00
Ewe, under 1 year, J. L. Thompson & Son, Arcana 5 00
   Second, Anna Newton, Pontiac, Mich 3 00
Five lambs, J. L. Thompson & Son, Arcana 8 00
   Second, Anna Newton, Pontiac, Mich 4 00

Committee—Jacob M. Harshbarger, J. R. Tomlinson, J. C. Phelps.

CLASS XXII—Sweepstakes on Sheep—Fine Wool.

Buck, any age, Cook & Morse, Raymonds, Ohio $20 00
Ewe, any age, Uriah Privett & Bros., Greensburg 20 00
Flock, consisting of 1 buck, any age; 2 ewes, 2 years old and over; 2 ewes,
   1 year old and under 2, and 2 ewes under 1 year old, Cook & Morse, Raymonds, Ohio 30 00
   Second, Uriah Privett & Bros., Greensburg 15 00


CLASS XXIII—Sweepstakes on Sheep—Long Wool.

Buck, any age, J. B. Hearnless, Knightstown $20 00
Ewe, any age, Uriah Privett & Bros., Greensburg 20 00
Flock, consisting of 1 buck, any age; 2 ewes, 2 years old and over; 2 ewes,
   1 year old and under 2, and 2 ewes under 1 year old, Uriah Privett & Bros., Greensburg 30 00
   Second, Frank Wilson, Jackson, Mich 15 00

Committee—W. W. Thrasher, Groves Postoffice; Jacob M. Harshbarger, J. R. Tomlinson.

CLASS XXIV—Sweepstakes—Middle Wool.

Buck, any age, Uriah Privett & Bros., Greensburg $20 00
Ewe, any age, J. L. Thompson, Arcana 20 00
Flock, consisting of one buck, any age; two ewes, 2 years old and over;
   two ewes, 1 year old and under 2, and two ewes under one year old,
   J. L. Thompson & Son, Arcana 30 00
   Second, Uriah Privett & Bros., Greensburg 15 00

Committee—Jacob M. Harshbarger, Ladoga; Samuel R. Emminger, Danville; J. R. Tomlinson, Fairland.
PREMIUM AWARDS.

HOGS.

DICK JONES, Superintendent.

CLASS XXV—Berkshires.

Boar, 2 years old and over, Heck & Powell, Waldron .................. $12 00
Second, L. W. Hamilton, Sandusky .................................. 6 00
Boar, 1 year old and under 2, Jacob Kennedy & Co., Montclair .... 10 00
Second, McColley & Baker, Ladoga .................................. 5 00
Boar, under 12 and over 6 months old, D. W. Todd & Son, Urbana, Ohio 8 00
Second, I. N. Barker, Thorntown .................................. 4 00
Boar, under 6 months old, I. N. Barker, Thorntown .................. 5 00
Second, M. Hibblewaite, South Bend ............................... 3 00
Five shoats, under 6 months old, I. N. Barker, Thorntown ........... 10 00
Second, McCally & Baker, Toba ................................... 5 00
Sow, 2 years old and over, Heck & Powell, Waldron .................. 12 00
Second, D. W. Todd & Son, Urbana, Ohio .......................... 6 00
Sow, 1 year old and under 2, Heck & Powell, Waldron ............ 10 00
Second, J. B. Jones & Bro., Yorktown .............................. 5 00
Sow, under 12 and over 6 months old, M. Hibblewaite, South Bend .... 8 00
Second, D. W. Todd & Bro., Yorktown .............................. 4 00
Sow, under 6 months old, McCalley & Baker, Toba .................. 5 00
Second, I. N. Barker, Thorntown .................................. 3 00
Sow, and not less than five sucking pigs, A. S. Gilmore, Greensburg .... 10 00
Second, D. W. Todd & Son, Urbana, Ohio .......................... 5 00

Committee—Willard Place, Cass County; Benton Cade, Fountain County; Milton B. Waugh, Montgomery County.

CLASS XXVI—Poland Chinas.

Boar, 2 years old and over, J. W. Eller, Fisher's Station ........ $12 00
Second, Alexander & Thompson, Greensburg ....................... 6 00
Boar, 1 year old and under 2, Lampe Bros., Van Wert, Ohio ..... 10 00
Second, Floyd, Mugg & Co., Center .................................. 5 00
Boar, under 12 and over 6 months old, A. W. Ross, Muncie .. 8 00
Second, Sheppard Bros., Indianapolis .............................. 4 00
Boar, under 6 months old, Sheppard Bros., Indianapolis .......... 5 00
Second, Webb & Whiteside, Bridgeport ............................ 3 00
Five shoats, under 6 months old, Sheppard Bros., Indianapolis .. 10 00
Second, Webb & Whiteside, Bridgeport ............................ 5 00
Sow, 2 years old and over, T. M. Reveal, Clermont ............ 12 00
Second, Alexander & Thompson, Greensburg ....................... 6 00
BOARD OF AGRICULTURE.

Sow, 1 year old and under 2, T. M. Reveal, Clermont .......................... $10 00
  Second, L. W. Hamilton, Sandusky ......................................... 5 00
Sow, under 12 and over 6 months old, T. M. Reveal, Clermont .............. 8 00
  Second, Wolschner & Dorrab, Indianapolis .................................. 4 00
Sow, under 6 months old, Sheppard Bros., Indianapolis ...................... 5 00
  Second, Lloyd, Mugg & Co., Center ........................................ 3 00
Sow, and not less than 5 sucking pigs, T. M. Reveal, Clermont ............ 10 00
  Second, Richardson & Magrew, Westville, Ohio ........................... 5 00

Committee—John Pearce, Hebron; H. W. Lambert, Columbus; A. W. Smiley, Hartford.

CLASS XXVII—Chester Whites.

Boar, 2 years old and over, N. H. Lillman, Arcanum, Ohio .................. $12 00
  Second, C. W. Baker, Mansfield, Ohio ................................... 6 00
Boar, 1 year old and under 2, Mary Beal, Indianapolis ...................... 10 00
  Second, N. H. Lillman, Arcanum, Ohio .................................. 5 00
Boar, under 12 and over 6 months old, R. S. Russell, Zionsville .......... 8 00
  Second, C. W. Baker, Mansfield, Ohio ................................... 4 00
Boar, under 6 months old, R. S. Russell, Zionsville ....................... 5 00
  Second, R. S. Russell, Zionsville ....................................... 3 00
Five sows, under 6 months old, R. S. Russell, Zionsville ................. 10 00
  Second, N. H. Lillman, Arcanum, Ohio .................................. 5 00
Sow, 2 years old and over, C. W. Baker, Mansfield, Ohio ................... 12 00
  Second, N. H. Lillman, Arcanum, Ohio .................................. 6 00
Sow, 1 year old and under 2, N. H. Lillman, Arcanum, Ohio ................. 10 00
  Second, C. W. Baker, Mansfield, Ohio ................................... 5 00
Sow, under 12 and over 6 months old, N. H. Lillman, Arcanum, Ohio ........ 8 00
  Second, C. W. Baker, Mansfield, Ohio ................................... 4 00
Sow, under 6 months old, R. S. Russell, Zionsville ........................ 5 00
  Second, R. S. Russell, Zionsville ....................................... 3 00
Sow and not less than 5 sucking pigs, N. H. Lillman, Arcanum, Ohio ....... 10 00

Committee—A. P. Smiley, D. Finch, B. F. Baker.

CLASS XXVIII—Suffolk, Essex, Etc.

Boar, 2 years old and over, W. C. Norton, Aldenville, Pa .................. $12 00
  Second, Frank Wilson, Jackson, Mich ................................... 6 00
Boar, 1 year old and under 2, Frank Wilson, Jackson, Mich ................. 10 00
  Second, Frank Wilson, Jackson, Mich ................................... 5 00
Boar, under 12 and over 6 months old, A. S. Gilmore & Co., Greensburg .... 8 00
  Second, Frank Wilson, Jackson, Mich ................................... 4 00
Boar, under 6 months old, W. C. Norton, Aldenville, Pa .................... 5 00
  Second, W. C. Norton, Aldenville, Pa ................................... 3 00
PREMIUM AWARDS.

Five shoots, under 6 months old, W. C. Norton, Aldenville, Pa. $10.00
Second, Frank Wilson, Jackson, Mich. 5.00
Sow, 2 years old and over, W. C. Norton, Aldenville, Pa. 12.00
Second, Frank Wilson, Jackson, Mich. 6.00
Sow, 1 year old and under 2, W. C. Norton, Aldenville, Pa. 10.00
Second, A. C. Green & Co., Winchester. 5.00
Sow, under 12 and over 6 months old, Frank Wilson, Jackson, Mich. 8.00
Second, A. C. Green & Co., Winchester. 4.00
Sow, under 6 months old, W. C. Norton, Aldenville, Pa. 5.00
Second, W. C. Norton, Aldenville, Pa. 3.00
Sow and not less than 5 sucking pigs, Frank Wilson, Jackson, Mich. 10.00
Second, Frank Wilson, Jackson, Mich. 5.00

S. M. Shepard, Expert.

CLASS XXIX—Sweepstakes on hogs. Poland Chinas, Chester Whites, and other large breeds.

Boar, any age, Lampe Bros., Van Wert, Ohio. $20.00
Sow, any age, A. W. Ross, Muncie. 20.00
Herd, all owned by one exhibitor or firm, Lampe Bros., Van Wert, Ohio. 40.00
Second, Alexander & Thompson, Greensburg. 20.00

Ed. Klever, Expert.

CLASS XXX—Berkshires, Essex, Suffolk and other small breeds.

Boar, any age, W. C. Norton, Aldenville, Pa. $20.00
Sow, any age, A. S. Gilmore & Co., Greensburg. 20.00
Herd, all owned by one exhibitor or firm, D. W. Todd & Son, Urbana, Ohio 40.00
Second, Heck & Powell, Waldron. 20.00

POULTRY.

L. B. Custer, Superintendent.

CLASS XXXI.

Pair light Brahmap bird, W. K. Clore, Trafalger. $4.00
Second, D. T. Highley, Mier. 2.00
Pair light Brahmap chicks, W. K. Clore, Trafalger. 4.00
Second, I. N. Barker, Thorntown. 2.00

6—Bd. of Agr.
Board of Agriculture.

Pair dark Brahma fowls, Thompson & Dillon, Pittsboro .......................... $4 00
  Second, E. J. Koppenhofer, Shinrock, Ohio .................................. 2 00

Pair dark Brahma chicks, C. B. Cage, Shelbyville ................................. 4 00
  Second, W. M. Hawell, Edinburg .................................................. 2 00

Pair buff Cochin fowls, C. H. Johnson, Rushville ................................ 4 00
  Second, C. H. Johnson, Rushville ................................................ 2 00

Pair light Brahma chicks, C. H. Johnson, Rushville ................................ 4 00
  Second, C. H. Johnson, Rushville ................................................ 2 00

Pair Partridge Cochin fowls, W. M. Hawell, Edinburg .............................. 4 00
  Second, Hall Bros., Shelbyville .................................................... 2 00

Pair Partridge Cochin chicks, I. N. Barker, Thorntown .......................... 4 00
  Second, Hall Bros., Shelbyville .................................................... 2 00

Pair white Cochin fowls, C. B. Cage, Shelbyville ................................ 4 00
  Second, Frank B. Smith, Danville, Ill .......................................... 2 00

Pair white Cochin chicks, Frank B. Smith, Danville, Ill ........................ 4 00
  Second, Frank B. Smith, Danville, Ill .......................................... 2 00

Pair black Cochin fowls, B. F. Hill, Indianapolis ................................ 4 00
  Second, Frank B. Smith, Danville, Ill .......................................... 2 00

Pair black Cochin chicks, B. F. Hill, Indianapolis ................................ 4 00
  Second, Frank B. Smith, Danville, Ill .......................................... 2 00

Pair black Java fowls, W. M. Hawell, Edinburg .................................... 4 00
  Second, S. E. Wurst, Elyria, Ohio .............................................. 2 00

Pair black Java chicks, S. E. Wurst, Elyria, Ohio ................................ 4 00

Pair Langshan fowls, B. S. Myers, Crawfordsville ................................ 4 00
  Second, B. S. Myers, Crawfordsville ............................................ 2 00

Pair Langshan chicks, B. S. Myers, Crawfordsville ................................ 3 00
  Second, B. S. Myers, Crawfordsville ............................................ 1 00

Pair Plymouth Rock fowls, Hall Bros., Shelbyville ................................ 4 00
  Second, S. E. Wurst, Elyria, Ohio .............................................. 2 00

Pair Plymouth Rock chicks, J. H. Cox, Columbus ................................ 4 00
  Second, D. F. Highley, Mier ..................................................... 2 00

Pair Wyandot fowls, F. M. Cory, Morristown ....................................... 4 00
  Second, B. S. Myers, Crawfordsville ............................................ 2 00

Pair Wyandot chicks, B. S. Myers, Crawfordsville ................................ 4 00
  Second, B. S. Myers, Crawfordsville ............................................ 2 00

Pair white Leghorn fowls, Wm. Tobin, Indianapolis ................................ 3 00
  Second, Wm. Tobin, Indianapolis ................................................ 1 00

Pair brown Leghorn fowls, Allen Bros., Bloomingdale ............................ 3 00
  Second, E. J. Koppenhofer, Shinrock, Ohio .................................... 1 00

Pair brown Leghorn chicks, Allen Bros., Bloomingdale ........................... 3 00
  Second, Jerry Carter, White Lick ............................................... 1 00

Pair black Leghorn fowls, S. E. Wurst, Elyria, Ohio ................................ 3 00
  Second, D. F. Highley, Mier ...................................................... 1 00

Pair black Leghorn chicks, Jas. Sparks, Shelbyville ............................. 3 00
  Second, S. E. Wurst, Elyria, Ohio ............................................ 1 00
<table>
<thead>
<tr>
<th>Prize Description</th>
<th>Award Winner</th>
<th>Award Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair W. F. black Spanish fowls, G. M. Wells, Bridgeport</td>
<td>$3.00</td>
<td></td>
</tr>
<tr>
<td>Second, G. M. Wells, Bridgeport</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair W. F. black Spanish chicks, G. M. Wells, Bridgeport</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, G. M. Wells, Bridgeport</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair W. C. black Polish fowls, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, I. N. Barker, Thornport</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair W. C. black Polish chicks, P. O. Updegraff &amp; Co., Irvington</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, J. Arnold, Zeigler</td>
<td>1.00</td>
<td></td>
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<tr>
<td>Pair W. C. White Polish fowls, E. J. Koppenhofer, Shinrock, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, S. E. Wurst, Elyria, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair golden Polish fowls or chicks, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
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<tr>
<td>Second, D. F. Highley, Mier</td>
<td>1.00</td>
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<tr>
<td>Pair silver Polish fowls or chicks, D. F. Highley, Mier</td>
<td>3.00</td>
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</tr>
<tr>
<td>Second, S. E. Wurst, Elyria, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair Houdan fowls, Chas. Styer, Kokomo</td>
<td>3.00</td>
<td></td>
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<tr>
<td>Second, Mrs. J. B. Howe, Kentland</td>
<td>1.00</td>
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</tr>
<tr>
<td>Pair Houdan chicks, Chas. Styer, Kokomo</td>
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<tr>
<td>Second, Chas. Styer, Kokomo</td>
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<td></td>
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<tr>
<td>Pair golden Hamburg fowls, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
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<tr>
<td>Second, E. J. Koppenhofer, Shinrock, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair golden Hamburg chicks, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Pair silver Hamburg fowls, Mrs. J. B. Howe, Kentland</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, E. J. Koppenhofer, Shinrock, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair silver Hamburg chicks, W. H. Jones, Liberty</td>
<td>3.00</td>
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<tr>
<td>Second, S. E. Wurst, Elyria, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair black Hamburg fowls, G. A. Stanton, Greenwood</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, S. E. Wurst, Elyria, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair black Hamburg chicks, G. A. Stanton, Greenwood</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, P. O. Updegraff &amp; Co., Irvington</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair white Dorking fowls, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
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<tr>
<td>Second, Fletcher Hines, Malott Park</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair white Dorking chicks, Fletcher Hines, Malott Park</td>
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</tr>
<tr>
<td>Second, Fletcher Hines, Malott Park</td>
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</tr>
<tr>
<td>Pair colored Dorking fowls, E. A. Stanton, Greenwood</td>
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<tr>
<td>Second, E. A. Stanton, Greenwood</td>
<td>1.00</td>
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<tr>
<td>Pair colored Dorking chicks, E. A. Stanton, Greenwood</td>
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<tr>
<td>Second, E. A. Stanton, Greenwood</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair B. B. red game fowls, Allen Bros., Bloomingdale</td>
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<td></td>
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<tr>
<td>Second, Jerry Stevens, Shelbyville</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair B. B. red game chicks, Allen Bros., Bloomingdale</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, S. E. Wurst, Elyria, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair yellow duck-wing game fowls, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, Griffin &amp; Lewis, Indianapolis</td>
<td>1.00</td>
<td></td>
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<tr>
<td>Pair yellow duck-wing game chicks, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Second, E. J. Koppenhofer, Shinrock, Ohio</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Pair silver duck-wing game fowls, S. E. Wurst, Elyria, Ohio</td>
<td>3.00</td>
<td></td>
</tr>
</tbody>
</table>
Board of Agriculture.

Pair silver duck-wing game chicks, S. E. Wurst, Elyria, Ohio .................. $3 00
Pair B. B. red game bantam fowls, D. F. Highley, Mier .......................... 3 00
  Second, G. A. Stanton, Greenwood .................................. 1 00
Pair B. B. red game bantam chicks, S. E. Wurst, Elyria, Ohio ............. 3 00
Pair yellow duck-wing game bantam fowls, S. E. Wurst, Elyria, Ohio ..... 3 00
  Second, E. G. Koppenhofer, Shinrock, Ohio .......................... 1 00
Pair yellow duck-wing game bantam chicks, E. J. Koppenhofer, Shinrock, O. 3 00
  Second, S. E. Wurst, Elyria, Ohio ............................. 1 00
Pair golden Seabright bantam fowls, I. F. Barker, Thorntown ............... 3 00
  Second, S. E. Wurst, Elyria, Ohio ................................ 1 00
Pair golden Seabright bantam chicks, Mrs. J. B. Howe, Kentland ............. 3 00
  Second, Jerry Carter, White Lick .................................. 1 00
Pair silver Seabright bantam fowls, S. E. Wurst, Elyria, Ohio ............ 3 00
Pair rose-comb bantam fowls or chicks, S. E. Wurst, Elyria, Ohio .......... 3 00
  Second, S. E. Wurst, Elyria, Ohio ................................ 1 00
Pair bronze turkeys, old birds, T. M. Reveal, Clermont ....................... 4 00
  Second, Bals & Laut, Indianapolis .................................. 2 00
Pair bronze turkeys, hatch of 1886, A. G. Stanton, Greenwood ............... 4 00
  Second, Bals & Laut, Indianapolis .................................. 2 00
Pair white Holland turkeys, old birds, E. K. Morris, Indianapolis ......... 4 00
  Second, E. J. Koppenhofer, Shinrock, Ohio .......................... 2 00
Pair white Holland turkeys, hatch of 1886, Allen Bros., Bloomingdale ...... 4 00
  Second, G. M. Wells, Bridgeport ................................... 2 00
Pair Embden geese, S. E. Wurst, Elyria, Ohio ................................ 4 00
  Second, R. S. Russell, Zionsville .................................. 2 00
Pair Toulouse geese, S. E. Wurst, Elyria, Ohio ................................ 4 00
  Second, Bals & Laut, Indianapolis .................................. 2 00
Pair Chinese geese, S. E. Wurst, Elyria, Ohio ................................ 4 00
  Second, A. B. Thomas, Willow Branch ................................ 2 00
Pair wild geese, S. E. Wurst, Elyria, Ohio .................................. 3 00
  Second, J. H. Buskel, Mapleton ..................................... 1 00
Pair Pekin ducks, D. F. Highley, Mier .................................... 3 00
  Second, D. F. Highley, Mier .......................................... 1 00
Pair Rouen ducks, Bals & Laut, Indianapolis .................................. 3 00
  Second, Bals & Laut, Indianapolis .................................. 1 00
Pair Aylesbury ducks, S. E. Wurst, Elyria, Ohio ................................ 3 00
  Second, S. E. Wurst, Elyria, Ohio .................................. 1 00
Pair Cayuga ducks, S. E. Wurst, Elyria, Ohio .................................. 3 00
Heaviest live turkey, T. M. Reveal, Clermont ................................ 4 00
Heaviest cock or cockerel, I. N. Barker, Thorntown .......................... 3 00
Heaviest hen or pullet, D. F. Highly, Mier ................................ 2 00
Brood of chicks under one week old, Mrs. Mary B. Danley, Indianapolis .... 3 00
Collection pigeons, S. E. Wurst, Elyria, Ohio ............................... 5 00
  Second, A. E. Dorsey, Indianapolis ................................. 3 00

D. H. Jenkins, expert.
PREMIUM AWARDS.

DOG AND PONY DEPARTMENT.

J. M. Freeman, Superintendent.

St. Bernard dog or bitch, owned by R. L. McQuat, city .................. $5 00
Collie dog or bitch, owned by J. E. Doherty, Lotus ..................... 5 00
    Second, J. E. Doherty, Lotus .................................. 3 00
English mastiff dog or bitch, owned by Geo. E. Townley, city .......... 3 00
    Second, Geo. Jackson, Beech Grove .................. 2 00
Skye terrier dog or bitch, owned by Peter Morbach, city ............... 3 00
English setter dog, owned by P. T. Madison, city ..................... 5 00
    Second, S. H. Socwell, city .................................. 3 00
English setter bitch, owned by Joseph Becker, city .................... 3 00
    Second, Harmon Bradshaw, city .................................. 2 00
English setter puppy, owned by Joe L. Gaspar, city .................... 3 00
    Second, A. H. Bradshaw, city .................................. 2 00
Bull dog or bitch, owned by Mary Beal, city ......................... 2 00
Gordon setter puppy, dog or bitch, owned by P. T. Madison, city ... 3 00
Irish setter dog, owned by W. A. Comstock, city ...................... 5 00
    Second, D. D. Calkins, city .................................. 3 00
Irish setter, puppy, dog or bitch owned by H. A. Comstock, city .... 3 00
    Second, Dr. J. McDowell, Bruceville : ....................... 2 00
Pointer dog owned by Clarence Foster, city .......................... 5 00
    Second, A. R. Edmonds, city .................................. 3 00
Pointer bitch owned by W. R. Williams, city .......................... 3 00
    Second, A. R. Edmonds, city .................................. 2 00
Bitches and puppies owned by C. J. Trenmper, city ....................... 3 00
Grey Hound and Deer Hound dog or bitch owned by Bracken Lawrence, city 3 00
Dog or bitch of pure breed not provided for in the above classes owned by
    H. G. Gates, city .................................. 5 00
    Second, Silas Eaglen, city .................................. 3 00

Shetland Ponies.

Stallion 4 years old and over, F. and L. Hasselman, city ............ $10 00
Mare, 3 years old and over, Chas. P. Greenan, city .................. 5 00
    Second, F. and L. Hasselman, city .......................... 2 00
Mare, 4 years old, colt by side, F. and L. Hasselman, city .......... 6 00
Herd of three, F. and L. Hasselman, city ................................ 10 00
### Class XXXIII — Vegetables

<table>
<thead>
<tr>
<th>Item</th>
<th>Prize</th>
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<tbody>
<tr>
<td>Three cauliflowers, Ellwanger &amp; Sons, Haughville</td>
<td>$2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Six vegetable eggs, Whipples Bros., Marion, Ohio.</td>
<td>2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Six cucumbers, Frank Williamson, Zionsville</td>
<td>2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Peck white beans, John Marvel, Royalton</td>
<td>2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Two quarts lima beans, John Marvel, Royalton</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Half gallon garden peas, dry, W. H. Hartman, city</td>
<td>2.00</td>
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<tr>
<td>Second, John Marvel, Royalton</td>
<td>1.00</td>
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<tr>
<td>Half gallon field peas, dry, Ellwanger &amp; Sons, Haughville</td>
<td>2.00</td>
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<tr>
<td>Second, John Marvel, Royalton</td>
<td>1.00</td>
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<tr>
<td>Half peck peppers for pickling, H. A. Smith, Tilden</td>
<td>2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Peck tomatoes, John Marvel, Royalton</td>
<td>2.00</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Collection tomatoes, John Marvel, Royalton</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Half dozen ears green sweet corn, W. O. Rucker, Ben Davis</td>
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<tr>
<td>Second, John Marvel, Royalton</td>
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<tr>
<td>Half peck dry sweet corn, Whipples Bros., Marion, Ohio.</td>
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<tr>
<td>Second, Charles Montgomery, Indianapolis</td>
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<tr>
<td>Three squashes, any kind, Whipples Bros., Marion, Ohio</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Three pumpkins, Chas. Montgomery, Indianapolis</td>
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<tr>
<td>Second, John Marvel, Royalton</td>
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<tr>
<td>Three Drumhead cabbages, Whipples Bros., Marion, Ohio</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
<td>1.00</td>
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<tr>
<td>Three Flat Dutch cabbages, John Marvel, Royalton</td>
<td>2.00</td>
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<tr>
<td>Second, Whipples Bros., Marion, Ohio</td>
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<tr>
<td>Three heads cabbages, any other kind, John Marvel, Royalton</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Dozen stalks celery, Whipples Bros., Marion, Ohio</td>
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<tr>
<td>Second, Ellwanger &amp; Sons, Haughville</td>
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<tr>
<td>Collection vegetables by one amateur exhibitor, Whipples Bros., Marion, Ohio.</td>
<td>10.00</td>
</tr>
<tr>
<td>Second, John Marvel, Royalton</td>
<td>5.00</td>
</tr>
</tbody>
</table>

*Committee* — C. W. Archey, J. C. Peed, Wm. Windall.
PREMIUM AWARDS.

CLASS XXXIV—Root Crops.

Half bushel turnips, W. A. Ennis, Clermont $2 00
Second, Whipple Bros., Marion, Ohio 1 00
Dozen Parsnips, James W. Meeks, Muncie 2 00
Second, W. A. Ennis, Clermont 1 00
Dozen radishes, John Marvel, Royalton 2 00
Second, J. N. Shepherd, Terre Haute 1 00
Dozen carrots, Whipple Bros., Marion, Ohio 2 00
Second, John Marvel, Royalton 1 00
Dozen roots salsify, John Marvel, Royalton 2 00
Second, H. A. Smith, Tilden 1 00
Dozen horse-radish, John Marvel, Royalton 2 00
Second, Ellwanger & Sons, Haughville 1 00
Half-dozen long red beets, Frank Williamson, Zionsville 2 00
Second, John Marvel, Royalton 1 00
Half-dozen turnip beets, H. A. Smith, Tilden 2 00
Second, Whipple Bros., Marion, Ohio 1 00
Half-dozen sugar beets, Sylvester Johnson, Irvington 2 00
Second, John Marvel, Royalton 1 00
Half-dozen mangel wurzel beets, F. W. Noble, Indianapolis 2 00
Second, Sylvester Johnson, Irvington 1 00
Half peck red onions, Whipple Bros., Marion, Ohio 2 00
Second, H. A. Smith, Tilden 1 00
Half peck yellow onions, Whipple Bros., Marion, Ohio 2 00
Second, Whipple Bros., Marion, Ohio 1 00
Half peck white onions, Whipple Bros., Marion, Ohio 2 00
Second, Whipple Bros., Marion, Ohio 1 00
Dozen turnip radishes, John Marvel, Royalton 2 00
Second, Ellwanger & Sons, Haughville 1 00
Dozen long radishes, J. N. Shepherd, Terre Haute 2 00
Second, John Marvel, Royalton 1 00
Display onions in variety, Whipple Bros., Marion, Ohio 3 00
Second, John Marvel, Royalton 1 00

Committee—C. W. Archey, J. C. Peed, Wm. Windall.

CLASS XXXV—Potatoes.

Peck White Star, Chas. Montgomery, Indianapolis $2 00
Second, Ellwanger & Sons, Haughville 1 00
Peck Dunmon’s Seedling, Whipple, Marion, Ohio 2 00
Second, H. A. Smith, Tilden 1 00
Peck Early Rose, Whipple Bros., Marion, Ohio 2 00
Second, H. A. Smith, Tilden 1 00
Peck Snowflake, Whipple Bros., Marion, Ohio 2 00
Second, H. A. Smith, Tilden 1 00
BOARD OF AGRICULTURE.

Peck Early Ohio, Whipps Bros., Marion, Ohio ........................ $2 00
  Second, H. A. Smith, Tilden ............................ 1 00
Peck Shaker Russets, A. T. Murphy, Logansport ................. 2 00
  Second, Whipps Bros., Marion, Ohio .................... 1 00
Peck Early Vermont, Whipps Bros., Marion, Ohio ................ 2 00
  Second, W. H. Hartman, Indianapolis .................. 1 00
Half bushel sweet potatoes, Thos. Wilson, Indianapolis ....... 2 00
  Second, Simon Klingensmith, New Augusta ............... 1 00
Peck early potatoes, any other kind, Whipps Bros., Marion, Ohio 2 00
  Second, Ellwanger & Sons, Haughville .................. 1 00
Peck late potatoes, any other kind, J. A. Evarts & Co., Indianapolis 2 00
  Second, W. H. Hartman, Indianapolis ................ 1 00
Peck Beauty of Hebron, Whipps Bros., Marion, Ohio ............ 2 00
  Second, W. H. Hartman, Indianapolis ................ 1 00
Peck Blue Victor, W. H. Hartman, Indianapolis ................. 2 00
  Second, John Marvel, Royalton ........................ 1 00
Peck Burbank Seedling, Whipps Bros., Marion, Ohio .......... 2 00
  Second, W. A. Ennis, Clermont ........................ 1 00
Collection Irish potatoes, not less than 5 varieties, Whipps Bros., Marion, Ohio ..................... 5 00
  Second, H. H. Smith, Tilden .......................... 2 00

Committee—C. W. Archey, J. C. Peed, William Windall.

CLASS XXXVI—Grain and Seeds.

Half bushel early Dent corn, in ear, W. H. Hartman, Indianapolis ... $5 00
  Second, W. A. Ennis, Clermont ........................ 2 00
Half bushel yellow corn, in ear, Z. White, Lawrence ............. 5 00
  Second, W. H. Hartman, Indianapolis ................ 2 00
Half bushel white corn, in ear, S. W. Dungan, Franklin .......... 5 00
  Second, G. A. Stanton, Greenwood ....................... 2 00
Half bushel corn, any color, Z. White, Lawrence ................ 5 00
  Second, S. Whitesides, Franklin ....................... 2 00
Half bushel hominy corn, Whipps Bros., Marion, Ohio ............ 2 00
  Second, John Marvel, Royalton ......................... 1 00
Half bushel pop corn, James Riley, Thorntown .................. 2 00
  Second, R. A. Thompson, Pittsboro ..................... 1 00
Display and greatest variety corn, all kinds, not less than ½ gallon of each variety, John Marvel, Royalton .................. 10 00
  Second, Whipps Bros., Marion, Ohio .................. 5 00
Display and greatest variety wheat, all kinds, not less than ½ gallon of each variety, W. A. Ennis, Clermont ................. 10 00
  Second, John Marvel, Royalton ......................... 5 00
Half bushel white wheat, James Riley, Thorntown .............. 5 00
  Second, Whipps Bros., Marion, Ohio .................. 2 00
PREMIUM AWARDS.

Half bushel red wheat, James Riley, Thorntown ........................................... $5.00
  Second, Whipp Bros., Marion, Ohio .......................................................... 2.00
Half bushel spring wheat, Whipp Bros., Marion, Ohio ................................... 5.00
  Second, Sanford Ennis, Clermont ........................................................... 2.00
Half bushel rye, Whipp Bros., Marion, Ohio ................................................. 2.00
  Second, John Marvel, Royalton ............................................................... 1.00
Half bushel oat, Whipp Bros., Marion, Ohio ................................................ 2.00
  Second, W. H. Hartman, Indianapolis ..................................................... 1.00
Half bushel buckwheat, Whipp Bros., Marion, Ohio ...................................... 2.00
  Second, Sugar Valley Seed Co., Thorntown .............................................. 1.00
Half bushel barley, Whipp Bros., Marion, Ohio ........................................... 2.00
  Second, Oliver Ennis, Clermont ............................................................. 1.00
Half bushel flaxseed, W. H. Hartman, Indianapolis ...................................... 2.00
  Second, W. A. Ennis, Clermont ............................................................... 1.00
Half bushel millet seed, W. H. Hartman, Indianapolis .................................. 2.00
  Second, W. A. Ennis, Clermont ............................................................... 1.00
Half bushel timothy seed, Whipp Bros., Marion, Ohio .................................. 2.00
  Second, W. H. Hartman, Indianapolis ..................................................... 1.00
Half bushel orchard grass seed, Sugar Valley Seed Co., Thorntown ................. 2.00
  Second, Whipp Bros., Marion, Ohio ....................................................... 1.00
Half bushel Hungarian grass seed, Whipp Bros., Marion, Ohio ....................... 2.00
  Second, John Marvel, Royalton ............................................................... 1.00
Half bushel Kentucky blue grass seed, Whipp Bros, Marion, Ohio ................... 2.00
  Second, John Marvel, Royalton, Ind ....................................................... 1.00
Half bushel English blue grass seed, Sugar Valley Seed Co., Thorntown ........... 2.00
  Second, W. A. Ennis, Clermont ............................................................... 1.00
Half bushel red-top grass seed, Whipp Bros., Marion, Ohio ........................ 2.00
  Second, W. A. Ennis, Clermont ............................................................... 1.00
Half bushel red clover seed, John Marvel, Royalton ................................... 2.00
  Second, Frank Wilson, Jackson, Mich ..................................................... 1.00
Half bushel English clover seed, John Marvel, Royalton ................................ 2.00
  Second, Whipp Bros, Marion, Ohio .......................................................... 1.00
Sample, 10 pounds broom corn, A. S. Huls, Zionsville ................................ 2.00
  Second, John Marvel, Royalton ............................................................... 1.00
Collection grains and vegetables by any county or local society, Whipp Bros., Marion, Ohio ........................................................... 20.00
  Second, Hendricks County Agricultural Society ........................................ 10.00

Committee—C. W. Archey, J. C. Peed, A. F. Murphy.

CLASS XXXVII—Butter—Cheese.

Five packages creamery butter, not less than 25 lbs. each, Geo. B. Walton, Indianapolis ........................................................... $8.00
  Second, C. M. Coats & Co., Indianapolis ............................................... 4.00
Three packages dairy butter, not less than 15 lbs. each, Arthur Jordan, Indianapolis ........................................................... 5.00
  Second, C. M. Coats & Co., Indianapolis ............................................... 3.00
BOARD OF AGRICULTURE.

Five factory cheese, not less than 30 lbs. each, C. M. Coats & Co., Indianapolis. .................................................. $8 00
Second, Arthur Jordan, Indianapolis ........................................ 4 00

Three dairy cheese, not less than 20 lbs. each, C. M. Coats & Co., Indianapolis. .................................................. 5 00
Second, Arthur Jordan, Indianapolis ........................................ 3 00

CLASS XXXVIII—Honey.

Queen bee, A. Cox, White Lick .................................................. $3 00
Second, S. H. Lane, Indianapolis .............................................. 2 00

Comb honey, not less than 20 lbs., quality and manner of putting up for market to be considered, Doherty & Wiley, Indianapolis .................................................. 5 00
Second, S. H. Lane, Indianapolis .............................................. 3 00

Extracted honey, not less than 20 lbs., quality and manner of putting up for market considered, Doherty & Wiley, Indianapolis .................................................. 5 00
Second, A. Cox, White Lick ..................................................... 3 00

Display of honey, the produce of one apiary of the present year, A. Cox,
White Lick ............................................................................. 15 00
Second, S. H. Lane, Indianapolis .............................................. 10 00

Display of wax, not less than 10 lbs., S. H. Lane, Indianapolis .................................................. 2 00
Second, A. Cox, White Lick ..................................................... 1 00

Display of apiarian supplies, Doherty & Wiley, Indianapolis .................................................. 4 00
Comb foundation for use in brood nest, A. Cox, White Lick .................................................. 2 00
Second, Doherty & Wiley, Indianapolis .................................................. 1 00

Comb foundation for surplus honey, Doherty & Wiley, Indianapolis .................................................. 2 00
Second, A. Cox, White Lick ..................................................... 1 00

Honey extractor, Doherty & Wiley, Indianapolis .................................................. 2 00
Wax extractor, Doherty & Wiley, Indianapolis .................................................. 2 00

Honey Vinegar, not less than one gallon, S. H. Lane, Indianapolis .................................................. 2 00
Second, A. Cox, White Lick ..................................................... 1 00

Section box for surplus honey, A. Cox, White Lick .................................................. 2 00
Second, Doherty & Wiley, Indianapolis .................................................. 1 00

Display of wholesale package and crates of honey, Doherty & Wiley, Indianapolis .................................................. 2 00

Display of retail packages of extracted honey, Doherty & Wiley, Indianapolis .................................................. 2 00
Second, A. Cox, White Lick ..................................................... 1 00

Honey cake or cakes, S. H. Lane, Indianapolis .................................................. 2 00
Second, A. Cox, White Lick ..................................................... 1 00

Collection of honey plants properly labeled in order, with date of bloom,
O. Knowlton, New Brunswick .................................................. 6 00
Second, S. H. Lane, Indianapolis .................................................. 3 00

Committee—C. W. Archey, J. C. Peed and A. F. Murphy.
PREMIUM AWARDS.

HORTICULTURAL DEPARTMENT.

R. M. LOCKHART, Superintendent.

CLASS XL—Amateur List.

Twenty varieties of apples, R. M. & W. C. Lockhart, Waterloo       $12 00
Twelve varieties of apples, John M. Boots, Spencerville           8 00
Six varieties of apples, Trotter & Windall, New Amsterdam         5 00
Plate Maiden Blush, Albert Terryberry, Grimsby, Canada             1 00
Plate Smith's Cider, Trotter & Windall, New Amsterdam              1 00
Plate Ben Davis, D. G. Wilkinson, New Castle                      1 00
Plate Rome Beauty, Mary J. Flick, Lawrence                         1 00
Plate Wine Sap, Trotter & Windall, New Amsterdam                   1 00
Plate Rambo, Mary J. Flick, Lawrence                               1 00
Plate Yellow Bellflower, R. M. & W. C. Lockhart, Waterloo          1 00
Plate Fallawater-Tulpehockin, W. H. Adams, Onward                  1 00
Plate Fall Pippin, D. L. Garver, Hart, Mich                        1 00
Plate Clayton, H. A. Smith, Tilden                                1 00
Plate White Pippin, W. H. Adams, Onward                            1 00
Plate Baldwin, Albert Terryberry, Grimsby, Canada                  1 00
Plate Northern Spy, Mary J. Flick, Lawrence                        1 00
Plate Vandeaver Pippin, H. A. Smith, Tilden                        1 00
Plate King of Tompkins County, G. Schwitzer, Waterloo              1 00
Ten varieties of pears, Albert Terryberry, Grimsby, Canada         8 00
Five varieties autumn pears, Albert Terryberry, Grimsby, Canada     4 00
Show of quinces, not less than 12 specimens, Albert Terryberry, Grimsby, Canada       3 00
Five varieties grapes, Albert Terryberry, Grimsby, Canada           5 00
Three varieties grapes, Albert Terryberry, Grimsby, Canada          3 00
Five clusters grapes, any kind, Albert Terryberry, Grimsby, Canada  2 00
Display of fruits, all kinds, Albert Terryberry, Grimsby, Canada     20 00
Display of fruit by any local or county society, Northeastern Agricultural Association, by R. M. Lockhart, President  20 00
Second, Monroe County Agricultural Society, by Samuel Dinhamore,
President .                                                        15 00
Three watermelons, Peter Harscoek, Malott Park                     5 00
Second, F. Stansbury, Waldron, Ill                                 2 00
Three nutmeg melons, F. W. Noble, Indianapolis                    3 00
Second, W. H. Hartman, Indianapolis                                2 00
Largest striped Gypsy melon, F. Stansbury, Waldron, Ill            2 00
Largest Icing melon, W. O. Rucker, Ben Davis                      2 00
Collection melons, all kinds, W. O. Rucker, Ben Davis              6 00

Committee—J. Troop, D. F. Horton, C. M. Hobbs,
### XLI—Professional List.

<table>
<thead>
<tr>
<th>Description</th>
<th>Buyer</th>
<th>Location</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twenty varieties of apples</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>$12.00</td>
</tr>
<tr>
<td>Twelve varieties of apples</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>8.00</td>
</tr>
<tr>
<td>Six varieties of apples</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>5.00</td>
</tr>
<tr>
<td>Ten varieties of pears</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>8.00</td>
</tr>
<tr>
<td>Four varieties of autumn pears</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>5.00</td>
</tr>
<tr>
<td>Five varieties of grapes</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>5.00</td>
</tr>
<tr>
<td>Three varieties of grapes</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>3.00</td>
</tr>
<tr>
<td>One variety grapes, ten clusters</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>2.00</td>
</tr>
<tr>
<td>Collection quinces, not less than 12 specimens</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>3.00</td>
</tr>
<tr>
<td>Display of fruits, all kinds</td>
<td>F. M. Benham</td>
<td>Grand Rapids, Mich</td>
<td>20.00</td>
</tr>
<tr>
<td>Collection of nursery stock, arranged for exhibition adjoining Floral Hall</td>
<td>Albertson &amp; Hobbs, Bridgeport</td>
<td></td>
<td>20.00</td>
</tr>
<tr>
<td>Second, James Sanders</td>
<td></td>
<td>Westfield</td>
<td>10.00</td>
</tr>
</tbody>
</table>

**Committee**—C. M. Hobbs, J. Troop, D. F. Horton.

### XLII—Professional List.

<table>
<thead>
<tr>
<th>Description</th>
<th>Buyer</th>
<th>Location</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>General collection of plants</td>
<td>Berteman Bros., city</td>
<td></td>
<td>$16.00</td>
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<tr>
<td>Second, Chas. Reiman, city</td>
<td></td>
<td></td>
<td>8.00</td>
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<tr>
<td>Collection foliage plants</td>
<td>Henry Hilker</td>
<td>City</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Berteman Bros., city</td>
<td></td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>Collection lycopods and ferns</td>
<td>Henry Hilker</td>
<td>City</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Chas. Reiman, city</td>
<td></td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>Display and variety of climbers</td>
<td>Berteman Bros., city</td>
<td></td>
<td>4.00</td>
</tr>
<tr>
<td>Second, Chas. Reiman, city</td>
<td></td>
<td></td>
<td>2.00</td>
</tr>
<tr>
<td>Collection begonias, Henry Hilker</td>
<td>City</td>
<td></td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Berteman Bros., city</td>
<td></td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>Collection cacti, aloe, agaveas</td>
<td>Chas. Reiman</td>
<td>City</td>
<td>6.00</td>
</tr>
<tr>
<td>Second, Berteman Bros., city</td>
<td></td>
<td></td>
<td>3.00</td>
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<tr>
<td>Collection geraniums, Berteman Bros., city</td>
<td>City</td>
<td></td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Chas. Reiman, city</td>
<td></td>
<td></td>
<td>8.00</td>
</tr>
<tr>
<td>Three rustic stands, filled</td>
<td>Berteman Bros., city</td>
<td></td>
<td>5.00</td>
</tr>
<tr>
<td>Three hanging baskets, filled</td>
<td>Chas. Reiman</td>
<td>City</td>
<td>4.00</td>
</tr>
<tr>
<td>Second, Henry Hilker, city</td>
<td></td>
<td></td>
<td>2.00</td>
</tr>
<tr>
<td>Collection palms, Henry Hilker</td>
<td>City</td>
<td></td>
<td>8.00</td>
</tr>
<tr>
<td>Second, Berteman Bros., city</td>
<td></td>
<td></td>
<td>4.00</td>
</tr>
<tr>
<td>Collection of alocacias and caladiums, Henry Hilker</td>
<td>City</td>
<td></td>
<td>8.00</td>
</tr>
<tr>
<td>Second, Charles Reiman, city</td>
<td></td>
<td></td>
<td>4.00</td>
</tr>
<tr>
<td>Collection of cannaas, Berteman Bros., city</td>
<td>City</td>
<td></td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Henry Hilker, city</td>
<td></td>
<td></td>
<td>3.00</td>
</tr>
</tbody>
</table>
PREMIUM AWARDS.

Arranged Wardian case, Charles Reiman, city .......................... $4 00
Second, B. A. Fohl, city ........................................... 2 00
Floral display by any one exhibitor or firm, Berteman Bros., city. 150 00
Second, Charles Reiman, city ....................................... 100 00
Collection of loose cut flowers, Charles Reiman, city ............... 8 00
Second, Berteman Bros ............................................. 4 00
Display and arrangement cut roses, Henry Hilker, city .............. 4 00
Second, Charles Reiman ............................................. 2 00
Collection of basket designs, not less than five pieces, Henry Hilker, city 16 00
Second, Berteman Bros ............................................. 8 00
Collection bouquet, not less than five, Berteman Bros., city ........ 8 00
Second, Charles Reiman, city ....................................... 4 00
Newest design in cut flowers, Charles Reiman, city .................. 20 00
Second, Berteman Bros., city ...................................... 12 00

Committee—Mrs. E. S. Walker, Mrs. C. B. Behymer, Mrs. J. R. Wood.

CLASS XLIII—Amateur List.

Collection of plants, Mrs. Mary B. Danley, Indianapolis .............. $10 00
Collection begonias, Mrs. Mary B. Danley, Indianapolis .............. 6 00
Collection cacti, Mrs. J. J. Powell, Irvington ........................ 6 00
Second, Mrs. Mary B. Danley, Indianapolis .......................... 3 00
Collection asters, Mary B. Danley, Indianapolis ...................... 4 00
Collection of canna, Mary B. Danley, Indianapolis ................... 4 00
Collection of climbing or trailing plants, Mary B. Danley, Indianapolis 4 00
Hanging basket, Mary B. Danley, Indianapolis ........................ 2 00
Collection cut flowers, Mary J. Flick, Lawrence ...................... 8 00
Second, Mary B. Danley, Indianapolis ................................ 4 00
Geraniums, Miss L. J. Hiatt, Crawfordsville .......................... 4 00
Second, Mary B. Danley, Indianapolis ............................... 2 00
Roses, Mary B. Danley, Indianapolis .................................. 4 00
Verbenas, Mrs. Frank Williamson, Zionsville .......................... 4 00
Second, Mary J. Flick, Lawrence .................................... 2 00
Dahlias, Mrs. E. J. Crisler, Newport .................................. 4 00
Second, Miss L. J. Hiatt, Crawfordsville ............................. 2 00

Committee—Mrs. J. R. Wood, Mrs. E. S. Walker, Mrs. C. B. Behymer.
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General collection of fossils, S. S. Gorby, Kyle</td>
<td>$12.00</td>
</tr>
<tr>
<td>Second, G. K. Green, New Albany</td>
<td>8.00</td>
</tr>
<tr>
<td>Third, F. M. Noe, city</td>
<td>3.00</td>
</tr>
<tr>
<td>General collection of minerals, F. M. Noe, city</td>
<td>10.00</td>
</tr>
<tr>
<td>Second, G. K. Green, New Albany</td>
<td>4.00</td>
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<tr>
<td>Third, Will G. Beach, city</td>
<td>2.00</td>
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<tr>
<td>General collection of shells, N. A. Green, New Albany</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Will G. Beach, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Third, F. M. Noe, city</td>
<td>1.00</td>
</tr>
<tr>
<td>Collection of Mound Builders' (Stone age) implements, F. M. Noe, city</td>
<td>10.00</td>
</tr>
<tr>
<td>Second, G. K. Green, New Albany</td>
<td>5.00</td>
</tr>
<tr>
<td>Third, Will G. Beach, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Collection of stuffed and mounted birds, animals and reptiles, illustrating the natural history of the State, Fletcher M. Noe, city</td>
<td>10.00</td>
</tr>
<tr>
<td>Second, F. M. Noe, city</td>
<td>5.00</td>
</tr>
<tr>
<td>Third, G. G. T. Boswell, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Collection of skinned birds and animals, F. M. Noe, city</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Fletcher M. Noe, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Third, G. G. T. Boswell, city</td>
<td>1.00</td>
</tr>
<tr>
<td>Collection of diurnal Lepidoptera, Ashael Bloomer, city</td>
<td>4.00</td>
</tr>
<tr>
<td>Second, Arnold Reigger, city</td>
<td>2.00</td>
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<tr>
<td>Third, Frank Biedenmeister, city</td>
<td>1.00</td>
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<tr>
<td>Collection of nocturnal Lepidoptera, Frank Biedenmeister, city</td>
<td>4.00</td>
</tr>
<tr>
<td>Second, B. R. Shover, city</td>
<td>2.00</td>
</tr>
<tr>
<td>Third, Will G. Beach, city</td>
<td>1.00</td>
</tr>
<tr>
<td>Collection of insects, Frank Biedenmeister, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Collection of botanical specimens, Miss Ora Wilkins, City</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, B. R. Shover, city</td>
<td>3.00</td>
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<tr>
<td>Third, Frank Biedenmeister, city</td>
<td>2.00</td>
</tr>
<tr>
<td>Collection of American woods, not less than 25 varieties, Frank Biedenmeister, city</td>
<td>8.00</td>
</tr>
<tr>
<td>Second, Fred Biedenmeister, city</td>
<td>5.00</td>
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<tr>
<td>Third, A. B. Lefer, Friendswood</td>
<td>2.00</td>
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<tr>
<td>Collection of coins and medals, Fletcher M. Noe, city</td>
<td>5.00</td>
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<tr>
<td>Second, Will G. Beach, city</td>
<td>3.00</td>
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<tr>
<td>Third, Russell D. Robinson, city</td>
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<tr>
<td>Collection of curiosities, to consist of relics of the late war and of historical interest, Will G. Beach, city</td>
<td>5.00</td>
</tr>
<tr>
<td>Second, Fletcher M. Noe, city</td>
<td>3.00</td>
</tr>
<tr>
<td>Third, N. A. Green, New Albany</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Committee—T. J. McAvoy, Lillie J. Martin, Mrs. E. E. Smith.*
WOMAN'S DEPARTMENT.

MRS. A. M. NOE, Superintendent.

CLASS XLVI—Old Ladies' Department.

Silk quilt, Mrs. Jane Shull, Vevay ........................................... $2 00
Second, Mrs. Spalding, Anderson ............................................. 1 00
Crazy quilt, Mrs. Spalding, Anderson ....................................... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Worsted quilt, Mrs. M. B. Anderson, Greensburg ......................... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Calico quilt, Mrs. Jane Shull, Vevay ....................................... 2 00
Second, Mrs. E. A. Sims, Columbus ........................................ 1 00
Quilt, white, hand-sewing, Mrs. M. B. Anderson, Greensburg .............. 2 00
Bug, Mrs. Spalding, Anderson ............................................. 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Spread, knit, Mrs. Spalding, Anderson .................................... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Spread, crotchet, Mrs. M. B. Anderson, Greensburg ......................... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Pair silk mittens, hand-knit, Mrs. Spalding, Anderson ....................... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Pair silk stockings, hand knit, Mrs. M. B. Anderson, Greensburg ........... 2 00
Pair silk socks, hand-knit, Mrs. E. Hughes, Indianapolis .................. 2 00
Pair woolen stockings or socks, hand-knit, Mrs. M. B. Anderson, Greensburg . 1 00
Pair cotton stockings or socks, hand-knit, Mrs. Spalding, Anderson .......... 1 00
Hem-stitching, Mrs. A. R. Barley, Marion .................................. 2 00
Second, Mrs. Spalding, Anderson ............................................. 1 00
Drawn work, Mrs. M. B. Anderson, Greensburg ................................ 2 00
Second, Mrs. Spalding, Anderson ............................................. 1 00
Pair worsted mittens, fancy knitting, Mrs. Hannah Nickey, Edinburg ......... 1 00
Table cover, Mrs. M. B. Anderson, Greensburg ................................ 2 00
Second, Mrs. Mary Sanders, Shelbyville .................................... 1 00
Lace display, hand-made, Mrs. Jane Shull, Vevay .......................... 2 00
Second, Mrs. Spalding, Anderson ............................................. 1 00
Embroidery display, Mrs. Spalding, Anderson .............................. 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Embroidery, silk specimen, Mrs. M. B. Anderson, Greensburg ............... 2 00
Second, Mrs. Jane Shull, Vevay ............................................. 1 00
Embroidery, worsted specimen, Mrs. Spalding, Anderson ................ $2 00
Second, Mrs. M. B. Anderson, Greensburg .......................... 1 00
Collection of household relics, Mrs. Hannah Nicky, Edinburg ....... 3 00
Second, Mrs. E. M. Blair, Indianapolis ........................... 2 00
Painting display, Mrs. Hannah Nicky, Edinburg ..................... 2 00

Committee—Mrs. Louise C. Hawkins, Department Superintendent, Indianapolis; Miss Jennie Mourer, Marion, and Miss Jennie Mitchell, Princeton.

BOOK XLVII—Knitting and Crochet Work.

Infant's knit or crochet shirt, Mrs. A. D. McLeod, Indianapolis ....... $1 00
Infant's knit or crochet socks, Mrs. James Scott, Indianapolis ....... 1 00
Pair silk mittens, hand knit, Mrs. P. D. Stagg, Greensburg .......... 2 00
Second, Mrs. Sophia Groves, Anderson ............................ 1 00
Pair silk stockings, hand knit, Mrs. A. G. Jackson, Vevay ......... 3 00
Second, Miss Jennie S. Judson, Paris, Ill .......................... 2 00
Crochet hood, Miss Mary Contant, Crawfordsville .................. 2 00
Second, Mrs. C. A. Murray, Connersville .......................... 1 00
Thread or silk crochet baby cap, Mrs. M. Pose, Shelbyville ........ 2 00
Second, Mrs. S. Groves, Anderson ................................. 1 00
Crochet fascinator, Miss Jennie S. Judson, Paris, Ill ................ 2 00
Second, Mrs. C. A. Murray, Connersville .......................... 1 00
Crochet child's sack, Mrs. A. D. McLeod, Indianapolis ................ 2 00
Second, Mrs. C. A. Murray, Connersville .......................... 1 00
Crochet cotton tidy, Mrs. J. W. Browning, Indianapolis ............ 1 00
Afghan, Mrs. S. Groves, Anderson ................................ 2 00
Second, Mrs. A. G. Jackson, Vevay ............................... 1 00
Afghan, infant's, Miss Luna Wilson, Rushville .................... 2 00
Second, Miss Libbie Cookerly, Bloomington ....................... 1 00
Display crochet buttons, Mrs. M. F. Owen, Indianapolis ............. 1 00
Counterpane, knit, Mrs. A. G. Jackson, Vevay ...................... 1 00
Counterpane, crochet, Mrs. A. Maillard, Indianapolis ............... 1 00
Crochit lace display, not less than 1 yard, Mrs. N. E. Fulton, Edinburg .......................... 2 00
Second, Mrs. C. A. Murray, Connersville .......................... 1 00
Knit lace, display, not less than 1 yard, Mrs. P. D. Stagg, Greensburg .................. 2 00
Second, Mrs. A. G. Jackson, Vevay ............................... 1 00
Crochet skirt, Mrs. Robert Scott, Indianapolis .................... 2 00
Second, Mrs. A. M. Selman, Indianapolis .......................... 1 00

Committee—Miss Kate Connelly, Assistant Superintendent, Indianapolis; Mrs. Mollie Bundy, New Castle; Miss Lida Mitchell, Princeton.
PREMIUM AWARDS.

CLASS XLVIII—Lace Work.

Point lace, display, Mrs. M. A. Johnson, Indianapolis .......... $3 00
Second, Mrs. Geo. W. Baker, Indianapolis........................ 2 00
Point lace, specimen, Miss Fannie Reed, Nulltown ............... 3 00
Second, Mrs. S. R. Maxam, Princeton............................. 2 00
Guipure lace, specimen, Miss R. C. Alexander, Paris, Ill........ 3 00
Second, Mrs. A. G. Jackson, Vevay............................... 2 00
Applique lace, specimen, Mrs. M. Posz, Shelbyville ............. 2 00
Second, Mrs. M. Posz, Shelbyville .............................. 1 00
Tatting, display, Mrs. A. B. Bosserman, Lafayette................. 2 00
Second, Miss Rose Horton, Marion ................................ 1 00
Macrame lace, display, Miss Susie Martin, Indianapolis......... 1 00
Featheredge, specimen, Mrs. Ella Wills, Lebanon ................ 2 00
Second, Miss Dora Crawford, Rushville ........................... 1 00
Rick-rack work, display, Mrs. Anna M. Bruner, Indianapolis.... 2 00
Second, Mrs. J. C. Camburn, Rushville ........................... 1 00
Novelty braid, display, Miss Lulu Burt, Indianapolis ........... 2 00
Second, Mrs. C. A. Murray, Connersville ......................... 1 00
Scrim tidies, Miss Jennie Swift, Connersville ................... 2 00
Second, Mrs. A. Sammons, Indianapolis ........................... 1 00

Committee—Same as in Class 47.

BOOK XLIX—Embroidery.

Embroidery, with linen floss, Mrs. R. L. Martin, Cape Girardeau, Mo $2 00
Embroidery, cotton display, Mrs. P. D. Stagg, Greensburg .......... 2 00
Embroidery, silk, child's dress, Miss Kate Sims, Columbus ....... 2 00
Embroidery, cotton, child's dress, Mrs. J. H. Taylor, Indianapolis 2 00
Embroidery, napkin set, Mrs. Cyrus Smith, Indianapolis .......... 2 00
Second, Miss E. A. Foulke, Paris, Ill ................................ 1 00
Embroidery, doiley set, Miss Anna McKenzie, Indianapolis ....... 2 00
Second, Mrs. C. W. Levering, Paris, Ill ............................ 1 00
Embroidery, handkerchief, Mrs. A. G. Jackson, Vevay .............. 1 00
Embroidery, silk specimen, Miss Kate Sims, Columbus ............. 2 00
Second, Miss R. C. Alexander, Paris, Ill .......................... 1 00
Embroidery, silk, skirt, Mrs. M. Posz, Shelbyville ............... 2 00
Second, Mrs. A. D. McLeod, Indianapolis .......................... 1 00
Embroidery, silk, infant's shall, Miss Edith Sims, Columbus .... 2 00
Second, Mrs. P. D. Stagg, Shelbyville ............................ 1 00
Embroidery, table cover, Mrs. F. E. Shideler, Muncie ............. 3 00
Second, Mrs. A. D. Pendleton, Indianapolis ........................ 2 00
Embroidery, ottoman cover, Mrs. A. B. Bosserman, Lafayette ...... 2 00
Second, Mrs. Judge Trogdon, Paris, Ill ............................ 1 00
Embroidery, chair cover, Mrs. Ella Wills, Lebanon ................. 2 00
Second, Mrs. P. D. Stagg, Greensburg ............................. 1 00

7—Bd. of Agr.
Embroidery, sofa cushion, Mrs. T. B. Scott, Richmond .......... $2.00
  Second, Mrs. Geo. R. Fravell, Marion .......................... 1.00
Embroidery, toilet cushion, Mrs. Ella Wills, Lebanon .......... 2.00
  Second, Mrs. F. E. Shideler, Muncie .......................... 1.00
Embroidery, slippers made up, second, Mrs. S. Groves, Anderson .. 1.00
Embroidery, applique, white specimen, Mrs. M. Posz, Shelbyville .. 1.00
Embroidery, applique, colored specimen, Mrs. M. Posz, Shelbyville .. 2.00
  Second, Mrs. M. Posz, Shelbyville ........................... 1.00
Embroidery, outline, display, Mrs. P. D. Stagg, Greensburg .... 2.00
Embroidery, Kensington, display, Mrs. Ella Wills, Lebanon .... 3.00
Embroidery, Kensington, specimen, Mrs. Aughun, Indianapolis .... 2.00
Embroidery, tapestry, display, Mrs. M. Posz, Shelbyville ....... 2.00
  Second, Mrs. A. B. Bosserman, Lafayette ...................... 1.00
Embroidery, chenille, display, Mrs. P. D. Stagg, Greensburg .... 3.00
  Second, Mrs. Judge Trogdon, Paris, Ill ........................ 2.00
Embroidery, aerasene, display, Mrs. J. C. Cambern, Rushville ... 3.00
Embroidery, aerasene, specimen, Miss Mary Keen, Indianapolis .... 2.00
Embroidery, high-art needlework, display, Mrs. A. Sammons, Indianapolis ... 3.00
  Second, Mrs. Ella Wills, Lebanon .............................. 3.00
Embroidery, ribbon, display, Miss Anna Kistner, Indianapolis .... 3.00
Embroidery, ribbon, specimen, Mrs. Ella Wills, Lebanon ........ 2.00
Embroidery, fire-screen, mounted, Miss E. DeSouchet, Indianapolis ... 3.00
  Second, Mrs. Mary Johnson, Indianapolis ...................... 2.00

  Committee—Mrs. J. W. Shideler, Superintendent, Indianapolis; Miss Lulu Davidson, Whitesville, and Miss Kate Heron, Connersville.

  BOOK L—Sewing—Machine and Hand.

Machine work, three articles, Miss Fannie Cummings, Indianapolis .... $2.00
  Second, Mrs. Eugenia F. Smith, Indianapolis ................... 1.00
Quilt, silk, needlework, Lena Hank, Madison .................... 3.00
  Second, Mrs. John Dans, Brightwood ............................ 2.00
Crazy quilt, Mrs. A. Sammons, Indianapolis .................... 2.00
  Second, Mrs. Emma M. Casterline, Indianapolis ................ 1.00
Button holes, display on different materials, Mrs. C. W. Levering, Paris, Ill 2.00
  Second, Mrs. S. Groves, Anderson .............................. 1.00
Hemstitching, specimen, hand, Mrs. S. R. Maxam, Princeton ...... 2.00
Drawn work, Mrs. Will Hughes, Indianapolis ................... 2.00
  Second, Mrs. J. W. Beck, Indianapolis ........................ 1.00
Infant's wardrobe, most sensible and complete, Mrs. C. A. Murry, Connersville .... 2.00
Pillow shams, embroidered, Mrs. R. L. Martin, Cape Girardeau, Mo. ... 2.00
  Second, Mrs. Groves, Anderson ................................. 1.00
Pillow shams, fancy, Mrs. Ella Wills, Lebanon .................. 2.00
  Second, Mrs. J. E. Howe, Muncie .............................. 1.00

  Committee—Same as Book 49.
PREMIUM AWARDS.

BOOK LI—Miscellaneous.

Wax flowers, Miss Susie Martin, Indianapolis ..................... $2.00
Second, L. E. Wellman, Indianapolis ............................... 1.00
Wax fruit, Miss Susie Martin, Indianapolis ...................... 2.00
Second, Miss Susie Martin, Indianapolis ......................... 1.00
Wax work, ornamental, Miss Susie Martin, Indianapolis .......... 2.00
Second, Miss Susie Martin, Indianapolis .......................... 1.00
Handkerchief sachet, Miss E. DeSouchet, Indianapolis .......... 2.00
Second, Mrs. Ella Wills, Lebanon ................................. 1.00
Glove box, Miss Kate Sims, Columbus ............................. 2.00
Second, Miss Jennie Swift, Connersville ......................... 1.00
Broom-holder, Mrs. F. E. Shideler, Muncie ...................... 2.00
Second, Mrs. Judge Trogdon, Parke, Ill ......................... 1.00
Toilet cushion, not embroidered, Mrs. A. Sammons, Indianapolis . 2.00
Second, Mrs. J. E. Howe, Muncie ................................ 1.00
Sofa pillow, not embroidered, Mrs. Geo. R. Fravell, Marion .......... 2.00
Second, Miss Anna McKenzie, Indianapolis ..................... 1.00
Lamp mats, fancy, Mrs. Ella Wills, Lebanon ...................... 1.00
Toilet mats, Mrs. P. D. Stagg, Greensburg ...................... 1.00
Chair stripe, Nettie Camplin, Indianapolis ..................... 1.00
Lambrequins, mantel, embroidered or painted, Mrs. Geo. R. Fravell, Marion 2.00
Second, Mrs. J. H. Hewitt, Chicago, Ill ..................... 1.00
Tidy, not crochet, Mrs. A. Maillard, Indianapolis .............. 2.00
Second, Mrs. J. E. Howe, Muncie ............................... 1.00
Minerals, collection, named, Mrs. N. E. Fulton, Edinburg ...... 3.00
Stuffed and mounted birds, collection named, Mrs. Laura Ingersoll, Indianapolis ................................. 7.00
Second, Mrs. L. Wainscott, Cumberland .......................... 3.00
Stuffed and mounted animals, collection named, Mrs. Laura Ingersoll, Indianapolis ..................... 7.00
Upholstery work chair, Mrs. A. M. Noe, Indianapolis .......... 3.00
Exhibit in silk culture, Mrs. E. E. Fay, Princeton, Ill ......... 3.00
Rug, Mrs. E. P. Matthews, Indianapolis .......................... 2.00
Second, Mrs. S. Groves, Anderson ............................ 1.00
Fur rugs, Mrs. A. M. Noe, Indianapolis .......................... 3.00

Committee—Same as Book '47.

BOOK LII—Business Exhibits.

Stamping, embroidery and fancy goods, Mrs. J. Camber ............... $8.00
Second, Mrs. F. E. Shideler, Muncie .......................... 4.00
Paper box display, Mrs. A. M. Taylor, Indianapolis .............. 3.00
Shirt making, Mrs. A. G. Jackson, Vevay ........................ 3.00
Second, Mrs. M. McKenzie, Anderson ........................ 2.00
BOARD OF AGRICULTURE.

Display of millinery, Mrs. M. Detrich, Indianapolis .......................... $25 00
Second, Mrs. M. McKiernan, Indianapolis ............................... 20 00
Display dressmaking, Mrs. M. Layland, Indianapolis ......................... 15 00
Second, Mrs. L. Irvin, Indianapolis ...................................... 10 00
Display tailoring, Mrs. C. Rugger, Indianapolis ............................. 15 00
Second, Mrs. Shaneberger, Indianapolis .................................... 10 00
Display hair goods, Mrs. M. E. Phelan, Indianapolis ......................... 10 00

Committee—Same as Book 49.

BOOK LIII—Decorative Art Work.

Hammered or repousse work display, Miss Minnie Gates, Indianapolis .... $2 00
Second, Mrs. H. C. Roney, Indianapolis .................................... 1 00
French decorative work display, Mrs. Mabel Ennis, Indianapolis ........ 2 00
Second, Miss Fannie Cummings, Indianapolis .................................. 1 00
Modeling in clay, display, Miss Retta Matthews, Arlington ............... 4 00
Wood carving, Mrs. J. W. De Wolf, Indianapolis ............................. 5 00
Second, Mrs. James Sweetser, Marion ....................................... 3 00
Pottery painting, Limoges, display, Mrs. Sallie D. Vajen, Indianapolis 3 00
Pottery painting, Limoges, specimen, Mrs. Sallie D. Vajen, Indianapolis 2 00
Pottery painting, bisque, specimen, Miss Dollie C. Sharff, Indianapolis 2 00
Painting on china, tableware display, Miss Sue M. Ketcham, Indianapolis 5 00
Second, Mrs. J. W. Browning, Indianapolis .................................. 3 00
Painting on china, tableware, specimen, Miss Sue M. Ketcham, Indianapo-
lis ...................................................................................... 2 00
Second, Mrs. Maud Holloway, Knightstown .................................... 1 00
Painting on china, ornamental pieces, Miss Nellie L. Berkey, Lafayette 3 00
Second, Miss Sue M. Ketcham, Indianapolis .................................. 2 00
Painting on tiles, display, Miss Nellie L. Berkey, Lafayette ................ 3 00
Second, Miss Sue M. Ketcham, Indianapolis .................................. 2 00
Painting on slate, display, Miss Grace Winters, Indianapolis ............... 3 00
Painting on wood, display, Miss Retta Matthews, Arlington ............... 5 00
Second, Miss Dollie Scharff, Indianapolis ................................... 3 00
Painting on wood, specimen, Katie Rowe, Indianapolis ....................... 2 00
Painting on silk or satin, display, Miss Nellie L. Berkey, Lafayette .... 3 00
Second, Mrs. T. J. Trusler, Indianapolis ..................................... 2 00
Painting on silk or satin, specimen, Miss Nellie L. Berkey, Lafayette ... 2 00
Second, Miss Ida Atchison, Crawfordsville .................................. 1 00
Painting on colored velvet, display, Mrs. J. H. Hewitt, Chicago, Ill .... 3 00
Painting on colored velvet, specimen, Mrs. J. H. Hewitt, Chicago, Ill ... 2 00
Second, Mrs. S. Groves, Anderson ............................................. 1 00
Painting on velvet, white specimen, Mrs. J. H. Hewitt, Chicago, Ill .... 3 00
Second, Miss Ida Atchison, Crawfordsville .................................. 2 00
Painting on velvet, Kensington, display, Mrs. Kate Parks, South Bend ... 2 00
Second, Mrs. J. H. Hewitt, Chicago, Ill ...................................... 1 00
PREMIUM AWARDS.

Painting on bolting cloth, display, Miss Nellie L. Berkey, Lafayette .... $2 00
Second, Mrs. J. W. Browning, Indianapolis .......................... 1 00
Painted fan, Mrs. Ella Wills, Lebanon .................................. 2 00
Second, Mrs. P. D. Stagg, Greenburg .................................. 1 00
Painted toilet set, Miss Ida Atchison, Crawfordsville .................. 2 00
Second, Mrs. T. J. Trusler, Indianapolis ............................. 1 00
Painted fire-screen, mounted, Mrs. E. M. Ingraham, Indianapolis .... 2 00
Second, Miss Retta Mathews, Arlington ................................ 2 00
Original design for decoration in oil, Miss Retta Mathews, Arlington 3 00
Second, Miss Mary Robinson, Indianapolis ................................ 2 00
Original design for decoration in water colors, Miss Retta Mathews, Ar-
lington ................................................................................. 3 00
Second, Miss Mary Robinson, Indianapolis ................................ 2 00
Drawings, original, display, Miss Mary Robinson, Indianapolis ...... 2 00
Second, Miss Retta Mathews, Arlington .................................. 1 00
Drawings, copy, display, High School pupils of Indianapolis ......... 2 00
Second, Miss Ida Atchison, Crawfordsville ............................... 1 00
Painting on pair panels, water colors, Mrs. S. E. Leet, Indianapolis 3 00
Second, Mrs. J. H. Hewitt, Chicago, Ill. ................................. 2 00
Painting on pair panels, oil, Mrs. T. J. Trusler, Indianapolis ........ 3 00
Second, Miss Dollie Scharff .................................................. 2 00

Committee—Mrs. M. M. Finch, Superintendent, Indianapolis; Mrs. Hattie E. Deardorff, Cynthiana; Miss Elizabeth Morgan, Connersville.

BOOK LIV—Art Work—Amateur.

Crayon drawings, display, Indianapolis High School pupils .......... $3 00
Second, Indianapolis High School pupils ............................... 2 00
Painted plaques, display, Miss Nellie L. Berkey, Lafayette .......... 3 00
Second, Miss Dollie Scharff, Indianapolis .............................. 2 00
Flower painting in oil, display, Miss Belle Morgan, Indianapolis 3 00
Second, Miss Dollie Scharff, Indianapolis ............................... 2 00
Fruit painting in oil, Mrs. T. J. Trusler, Indianapolis ................ 3 00
Second, Mrs. Geo. Hawkins, Indianapolis ............................... 2 00
Landscapes in oil, display, Mrs. T. J. Trusler, Indianapolis ......... 5 00
Second, Mrs. Annie Rexford, Indianapolis .............................. 3 00
Landscape in oil, specimen, Mrs. H. S. Tucker, Indianapolis ........ 3 00
Second, Miss Dollie Scharff, Indianapolis .............................. 2 00
Portraits in oil, specimen, Mrs. H. S. Tucker, Indianapolis .......... 5 00
Second, Mrs. T. J. Trusler, Indianapolis ............................... 3 00
Sketch from nature in oil, Miss Dollie Scharff, Indianapolis ......... 4 00
Second, Mrs. H. S. Tucker, Indianapolis .................................. 2 00
Study from still life, Miss Ella Bridges, Indianapolis ................. 2 00
Second, Mrs. T. J. Trusler, Indianapolis ............................... 1 00

Committee—Same as Book 53.
BOOK LV—Art Work—Professional.

Portraits in oil, display, Miss Sue Ketcham, Indianapolis .......................... $10.00
Second, Mrs. E. N. Ingraham, Indianapolis ........................................... 5.00
Portraits in oil, specimen, Miss Sue Ketcham, Indianapolis ....................... 3.00
Landscapes in oil, display, Miss Sue Ketcham, Indianapolis ...................... 7.00
Sketch from nature, Miss Sue M. Ketcham, Indianapolis ......................... 3.00
Fruit or vegetable painting in oil, display, Miss Sue M. Ketcham, Indianapolis .. 8.00
Second, Miss Mary Robinson, Indianapolis ............................................ 4.00
Fruit or vegetable painting in oil, specimen from nature, Miss Sue M. Ketcham, Indianapolis .................. 3.00
Flower painting in oil, display, Miss Mary Robinson, Indianapolis ............... 5.00
Second, Miss Sue M. Ketcham .......................................................... 3.00
Flower painting in oil, specimen from nature, Miss Mary Robinson, Indianapolis . 2.00
Flower painting, water colors, display, Miss Mary Robinson, Indianapolis .... 5.00
Second, Miss Sue M. Ketcham, Indianapolis ........................................... 3.00
Flower painting, water colors, specimen, Miss Sue Ketcham, Indianapolis .... 2.00
Study from life, in oil, Mrs. H. S. Tucker, Indianapolis ........................ 5.00
Second, Miss Sue M. Ketcham, Indianapolis ........................................... 3.00
Study from life, water colors, Mrs. E. M. Ingraham, Indianapolis ............... 5.00
Second, Miss Retta Matthews, Arlington ............................................. 3.00
Drawing from life, Miss Mary Robinson, Indianapolis ................................ 2.00
Pastelle painting, specimen, Mrs. Alice B. Keith, Delphi ......................... 3.00
Second, Miss Alice Rose, Indianapolis ............................................... 2.00
Plaques, display, Miss Retta Matthews, Arlington ................................ 2.00
Plaque, alabaster, Miss Jessie K. Bigelow, Indianapolis ........................ 2.00
Crayon drawing, specimen, Mrs. Alice B. Keith, Delphi .......................... 3.00
Second, Mrs. E. M. Ingraham, Indianapolis .......................................... 2.00
Drawing from the antique, specimen, Miss Retta Matthews, Arlington .......... 2.00
Study from still life, in oil, Miss Alice Ross, Indianapolis ...................... 2.00
Second, Miss Mary Robinson, Indianapolis ........................................... 1.00
Study from still life, water colors, Miss Mary Robinson, Indianapolis ....... 2.00

Committee—Same as Book 53.

BOOK LVI—Table Luxuries.

Butter, 3 pounds, Mrs. Harriett Stanton, Greenwood ............................ $2.00
Second, Mrs. L. C. Brown, Brightwood ............................................. 1.00
Honey in comb, 5 lbs., in most marketable shape, Lizzie Lane, Lebanon ...... 3.00
Second, Mrs. Frances A. Cox, White Lick ........................................... 2.00
Honey, extracted, 5 lbs., in most marketable shape, Mrs. Frances A. Cox, White Lick .......................................................... 3.00
Second, Lizzie Lane, Lebanon ......................................................... 2.00
Bread, loaf, wheat, yeast, Miss Mary Hedrick, Indianapolis ................... 2.00
Second, Mrs. A. J. Hay, Indianapolis ................................................. 1.00
PREMIUM AWARDS.

Bread, loaf, wheat, salt-rising, Mrs. M. M. Finch, Indianapolis ... $2.00
  Second, Mrs. W. S. Montgomery, Noblesville ... 1.00
Graham bread, yeast, Miss Mary Hedrick, Indianapolis ... 2.00
  Second, Mrs. Theo. McCune, Indianapolis ... 1.00
Graham bread, salt-rising, Mrs. N. A. Ford, Indianapolis ... 2.00
  Second, Mrs. J. J. Powell, Irvington ... 1.00
Fig cake, Mrs. Juliette McCurdy, Indianapolis ... 2.00
Layer cake, orange, Mrs. Juliette McCurdy, Indianapolis ... 2.00
  Second, Mrs. Cyrus Smith, Indianapolis ... 1.00
Layer cake, cocoanut, Mrs. E. R. Scott, Indianapolis ... 2.00
  Second, Mrs. Juliette McCurdy, Indianapolis ... 1.00
Pound cake, Mrs. C. B. Darling, North Indianapolis ... 2.00
  Second, Mrs. Maria Childs, Indianapolis ... 1.00
Fruit cake, Mrs. S. W. Moulton, Shelbyville, Ill ... 3.00
  Second, Mrs. Robt. Scott, Indianapolis ... 2.00
Pork cake, Mrs. Sallie J. Howard, Indianapolis ... 1.00
White cake, Mrs. A. J. Hay, Indianapolis ... 2.00
  Second, Miss Kittie J. Rowe, Indianapolis ... 1.00
Chocolate cake, layer, Mrs. J. W. Canan, Indianapolis ... 2.00
  Second, Mrs. Cyrus Smith, Indianapolis ... 1.00
Chocolate cake, loaf, Mrs. L. Thompson, Indianapolis ... 2.00
Crullers, Miss Kittie J. Rowe, Indianapolis ... 1.00
Jellies, collection, Mrs. Nevie Woods, Pecksburg ... 3.00
  Second, Mrs. E. Speer, Greensburg ... 2.00
Preserves, collection not less than one pint each, Mrs. E. Speer, Greensburg ... 5.00
  Second, Lizzie Lane, Lebanon ... 3.00
Fruit butters, collection not less than one pint each, Mrs. M. J. Flick, Lawrence ... 3.00
  Second, Mrs. Robert Johnson, Castleton ... 2.00
Canned fruit, collection not less than one pint each, Mrs. Sadie Hall, Indianapolis ... 5.00
  Second, Mrs. M. J. Flick, Lawrence ... 3.00
Sweet pickles, collection, Mrs. E. Speer, Greensburg ... 2.00
  Second, Mrs. Sallie J. Howard, Indianapolis ... 1.00
Pickles, mixed, Mrs. Sallie J. Howard, Indianapolis ... 2.00
  Second, Gertie Darling, North Indianapolis ... 1.00
Pickles, cucumber, Mrs. L. Williamson, Indianapolis ... 2.00
  Second, Mrs. H. M. Heron, Indianapolis ... 1.00
Maple molasses, half gallon, Mrs. A. W. Parrish, Indianapolis ... 1.00
Maple sugar, five pounds, Mrs. D. L. Garver, Hart, Mich. ... 1.00
Tomato catsup, not less than one pint, Miss Mary Hedrick, Indianapolis ... 1.00

Committee—Mrs. L. C. Hawkins, Superintendent, Indianapolis; Mrs. Frances A. Shultz, Attica; Mrs. Eva D. Thrasher, Shelbyville.
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<th>Category</th>
<th>Winner</th>
<th>City</th>
<th>Amount</th>
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<td>Loaf wheat bread—yeast</td>
<td>Ella Brison, Greensburg</td>
<td>Greensburg</td>
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<td>Second</td>
<td>Katie Hay, Indianapolis</td>
<td>Indianapolis</td>
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<td>Loaf wheat bread—salt-rising</td>
<td>Blanche L. Wilson, Irvington</td>
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<td>Florence East, Indianapolis</td>
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<tr>
<td>Pound cake</td>
<td>Ella Brison, Greensburg</td>
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<td>Second</td>
<td>Mollie Willey, Napoleon</td>
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<tr>
<td>Fancy cake</td>
<td>Lena Ingraham, Indianapolis</td>
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<tr>
<td>Second</td>
<td>Hattie K. Fox, Indianapolis</td>
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<td>Jellies, collection</td>
<td>Lillie Sammons, Indianapolis</td>
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<td>Second</td>
<td>Vina Brady, Lawrence</td>
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<td>Pickles, mixed</td>
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<td>Patch work, crazy</td>
<td>Mary Fry, Indianapolis</td>
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<td>Hand-sewing, garment</td>
<td>Anna Gray, Shelbyville</td>
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<td>Embroidery, cotton</td>
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<td>Embroidery, worsted specimen</td>
<td>Gertrude P. Muchmore, Shelbyville</td>
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<tr>
<td>Second</td>
<td>Anna Gray, Shelbyville</td>
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<td>Maud Bynum, Indianapolis</td>
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<td>Second</td>
<td>Anna Gray, Shelbyville</td>
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<td>Dressed doll and wardrobe</td>
<td>Maud Hawkins, Indianapolis</td>
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<td>Fanny Voorhees, Indianapolis</td>
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<td>Crochet work, display</td>
<td>Nellie Contant, Crawfordsville</td>
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<td>Belle Roberts, South Bend</td>
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<td>Crochet mittens</td>
<td>Bertha Tarkleson, Anderson</td>
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<td>Pin knit stockings</td>
<td>Josie Jackson, Vevay</td>
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<tr>
<td>Pair knit mittens</td>
<td>Belle Roberts, South Bend</td>
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<tr>
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<td>Pin cushion</td>
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<td>Toilet cushion</td>
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ENTRIES, STATE FAIRS.

Drawing, copy, Mary Ingraham, Indianapolis......... $1.00
Fret sawing, display, Wm. D. Howe, Irvington........ 2.00
Woods, collection named, Lillian Sammons, Indianapolis. 2.00
Shells, collection named, Henry S. Humphrey, Indianapolis. 1.00
Minerals, collection named, Gerry M. Sanborn, Indianapolis. 2.00
Butterflies, collection named, E. L. Shaneberger, Indianapolis. 3.00
Second, Fred Biedenmeister, Indianapolis............. 2.00
Insects, collection named, Fred Biedenmeister, Indianapolis. 2.00
Moths, collection named, Herman Ritter, Indianapolis. 3.00
Second, Fred Biedenmeister, Indianapolis............. 2.00
Collection of curiosities, Henry S. Humphrey, Indianapolis. 1.00
Collection of old coins, Gerry M. Sanborn, Indianapolis. 2.00
Collection of tobacco tags, Robbie Ryan, Indianapolis. 2.00
Second, Albert McGuire, Indianapolis.................. 1.00
Architectural design, Nellie Contant, Crawfordsville 2.00

Committee—Miss Jessie K. Bigelow, Superintendent, Indianapolis; Miss Jennie Mitchell, Princeton; Miss Jennie Mourer, Marion.

ENTRIES, STATE FAIRS, 1886.

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<th>Dogs and Ponies</th>
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INDEX TO STATE FAIR EXHIBITORS.

[Where State is not given Indiana is implied.]

A.

Abbott, Mrs. D. L., Indianapolis, relics.
Abbott Buggy Co., Chicago, Ill., buggies.
Adams, H. T., Onward, sheep.
Adams, W. H., Onward, apples and farm products.
Adams, Burt., Indianapolis, dogs.
Albertson & Hobbs, Bridgeport, nursery stock.
Alexander, Mrs. J. M., Indianapolis, crochet lace.
Albert, E., Indianapolis, melons.
Albert & Eaglesfield, Indianapolis, hay press.
Alexander & Thompson, Greensburg, hogs.
Alexander, Miss R. C., Paris, Ill., point lace.
Allen, Solomon, Coloma, pears.
Allen Bros., Bloomingdale, poultry.
Allison & Irwin, Columbus, fence weaving machine.
Allen, Miss Donia, Indianapolis, embroidery.
Almond, Enos, Agt., Indianapolis, Butter Gibbs plows.
American Paper Pully Co., Indianapolis, paper pulleys.
Anderson, Mrs. M. B., Greensburg, worsted quilt.
Apple, Joseph, Indianapolis, horses.
Archev, Mrs. J. B., Indianapolis, sampler.
Armstrong, Frank, Indianapolis, horses.

Ashbrook, Miss Nellie, Indianapolis, painting.
Atchison, Miss Ida, Crawfordsville, painting.
Atkins, E. C., Indianapolis, saws.
Atkinson, Benj. A., Indianapolis, automatic hinge.
Aughtin, Mrs., Indianapolis, embroidery.
Aultman, Miller & Co., Akron, Ohio, harvesting machinery.
Aultman & Taylor Co., Mansfield, Ohio, traction engine.
Aultman, C. & Co., Canton, Ohio, thrashers and engine.
Avery Planter Co., Peoria, Ill., corn planters.

B.

Barnum, W. W., Indianapolis, automatic bed canopy.
Baird & Dillon, Indianapolis, silverware display.
Baber, Mrs. Geo. W., Indianapolis, point lace.
Bailey, J. C., Ben Davis, farm products.
Bacon, Bertie, Indianapolis, drawing.
Babbitt, B. F., Lafayette, Babbitt's soap.
Backus & Reagan, Indianapolis, buggies and carriages.
Banks & Hilt, Door Village, horse.
Barley, Dorcas, Marion, hem-stitching.
Ball, E. & Co., Canton, Ohio, plow display.
Band & Foreman, Liberty, revolving hay rake.
Bailey, S. L., Kewka, N. Y., sectional fence.
Bacon, Minnie, Indianapolis, rick-rack,
STATE FAIR EXHIBITORS.

Bass, Thomas W. & Son, Indianapolis, broom exhibit.
Barlow, H. S., Tilden, farm products.
Bartholomew, H., Waterloo, apples.
Bals & Laut, Indianapolis, poultry, horses and sheep.
Barker, I. N., Thorntown, poultry.
Baker, W. W., Indianapolis, horses.
Batcheller, H. T. & Son, Rock Falls, Ill., display butter color.
Bals, H. C. G., Indianapolis, poultry.
Banhard, V., Martinsville, horses.
Barker, Miss Eva, Westfield, crochet hood.
Barley, Mrs. A. R., Marion, hem-stitching.
Baker, C. W., Mansfield, Ohio, hogs.
Baker, E. B., Remington, poultry.
Barnhart, S., Thorntown, horses.
Benham, F. M., Grand Rapids, Mich., poultry.
Beaty, Jos. & James, Indianapolis, jacks and jennets.
Beal, Mary, Indianapolis, hogs and dogs.
Bergener, G. L., Indianapolis, poultry.
Becker, Joseph, Indianapolis, horses and dogs.
Beard, James, Indianapolis, horses.
Beeman, Truman, Indianapolis, candle stand.
Beidenmeister, Ired, Indianapolis, Geol. and Nat. History.
Berkey, Mrs. Jane, Lafayette, cotton tidy.
Benham, F. M., Grand Rapids, Mich., honey.
Beach, Will G., Indianapolis, Geol. and Nat. History.
Beatty, Simon, Annan, Scotland, horses.
Beck, Edith, Indianapolis, fancy work.
Beck, Mrs. J. W., Indianapolis, drawn work.
Berkey, Miss Nellie L., Lafayette, painting.
Beyer, August, South Bend, farm products.
Becker John, Indianapolis, farm products.
Bentley, Mrs. Mary, Indianapolis, rag carpet.
Benson, Anne, Indianapolis, rag carpet.
Beardsley, Mrs. S. L., Indianapolis, embroidery.
Beeber, J. H., Indianapolis, board fence.
Berteman Bros., Indianapolis, florist.

Bernd Bros. & Co., Indianapolis, top delivery wagon.
Beedle & Kelly Co., Troy, Ohio, corn planters.
Bellis, Wm., Indianapolis, coin mailing book.
Biedenmeister, Frank, Indianapolis, Geology and Natural History.
Bigelow, Miss Jessie, Indianapolis, painting.
Bissell, D. P., Indianapolis, horses.
Birdsall Co., Auburn, N. Y., traction engine.
Biebingers, Mrs. Kate, Indianapolis, millinery.
Biedenmeister, Daisy, Indianapolis, lamberquis.
Birdsall Manufacturing Co., South Bend, clover huller.
Bills, Eliaz, Macy, mole burrowing animal trap.
Bimmel, L. & Son, St. Mary's, Ohio, buggies.
Blayds, S. T., Roachdale, horses.
Blair, Mrs. E. M., Indianapolis, relics.
Blomer, Ashael P., Indianapolis, Geology and Natural History.
Blake, John W., agent, Indianapolis, poultry fence.
Blair, Miss Nora, Indianapolis, fasanator.
Blair, E. M., Indianapolis, farm products.
Black, C. H., Indianapolis, buggies and carriages.
Black, G. H., Indianapolis, sporting wagon.
Blume, Nathan, New York, jewelry.
Blake, Miss Fannie G., Indianapolis, embroidery.
Bowman Archie, Indianapolis, horses.
Bosserman, Mrs. A. B., Lafayette, knit and crochet work.
Boswell, G. G. T., Indianapolis, Geology and Natural History.
Boots, John C., Spencerville, apples.
Bond, Nina, Indianapolis, pound cake.
Boyd, W. H., Laporte, apples.
Bunge, Edward, Cumberland, Geology and Natural History.
Boblett, Miss Mamie, Knightstown, emboidery.
Bogert, Isaac, Dana, churn dasher.
Bolton, Mrs. Sarah T., Indianapolis, painting.
Boyd & Whittaker, Indianapolis, silk culture.
Boyd, Wm., Toronto, Canada, horses.
Boswell, Joe E., Indianapolis, fodder cutter.
Boggs, W. H., Covington, Ohio, farm fence.
Boston Cordage Co., Boston, Mass., binding twine.
Bridgeland & Berry, Indianapolis, horses.
Bradshaw, Harmon, Indianapolis, dogs.
Brown & Hinshaw, Rural, hogs.
Bradehaw, J. E., Indianapolis, dogs.
Breunman Bros., Decatur, Ill., horses.
Brown, Lewis H. M., Brightwood, horses.
Bradshaw, A. H., Indianapolis, dogs.
Bracken, Lawrence, Indianapolis, dogs.
Brandt, H., Waterloo, apples.
Brooker, Thomas, Indianapolis, farm products.
Bruner, Mrs. Anna L., Indianapolis, knit and crochet work.
Brady, Miss Vine, Lawrence, jellies.
Brison, Ella, Greensburg, bread.
Brown, Mrs. L. C., Brightwood, butter.
Bridges, Miss Ella, Indianapolis, painting.
Brown, Miss Cora, Indianapolis, drawings.
Brown, Mrs. T. G., Clermont, calico quilt.
Brown, W. M., Falmouth, horses.
Brown, Mrs. M. A., Crawfordsville, buttonholes.
Brown & Hinshaw, Rural, hogs.
Brown, Daniel, Rushville, horses.
Brown, L. S., Carmel, horses.
Brown, John P., Rising Sun, fence weaving machine.
Brandenburg, Mrs., Indianapolis, bread.
Brandenburg, Louis, Indianapolis, fret sawing.
Bryan, Dr. J., Indianapolis, iron fence.
Bradley, David, Mfg. Co., Indianapolis, plow display.
Brown & Furguson, Indianapolis, stoves and ranges.
Bryan, Mrs. Dr. Indianapolis, worsted mittens.
Brown, Miss Julia A., Indianapolis, embroidery.
Bright, Miss Mattie, Indianapolis, crochet tidy.
Browning, Mrs. J. W., Indianapolis, painting and crochet tidy.
Brown Manley Co., Matta, Ohio, cultivators.
Bryant's Business College, Indianapolis, pen drawing.
Burnside, Mrs. B. F., Indianapolis, toilet cushion.
Bustle, J. H., Mapleton, poultry.
Buchanan, Samuel, Zionsville, horses.
Burleigh, Miss Floy, Indianapolis, ottoman cover.
Burford, Dr. Indianapolis, horses.
Butler, R. W., Ekin, hogs.
Buckels & Yost, Muncie, cattle.
Buggs, Mrs. Sarah H., Indianapolis, pillow shams.
Buford, B. T., Danville, horses.
Buck, Mrs. J. C., Indianapolis, embroidery.
Budd, J. R. & Co., Indianapolis, butter and cheese.
Buroker, J. P., Sweetzer, poultry.
Butterfield, E., Wright's Corner, farm products.
Burt, Miss Lulu, Indianapolis, lace.
Buck, Mrs. A., Laporte, cotton socks.
Bunting, Miss Ella D., Indianapolis, silk purse.
Burgess, Miss Anna L., Indianapolis, painting.
Burgess, Dan, Penhook, horses.
Bushnell, Lucy, Indianapolis, drawing.
Buck, Inez, Laporte, embroidery.
Bynum, Maud, Indianapolis, embroidery.
Byers, J. G. & Son, Simpsonville, Ky., sheep.
Byrkit Sheathing Lath Co., Indianapolis, combined sheathing and lath.

C.

Caldwell, W. L., Danville, jacks and jennets.
Cartwright, A. J., Indianapolis, crayons.
STATE FAIR EXHIBITORS.

Cain, Miss Mollie, Brookville, afghan.
Call, John, Dublin, horses.
Cadwallader, John, Indianapolis, poultry.
Castenholtz, Richard, Indianapolis, poultry.
Caylor, H. M., Noblesville, horses.
Calkins, D. D., Indianapolis, dogs.
Campbell, Cora B., Danville, painting.
Carey, Marcus, Carmel, horses.
Carr, Elisha, Charlestown, horses.
Camplin, Miss Nettie, Indianapolis, embroidery.
Caylor, H. W., Noblesville, horses.
Caldwell, J. L., Lewisville, horses.
Catt, M. A., Westland, horses.
Carroll, Miss Belle, Indianapolis, afghan.
Casterline, Mrs. S. T., Indianapolis, embroidery.
Cannon, Miss Lizzie, Indianapolis, knit and crochet work.
Carnes, Z., Greenwood, horses.
Carter, Jerry, White Lick, poultry.
Cambern, Mrs. J. C., Rushville, rick rack.
Cage, C. B., Shelbyville, poultry.
Casey, Wm. F., Knightstown, horses.
Campbell, James, Harrison, Ohio, drills.
Case, J. I., Plow Works, Racine, Wis., plows.
Case & Willard, Battle Creek, Mich., engines.
Cannon, C. H., agt., Indianapolis, reapers and mowers.
Casterline, Mrs. Emma M., Indianapolis, embroidery.
Chandlee, A. G., Indianapolis, farm products.
Chandler, A., Indianapolis, engraver’s display.
Chicago Scale Co., Chicago, Ill., stock scale.
Chieftain Hay Rake Co., Canton, Ohio, hay rakes.
Champ, Frank, Dublin, anti-freezing force pumps.
Chandler & Taylor, Indianapolis, engines.
Chambers, P. B., Thornton, horses.
Child & Bradley, Indianapolis, Acme renovator.
Cherry, Morrow & Co., Nashville, Tenn., farm wagons.

Christian, W. F., Jr., Indianapolis, farm products.
Christian, W. F. & Sons, Indianapolis, cattle.
Chandler, Mrs. Josephine, Greensburg, embroidery.
Childs, Mrs. Maria, Indianapolis, pound cake.
Challenge Wind & Feed Mill Co., Batavia, Ill., wind engine.
Chapman, J. W. & S., Richmond, hogs.
Chapman, Page, Indianapolis, dogs.
Chandlee, Mrs. Rebecca, Indianapolis, silk mittens.
Christian, Harry, Indianapolis, poultry.
Cincinnati Commercial Gazette, Cincinnati, Ohio, newspaper.
Clark, J. G., Bridgeport, horses.
Clark, J. H. & Co., Indianapolis, chairs.
Clark, H. D., Indianapolis, cabinet photographs.
Clapp & Justice, Shelbyville, poultry.
Clark, I. N., Indianapolis, horses.
Clore, W. K., Trafalgar, poultry.
Clark, H. H., Covington, farm products.
Clark, E. G., Indianapolis, dogs.
Cleveland, J. T., Indianapolis, tubular iron fence.
Clark, Thomas, Beecher, Ill., cattle.
Clash & Ewing, New Albany, weather strip.
Columbus Buggy Co., Columbus, Ohio, buggies and carriages.
Cowles & Butts, Clifford, fence machine.
Conkline, Tait & Co., Decatur, Ill., check rower.
Coffin, Clarence E., Indianapolis, collection stamps.
Cook, T. R., Indianapolis, hoisting jacks.
Connorsville Buggy Co., Connorsville, buggies and carriages.
Cole, A. W., Door Village, sheep.
Colsher & Wright, Noblesville, poultry.
Cook & Morse, Raymonds, Ohio, sheep.
Cobb, L. W., Aurora, horses.
Coffin, Mrs. D. W., Indianapolis, crochet sacque.
Coleman, W. B., Thorntown, hogs.
Conde, H. T., Indianapolis, agricultural implements.
Cookerly, Miss Libbie, Bloomington, afghan.
Coble, L. P., Clayton, horses.
Coburn, W. H., Indianapolis, horses.
Council, Miss Belle, Indianapolis, crochet hood.
Contant, Mary, Crawfordsville, crochet hood.
Combs, Mrs. Mulberry, hemstitching.
Conder, Mrs. Elizabeth, Indianapolis, knitted spread.
Covart, Abe, Mooreland, horses.
Coulter, W. R., Vincennes, watermelons.
Cox, A., White Lick, honey.
Combs, Miss Jennie, Zionsville, flowers.
Counts, C. M. & Co., Indianapolis, butter and cheese.
Comstock, H. A., Indianapolis, dogs.
Cook, W. M., Glenwood, horses.
Cosegrove, John H., Crawfordsville, horses.
Coburn, W. H., Indianapolis, horses.
Cox & Gauge, Carthage, cattle.
Contant, Nellie, Carthage, patchwork.
Cobb, Mrs. S. H., Indianapolis, cattle.
Cox, Francis A., White Lick, honey in comb.
Cooper, Mrs. W. H., Indianapolis, steel engraving.
Cory, F. M., Mooresville, poultry.
Cobb, John, Indianapolis, cattle.
Cooper, Mrs. F. M., Indianapolis, poultry.
Coates, Miss Hattie, Indianapolis, painting.
Conner, Mary A., Null's Mills, cake.
Conden, Mrs. Indianapolis, tidy.
Combs, Miss Maggie, Mulberry, buttonholes.
Corm, Mrs. Harriet, Indianapolis, quilt.
Collins, S. H., Indianapolis, dogs.
Condit, Mrs. A., Muncie, feather work.
Coffin, Miss Minnie A., Indianapolis, embroidery.
Conger, Sid, Flat Rock, poultry.
Cox, J. D., Columbus, poultry.
Craig, A. D., Indianapolis, farm products.
Craft, H. W., Indianapolis, dogs.
Crosby, R. M., Indianapolis, wind engine.
Crist, Mrs. L., Stratford, rug.
Crist, Mrs. M. E., Crawfordsville, bread.
Crulman, Indianapolis, poultry.
Crisler, Mrs. E. J., Newport, flowers.
Crawford, J. L., Oakland City, cattle.
Crisler, Nora, Greensburg, tidy.
Cooks, R. N., Waterloo, apples.
Crouse, Guy G., Union City, horses.
Crawford, Miss Dora, Rushville, feather edge.

C. Spring Cart Co., Indianapolis, buckboards and road carts.
Cummings, Miss Fannie, Indianapolis, machine work.
Custins, J. M., Edinburg, farm products.
Cummins, Mrs. M. C., Brownstown, embroidery.
Cutsinger, Geo., Edinburg, horses.
Cyle, Geo., Kokomo, portable bath tub.

D.

Danley, Mary B., Indianapolis, poultry.
Darling, Mrs. C. B., Indianapolis, pound cake.
Dayton Plow Co., Dayton, Ohio, plows.
Daniels, R., Waterloo, apples.
Dans, Mrs. John, Brightwood, velvet quilt.
Darnell, C. F., Indianapolis, cattle.
Danmeyer's Clothes Washer Co., Kansas City, Mo., clothes washer.
Darre, Jason, Indianapolis, painting.
Darling, Wm., Old Augusta, farm products.
Darling, Miss Gertie, North Indianapolis, buttonholes.
Davidson, Mrs. J. N., Whitesville, buttonholes.
Davidson Kate, Indianapolis, tidy.
Deiner, August, Indianapolis, monumental display.
Deming, Mrs. C. O., Indianapolis, drawn work.
Dewey, Miss Jennie B., Indianapolis, rug.
Deitz, Theodore, Indianapolis, horses.
Dewolf, Mrs. J. W., Indianapolis, wood carving.
Demoss, A. J., Noblesville, sawing machine.
Deutcher, H. P., Hamilton, Ohio, soil pulverizer.
Detrich, Mrs. M., Indianapolis, millinery.
Deere, Manson & Co., Moline, Ill., plows.
DeSouchet, Mrs. A. M., Indianapolis, drawn work.
Deering, Wm. & Co., Chicago, Ill., reapers and mowers.
Demont, J. E., Noblesville, hay rake and loader combined.
Dickson, W. C., Indianapolis, dogs.
Dille, Mrs. C., Greensburg, knit socks.
Divine, C. L., Indianapolis, photograph enlarging.
Diggs, Mrs. W. P., St. Louis, Mo., tatting.
Diamond, Mrs. S. J., Indianapolis, job printing.
Dillon Bros., Normal, Ill., horses.
Dickerson, Buck, Greensburg, horses.
Dixon, Robert, Henderson, Ky., horses.
Dickerson, C. N., North Vernon, horses.
Dickerson, J. H., Greensburg, horses.
Dillon, Ellis E., Normal, Ill., horses.
Dinsmore, Samuel, Bloomington, grapes.
Dixon, Mrs. M. B., Indianapolis, agricultural wreaths.
Dillon, Mark, Pittsboro, poultry.
Donaldson, Atkins & Amos, Montezuma, Climax fence post.
Downey, Henry, Kokomo, horses.
Dougherty, Earnest L., Indianapolis, dogs.
Doherty & Wiley, Indianapolis, honey.
Domestic Sewing Machine Co., Chicago, Ill., sewing machine work.
Doherty, J. E., Lotus, dogs.
Downey, Mrs. Lena, Indianapolis, cake.
Donnan & Off, Indianapolis, stoves and ranges.
Door Prairie Live Stock Association, Door Village, horses.
Dorsey, A. E., Indianapolis, poultry.
Driesbaugh, Miss Cora, Indianapolis, counterpane.
Dungan, S. W., Franklin, cattle.
Donovan, G. W., Indianapolis, poultry.
Dunning, Mrs. Artie, Marion, crochet cap.
Dusan, Miss Grace, Indianapolis, Geology and Natural History.
Dulin, John A., Whitestown, horses.

Eberhardt, G. W., Indianapolis, horses and dogs.
Eckert, Wm., Indianapolis, dogs.
Eckert & Co., Indianapolis, warm air furnace.
Eden, Miss Sallie, Indianapolis, painting.
Edmonds, A. R., Indianapolis, dogs.
Edwards, Clara, Mapleton, farm products.
Egan & Co., Cincinnati, Ohio, wood working machinery.
Ehrenhardt, Mrs. H., Terre Haute, feather-edge specimen.
Eichoff, Henry, Indianapolis, nursery stock.
Elder, Dr. E. S., Indianapolis, old clock.
Elder & Co., Indianapolis, stoves and ranges.
Eldridge, E. H. & Co., Indianapolis, electric window cleaner.
Elliott, E. E., Knightstown, hogs.
Elliott & Reed, Richmond, power fence machine.
Elder, W. E., Indianapolis, furniture display.
Ellwanger & Son, Haughville, farm products.
Eller, J. W., Fisher's Station, hogs.
Elevator Ditching Mach. Co., Newark, Ohio, ditching machine.
Elston & Tobin, Indianapolis, poultry.
Elston, Laura H., Indianapolis, relics.
Elliott, Miss Clara, Lebanon, crochet tidy.
Emmons, Mrs., Carthage, crochet skirt.
Emerson, M. E., Clayton, painting.
Empire Drill Co., Shortsville, N. Y., drills.
Ennis, Mrs. Mabel, Indianapolis, French decorative work.
Ennis, W. A., Clermont, apples, poultry and farm products.
Ennis, Sanford, Indianapolis, farm products.
Ennis, Oliver, Indianapolis, farm products.
Ennis, Robert, Indianapolis, farm products.
Engle, Mrs. A. C., Indianapolis, calico quilt.
Ensley, Allen W., Edinburg, horses.
Ertel, Geo. & Co., Quincy, Ill., hay press.
Essex, Hugh, Zionsville, poultry.
Eureka Mower Co., Utica, N. Y., mower.
Evarts, J. A. & Co., Indianapolis, farm products.
Evans, A. C., Springfield, Ohio, triple harrow.
Ewer & White, Battle Creek, Mich., farm fence.
Eyman, Miss Mary, Indianapolis, embroidery.

F.

Fairfield, Mary P., Indianapolis, Geol. and Nat History.
Fay, Mrs. E. E., Princeton, raw silk.
Farnsworth, Mrs. C. F., Indianapolis, dress-making.
Faily, J. P., Rushville, horses.
Farbach, C. W., Indianapolis, dogs.
Fairbanks, H. C., Indianapolis, threshers.
Farrow, J. A., Oakland, Ill., horses.
Farmers' Friend Manufacturing Co., Dayton, Ohio, harrows.
Fate & Freeze, Plymouth, tile and brick machine.
Farmer, Geo., Mattoon, Ill., horses.
Famous Manufacturing Co., Quincy, Ill., hay press.
Fairweather & Mason, McLane, Pa., cattle.
Fender, Ed, Edinburg, horses.
Featherston, Jos., Credit P. O., Ontario, Canada, hogs.
Fear, Mrs. E. E., Sheridan, crochet hood.
Fear, Lizzie A., Sheridan, crochet hood.
Fellows, C. M., Manchester, sheep.
Fitzmaurice, Tom, Columbus, horses.
Fisher, M. O., Dayton, Ohio, sliding window blind.
Fisher & Gibson, Canada, horses.
Fitch, Mary D., Oakwood, embroidery.
Fink, Miss Lena, Crawfordsville, painting.
Fitch, L. S., South Bend, horses.
Finch, D., Oxford, Ohio, hogs.
Finch, Mrs. M. M., Indianapolis, bread.
Fisher, Mrs. Cora E., Crawfordsville, painting.
Fletcher & Thomas, Indianapolis, brick machine.
Flint & Walling Manufacturing Co., Kendallville, wind engine.
Flemming, Samuel O., Terre Haute, horses.

Flanner, Mrs. O. A., Indianapolis, relics.
Flick, Mrs. Mary J., Lawrence, apples and farm products.
Forbes, L. W. & Bro., Knightstown, sawmill.
Fowler, W. R., Lafayette, polar creamer.
Foland, V., Indianapolis, traversing machine.
Foos Manufacturing Co., Springfield, Ohio, grinding mills.
Fouke, Mrs. E. A., Paris, Ill., embroidery.
Fowler, Mrs. A. S., Indianapolis, hair goods.
Foland, Valentine, Indianapolis, traversing machine.
Fox, H. C., New York, Fox sad iron.
Faust, Miss Kate, Indianapolis, crochet lace.
Fox, Hattie K., Indianapolis, bread.
Fort, John W., Indianapolis, horses.
Fohl, B. A., Indianapolis, florist.
Foster, Clarence, Indianapolis, dogs.
Fowler, Mrs. Helen, Indianapolis, embroidery.
Ford, Mrs. N. A., Indianapolis, bread.
Ford, Laura, Indianapolis, paper box.
Foulke, Mrs. E. A., Paris, Ill., silk quilt.
Fox, Mrs. Jacob, Indianapolis, embroidery.
Fritsch, Miss Etta, Indianapolis, canned fruit.
Frick, Phil J. & Co., Indianapolis, stoves and ranges.
Frey, Sheckler & Hoover, Bucyrus, Ohio, Duplex engines.
Freeny & Ferrill, Indianapolis, stoves and ranges.
Freeman, Stephen & Sons, Racine, Wis., broadcast sower.
Frost, Charles, Cambridge City, horses.
Fred, W., Lawrence, farm products.
Freeman, J. M., Bicknell, dogs.
Fravell, Mrs. Geo. R., Marion, embroidery.
Fry, Mrs. Eliza, Acton, jellies.
Fry, Mary, Indianapolis, patchwork.
Frazee, Geo., Indianapolis, poultry.
Freeman, John, Monticello, Ill., Geology and Natural History.
Fusull, Miss Anna, Indianapolis, crochet tidy.
Fuller, V. E., Hamilton, Canada, cattle.
Furnis, H. W., Indianapolis, Geology and Natural History.
Fulton, Mrs. N. E., Edinburg, farm products.
Gates, Miss Minnie, Indianapolis, repousse work.
Gault, Mrs. Cal, Zionsville, embroidery.
Gaffney, Miss M., Cleveland, Ohio, embroidery.
Gage, C. B., Shelbyville, poultry.
Gates, H. B., Indianapolis, poultry.
Gaar, Scott & Co., Richmond, threshers and engines.
Gall, Mrs. Ellen, Indianapolis, rag carpet.
Garretson Bros., Pendleton, cattle.
Gates, Mrs. A. B., Indianapolis, embroidery.
Gaylard, Mrs. John, Indianapolis, crochet lace.
Gardner, Mrs. L., Indianapolis, counterpane.
Gall, Albert, Indianapolis, carpets, rugs, wall paper.
Garinger, Benton, Washington C. H., Ohio, cattle.
Garver, R. H., Indianapolis, horses.
Gaston, Geo., Indianapolis, horses.
Gasper, Joe L., Indianapolis, dogs.
Geizer Manufacturing Co., Waynesboro, Pa., threshers and engines.
Geisy, Mrs. H. R., Columbus, silk mittens.
George, L. E., Noblesville, horses.
Geis, Mrs. Lizzie, Indianapolis, crochet sacque.
Geis, Miss Annie, Indianapolis, embroidery.
Gibson Ball Plow Co., Canton, Ohio, plows.
Gillette, Mrs. H. R., Indianapolis, rug.
Gilbert Bros., Plainfield, horses.
Gillson, Fisher, Canada, horses.
Gilmour, A. S. & Co., Greensburg, hogs.
Gifford, Geo. W., Tipton, horses.
Gilmore, Mrs. Eliza, Indianapolis, table cover.
Gibson, Mrs. Lucinda, Indianapolis, silk quilt.
Gillette, Mrs. C. H., Indianapolis, rug.
Glover, A. R. Clayton, improved water gap.
Gldewell, T. T., Traders' Point, horses.

Gorman, Miss Ella, Indianapolis, embroidery.
Gossett, Miss Katie, Indianapolis, painting.
Goulds & Austin, Chicago, Ill., agricultural implements.
Goodwin, J. S., Beloit, Kansas, cattle.
Gorby, S. S., Kyle, Geology and Natural History.
Gregg & Co., Trumansburg, N. Y., rakes.
Green, N. A., New Albany, Geology and Natural History.
Gresh, Mrs. Laura, Indianapolis, layer cake.
Grafty, Lawrence, Indianapolis, poultry.
Greenen, Chas., P., Indianapolis, ponies.
Green, G. K., New Albany, Geology and Natural History.
Green, Mrs. Chas. E., Indianapolis, counterpane.
Graves, S. T., Indianapolis, horses.
Green, A. C. & Co., Winchester, hogs.
Griffin & Lewis, Indianapolis, poultry.
Groves, Miss Sophia, Anderson, crochet and worsted mittens.
Graves, John S., Carmel, horses.
Groes, Wm., Lawrence, farm products.
Groves, Mrs. S., Anderson, embroidery.
Graydon, Alice, Indianapolis, drawing.
Grooms, T. C., Greencastle, apples.
Groenendyke, James, Middletown, washing machine.
Greene, Dr., Knightstown, horses.
Gray, Anna, Shelbyville, hand sewing.
Gray, Mamie C., Indianapolis, lustra painting.
Gresh, Mrs. A., North Indianapolis, white cake.
Gray, J. W., Indianapolis, miniature ship.
Gyser, Mrs. Logansport, table cover.

H.

Hanna, Josephine, Tapp, painting.
Hamlet Mrs. E., Indianapolis, painting.
Hammond, Miss Alma, Travers City, Mich., honey.
Hart, W. H., Indianapolis, dogs.
Hayes, E. K., Galon, Ill., force pumps.
Hartwell, J. H., Springfield, Ohio, iron grasp cement.
Haworth & Sons, Decatur, Ill., corn planter.
Haag, Mrs. W. M., Indianapolis, dogs.
Havens, Mrs. James, Indianapolis, rag carpet.
Harker, Mrs. J. B., Indianapolis, embroidery.
Hardcastle, Mrs. F. L., Indianapolis, embroidery.
Hays, Sol., Elizabethtown, Ohio, farm products.
Hall, Mrs. Sadie, Indianapolis, canned fruit.
Hay, Katie M., Indianapolis, bread.
Hardin, J. T., Sabine, horses.
Hay, Perry, Irvington, minerals.
Hawkins, Maude, Indianapolis, dressed doll.
Harmoning, Henry, Indianapolis, cattle.
Hand, Mary, Indianapolis, hair wreath.
Hartsock, Peter, Lawrence, horses.
Henry, Caroline, Indianapolis, painting.
Hammond, N. J., Indianapolis, horses.
Hall, Walter S., Thornville, horses.
Harcourt, J. R., New Augusta, hogs.
Hayes, Miss Maggie, Indianapolis, embroidery.
Haas, Mrs. Indianapolis, embroidery.
Hamilton, Mrs. Geo., Indianapolis, embroidery.
Haas, Lena, Madison, silk quilt.
Hastings, Mrs. L. E., Indianapolis, embroidery.
Haughey, T. P., Indianapolis, cattle.
Hazzlett, Mathew & Sons, Franklin, horses.
Hasselman, F. & L., Indianapolis, ponies.
Hardin, R. Y., Rushville, horses.
Harper, Miss E. A., Dayton, Ohio, painting.
Hay, Mrs. A. J., Indianapolis, bread.
Hanson, J. A., Indianapolis, horses.
Hale Bros., Shelbyville, poultry.
Hay A. R., Indianapolis, poultry.
Harlan, S. Alonzo, Indianapolis, dogs.
Hartman, W. H., Indianapolis, farm products.
Haag, Louis E., Indianapolis, dogs.
Hazelton, James, Indianapolis, horses.
Hasselman, W. J., Indianapolis, cattle.
Hanes, A., Terre Haute, horses.
Halderman, R., Carterburg, horses.
Hare, M. L., Fisher’s Switch, horses.
Hamilton, L. W., Sandusky, hogs.
Hawkins, Mrs. Geo., Indianapolis, painting.
Harvey, John H., Carmel, mules.
Hardwick, W., Danville, horses.
Hetz, Fred, Indianapolis, cakes and candies.
Hears, Dunn & Co., Peoria, Ill., corn planters.
Henley, M. C., Richmond, fence machine.
Helm, Mrs. Anna, Indianapolis, knitted hood.
Henderson, James, Indianapolis, poultry.
Henderson, Mrs. D. B., Lafayette, embroidery.
Heron, J. H., Lawrence, farm products.
Heilrich & Danley, Indianapolis, dump wagons.
Heron, Dr. A. P., Indianapolis, dental appliances.
Head, Manson, Zionsville, horses.
Henry, Miss Emma, Indianapolis, paper house.
Hewitt, Mrs. J. H., Chicago, Ill., table cover.
Hendricks, Dr. H. W. & Co., Indianapolis, galvanic belt.
Henn, Joseph, Indianapolis, tobacco tags.
Henderson, Wm., Indianapolis, horses.
Henrux, Miss Virginia L., Indianapolis, painting.
Heron, Mrs. H. M., Indianapolis, pickles.
Helms, G. N., McCordsville, hogs.
Heck & Powell, Walron, hogs.
Henderson, Mrs. Mary, Indianapolis, relics.
Hedrick, Miss Mary, Indianapolis, bread.
Henderson, Julius, Indianapolis, poultry.
Hefty, W., St. Joe, apples.
Hearthless, J. B. & Son, Knightstown, sheep.
Hendricks County Agricultural Society, North Salem, farm products.
Henn, Jacob, Redmond, Ill., cattle.
Hensley, L., Lawrence, horses.
Hirschheimer, A., La Crosse, Wis., self-adjusting harrow.
Hinshaw, A. S., Westfield, lifting jack.
High School pupils, Indianapolis, drawing.
Hill, B. F., Indianapolis, poultry and farm products.
Highley, D. F., Mier, poultry.
Hill, J. W., Sanborn, hogs.
Hicks, H. A., Indianapolis, dogs.
STATE FAIR EXHIBITORS.

Hilker, Henry, Indianapolis, florist.
Hines, Fletcher, Malott Park, poultry.
Hiatt & Berry, Spiceland, horses.
Hiatt, Clark, Knightstown, horses.
Hobblewaite, M., South Bend, sheep and hogs.
Hickman, Julia, Indianapolis, calico quilt.
Hiatt, Miss L. J., Crawfordsville, flowers.
Hornbuckie, G. H., Glenn Valley, strainer.
Howland & Johnson, Indianapolis, park and spring wagons.
Hoover, H. H., Macy, farm gate.
Hornes, G. W., Huntingtown, portable fence.
Hopper, Miss Daisy, Indianapolis, painting.
Hoffman, J. M., Indianapolis, display wagons.
Hoeschur, Mrs. S. K., Indianapolis, calico quilt.
Hoover & Gamble, Miamisburg, Ohio, harvesters and mowers.
Hough, O., Indianapolis, dogs.
Hoover, J. B., Indianapolis, farm products.
Hoosier Mfg. Co., Indianapolis, harvesters and mowers.
Hough, Court, Indianapolis, dogs.
Homer, Dr. R. H., Knightstown, knit hood.
Holler, C., South Bend, farm products.
 Hodson, Mrs. Sarah, Anderson, silk mittens.
Hough, Mrs. A. E., Indianapolis, embroidery.
Hopkins, Mrs. Hattie, Columbus, knit shirt.
Howe, W. P., Princeton, farm products.
Howe, Miss Mollie, Princeton, embroidery.
Howe, Walter J., Muncie, crochet work.
Howe, Mrs. J. E., Muncie, Afghan.
Howe, Wm. D., Irvington, fret sawing.
Hose, J. E., Indianapolis, horses.
Hofenberth, Miss Katie, Indianapolis, crochet lace.
Horton, Miss Rose, Marion, tatting.
Howland, Mrs. E. M., Howland, painting.
Holloway, Mrs. Maud, Knightstown, drawn work.
Howe, J. B., Kentland, poultry.
Howell, Arthur, Indianapolis, poultry.
Holler, Philip, Indianapolis, dogs.
Howell, W. M., Edinburg, poultry.
Hood, H. P., Indianapolis, type-writer.
Hoover, John, Spiceland, horses.
Hoag & Elliott, Longansport, horses.
Hogshire, J. A., Lebanon, horses.
Howard, Mrs. S. J., Indianapolis, bread.
Hunt, Wilson & Sons, Darlington, horses.
Hunt, Mrs., Laporte, stockings.
Humphrey, Hewey S., Indianapolis, shells.
Huston, J. N., Connersville, horses.
Huston & Fort, Indianapolis, horses.
Hutchinson, C. L., Indianapolis, carpets, rugs, wall paper.
Huey, M. S. & Son, Indianapolis, grates, hearths, fenders.
Hughes, Cope & Hunter, Brownsburg, horses.
Hule, A. S., Zionsville, farm products.
Hughes, Mrs. Will, Indianapolis, crochet cap.
Hughes, Thomas, Laporte, horses.
Hughes, Mrs. E., Indianapolis, pair socks and silk mittens.
Huff, A. M., Oakland, horses.
Huey, Mrs. C. E., South Bend, upholstered chair.
Huston, Thomas, Kokomo, improved rail fence.
Huber Engine Works, Marion, O., plain engine.
Hylton, Mrs. Elizabeth, Tilden, woolen stockings.
Hyland, E. N., Rensselaer, horses.
Hyde, Clark, Knightstown, horses.

I-

Imbler, John, Zionsville, horses.
Ingersoll, Mrs Laura, Indianapolis, stuffed birds.
Ingraham, Lena, Indianapolis, bread.
Indiana Wire Fence Co., Crawfordsville, barbed wire.
Ingraham, Mrs. E. M., Indianapolis, painting.
Ingraham, Mary, Indianapolis, painting.
Indiana Blooded Stock Co., Indianapolis, cattle.
Indianapolis News, Indianapolis, newspapers.
Indianapolis Journal Co., Indianapolis, newspapers.
Indiana Farmer, Indianapolis, newspaper.
Iowa Hereford Cattle Co., Indianola, Iowa, cattle.
Irwin, W. D., Danville, sheep.
Irwin, Ollie, Indianapolis, embroidery.
Irwin, J. J., Indianapolis, millinery.
Irwin, Mrs. W. G., Irvington, sofa pillow.
Irwin, Mrs. L., Indianapolis, dressmaking.
Irvin, Mrs. W. H., Marion, afghan.

J.

Jackson, Mrs. Nancy, Knightstown, quilt.
Jackson, Ham., Mooresville, horses.
Jackson, Allen, Plainfield, horses.
Jackson & McKee, Mooresville, horses.
Jackson, Mrs. A. G., Vevay, crochet and knit work.
Jackson, Hick, Mooresville, horses.
Jackson, Geo., Beech Grove, dogs.
Jackson, J. H., Kokomo, horses.
Jackson, Josie, Vevay, patchwork.
Jay, John, Pleasant Hill, Ohio, portable fence.
James, Lea M., Greensborough, horses.
Jennings, M. J. & Co., Indianapolis, fence machine.
Jeffries C., Westfield, horses.
Johnson, Mrs. Geo. W., Aurora, butter.
Johnson, Jesse T., Indianapolis, spoke and felloe machine.
Johnson, Mrs. P. C., Irvington, portable wardrobe.
Johnson, Samuel S., Fisher's Station, horses.
Johnson, Mrs. Ray P., Edwardsport, point lace.
Johnson, Frank H. & Co., South Bend, cattle.
Johnson, C. H., Rushville, poultry.
Johnson, Robert, Castleton, Geology and Natural History.
Johnson, Sylvester, Irvington, farm products.
Johnson, Mrs. M. A., Indianapolis, point lace.
Johnson, Mrs. Robert, Castleton, jellies.
Johnson, Mrs J. T., Indianapolis, bread.
Jones, W. M., Rushville, horses.
Jones, W. H., Liberty, hogs.
Jones, B. F., Indianapolis, hogs.
Jones, Mrs. Eliza, Sandborn, cotton socks.
Jordan, John, Remington, hogs.
Jones, J. B. & Bro., Yorktown, hogs.
Jordan, Arthur, Indianapolis, butter and cheese.
Judson, Jennie S., Paris, Ill., crochet and knit work.
Julian, Mrs. J. F., Indianapolis, painting.

K.

Kahn & Co., Indianapolis, display of clothing.
Kahn, S. W., Kokomo, horses.
Kattenhorn, John, Indianapolis, horses.
Kauffman Buggy Co., Miamisburg, Ohio, buggies.
Kellogg, Mrs. N. G., Lebanon, knit shirt.
Kemper, Mrs. E. J., Muncie, embroidery.
Kennedy, Jacob & Co., Montclair, hogs and poultry.
Keckley, J. L., Maysville, Ohio, farm products.
Kern, Mrs. A. M., Indianapolis, calico quilt.
Kensler, Rosalind, Indianapolis, painting.
Keen, Miss Mary, Indianapolis, embroidery.
Keeney, Moses, Danville, horses.
Keefe, Miss Kabie, Indianapolis, counterpane.
Kelley, M. J., Jacksonville, Fla., Florida goods.
Kern, Mrs. E. J., Frankfort, crochet lace.
Kennedy, Mrs. Margaret, Shelbyville, worsted quilt.
Keen, Lizzie, Frankfort, sofa pillow.
Ketcham, Miss Sue, Indianapolis, painting.
Ketcham, W. A., Indianapolis, cattle.
Kerkles, J. B., Knightstown, sheep.
Keith, Mrs. Alice B., Delphi, painting.
Keller, E. F., Indianapolis, dogs.
Kenyon, C. E., Indianapolis, oil burner.
King, G. F., Terre Haute, farm products.
STATE FAIR EXHIBITORS.

Kirtland, Mrs. Eva, New Albany, embroidery.
Kimberlin Manufacturing Co., Indianapolis, breaking plow.
Kinsley, A. S., Indianapolis, butter and cheese.
King, W. L., Manilla, horses.
King Drill Co., Logansport, fertilizer.
Kistner, Miss Anna, Indianapolis, embroidery.
Kirk, Mrs. E. B., Shelbyville, knit shirt.
Kiersted, Mrs. L., Indianapolis, embroidery.
Kimber, Hattie, Indianapolis, crochet tidy.
Kinder, Miss Mollie, Kokomo, bread.
Klingler, W. A., Zionsville, poultry.
Klingensmith, Simeon, New Augusta, farm products.
Knowles, Wm., Rockville, kitchen cabinet.
Knapp, Laura, Irvington, lambrequins.
Koerner, C. C., Indianapolis, fancy penmanship.
Koppenhofer, E. J., Shinrock, Ohio, poultry.
Kregelo & Railsback, Indianapolis, fence machine.
Kramer, Mrs. Katie, Indianapolis, child’s dress.
Kyle, Mrs. Mary, Indianapolis, bread.

Lane, I. N., Zionsville, poultry.
Larger, L. E., Indianapolis, butter and cheese.
Lane, S. H., Indianapolis, honey and farm products.
Lafever, James, Indianapolis, iron seat chair.
Lennon, Grace, Indianapolis, rick-rack.
Lean, R. & Son, Mansfield, Ohio, all steel harrow.
Lefebre, Mrs. Lou, Indianapolis, wood carving.
Leet, Mrs. S. E., Indianapolis, painting.
Lease, Jessie A., Blue Grass, automatic gate.
Lewis, Anna D., Indianapolis, dogs.
LePage, Mrs. John P., North Indianapolis, flowers.
Lee, Mrs. S., Indianapolis, quilt.
Leach, J. C., Brightwood, farm products.
Lederman, Mrs. Rebecca, Indianapolis, crochet lace.
Levi, Thomas, Noblesville, horses.
Lennon, Carr, Clarksville, horses.
Lewis, W. D., Pittsboro, horses.
Lewis, T., Plainfield, dogs.
Leffer, A. B., Friendwood, farm products.
Levi & Munter, Indianapolis, horses.
Levering, Mrs. C. W., Paris, Ill., crochet tidy.
Leathers, Mrs., Brightwood, hair goods.
Little Giant Power Converter Co., Cincinnati, Ohio, attachment to wind engine.
Linzer, Jacob, Dayton, Ohio, grapes.
Lillie, Mrs. Jessie H., Indianapolis, crochet lace.
List, Geo., Oakland, horses.
Lloyd, Jos., Greencastle, horses.
Lloyd, Mugg & Co., Center, hogs.
Lloyd, A., Indianapolis, florist.
Loucks, Mrs. James, Indianapolis, bread.
Lowden, J. D., Lawrence, horses.
Loomis, Arthur, Jeffersonville, etching display.
Lock, W. A., Remington, poultry.
Lout, C. F., Maywood, horses.
Loder, Alfred, Lewisville, horses.
Londer, Mana, Lawrence, carpet.
Lowden, F. M., Lawrence, horses.
Lock, J. W., Remington, hogs.
Lockhart, R. M. & W. C., Waterloo, apples.
Board of Agriculture.

Ludlow, J. R., Irvington, farm products.
Ludington, Mrs. Julia, Indianapolis, painting.
Lupton, Miss Ella, Indianapolis, crocheted hood.
Lynn, Thomas, Jerseyville, horses.

M.

Macuen, Mack, Traders' Point, melons.
Martin, Chas., Corydon, apples.
Marsh, Samuel, Bloomingdale, farm products.
Maxam, Mrs. S. R., Princeton, knit spread.
Maxam, E. Rollin, Princeton, Geology and Natural History.
Matthews, Mrs. Mary, Arlington, hem-stitching.
Mason, Mrs. M., Indianapolis, sofa pillow.
Martin, Miss Susie, Indianapolis, macramé lace.
Mahurin, M. L., Indianapolis, French decorative work.
Malloy, James, Rensselaer, horses.
Maillard, Mrs. A., Indianapolis, counterpane.
Mann, J. E., Indianapolis, horses.
Marvel, John, Royalton, horses and farm products.
Marvel, O. H., Royalton, horses.
Marvel, Mrs. Anna L., Royalton, maple molasses.
Maxwell, A. S., Martinsville, horses.
Mapes, C. F., Indianapolis, horses.
Maze, W. A., Sharpsville, hogs.
Martindale, C., Indianapolis, dogs.
Matthews, O. W., Indianapolis, poultry.
Madison, P. T., Indianapolis, dogs.
Mallory, Joshua, Raleigh, horses.
Mast, Poos & Co., Springfield, Ohio, chain pumps.
Makepeace, A. M., Indianapolis, force pumps.
Martin, Andy, Muncie, hogs.
Mathews, Mrs. E. P., Indianapolis, rug.
Mafee, Miss, Indianapolis, toilet mats.
Mathews, Miss Retta, Arlington, pillow shams.
Matier, Mrs. Phil., Indianapolis, rag carpet.
Maxam, Nettie, Princeton, hand sewing.
Mathews, Mrs. E. W., Indianapolis, sofa pillow.

Machine & Steel Pulley Co., Indianapolis, fence machine.
Mann, John P. & Co., Rockford, Ill., mower.
Macy & Gilbert, Straughns, fence machine.
Mack, M., Oaklondon, farm products.
Mathews, Mrs. J. H., Indianapolis, knit socks.
Marchland, C. F., Larwill, cloid crusher.
Martin, Mrs. Rosie L., Cape Girardeau, Mo., embroidery.
McBee, Wm., Dry Ridge, Ky., cattle.
McCrea, Mrs. S. P., Shelbyville, hem-stitching.
McCarty, Mrs. Jane, Brookville, lace.
McCord, H., McCordsville, hogs.
McClure, Geo. W., Indianapolis, poultry.
McCheeney, Lee, Indianapolis, drawing.
McCurdy, Mrs. Juliette, Indianapolis, fig cake.
McCune, Grace, Indianapolis, fancy cake.
McCleary, A. M., Indianapolis, horses.
McCleintock, R. M., Indianapolis, dogs.
McCoy, J. T., Madison, horses.
McColley & Baker, Toga, hogs.
McCory, H. D., Evansville, horses.
McCarty, T. F., Fisher's Switch, horses.
McCune, Mrs. Theo., Indianapolis, bread.
McDonald, Mrs. J. S., New Albany, table cover.
McDonald Mattie, Indianapolis, paper flowers.
McDowell, Dr. J., Bruceville, dogs.
McFarlan, J. M., Southport, farm products.
McFarland, Bettie, Southport, crochet work.
McGuire, Robert, Indianapolis, tobacco tags.
McIntyre, Mrs. D. L., Indianapolis, mittens.
McKierman, Mrs. M., Indianapolis, millinery.
McKee & Jackson, Mooresville, horses.
McKenzie, Mrs. M., Anderson, shirt.
McKenzie, Miss Anna, Indianapolis, embroidery.
McKay, David, Fort Wayne, horses.
McLeod, Miss Ethel, Indianapolis, jellies.
McLaughlin, Sheldon & Co., Owatonna, Minn., corn sheller.
McLaughlin, Mrs. Ann., New Ross, rug.
McLeod, Mrs. A. D., Indianapolis, knit and crochet work.
McNamara, J. W., Sugar Creek, horses.
McOuat, R. L., Indianapolis, dogs.
McVey, F. C., Danville, horses.
Meeks, James W., Muncie, farm products.
Mettler, R., Indianapolis, horses.
Mears, Miss Jennie, Paris, Ill., embroidery.
Merrifield, Chas. E., Springfield, Ohio, straw stacker.
Meal, A. H., Indianapolis, hay press.
Medicus, Mrs. Hattie, Lafayette, crochet lace.
Melbourne, Mrs. Lizzie, Indianapolis, crochet lace.
Meilner, Moses, Leesburg, Ohio, ditching machine.
Mayer, Chas. & Co., Indianapolis, fancy goods.
Means, Mrs. Harry, Pleasant View, wool stockings.
Merriman, R., Lawrence, horses.
Mettier, Miss Leone E., Indianapolis, painting.
Merrill Pump Co., Indianapolis, force pumps.
Michael E., New Augusta, horses.
Miller, C. H., Indianapolis, dogs.
Mills, Miss Cenie, Ladoga, pillow shams.
Mitchell, Edward V., Martinsville, horses.
Miller, Albert S., Crawfordsville, horses.
Mitchell C. J., Martinsville horses.
Mitchell, J. V., Martinsville, horses.
Middleworth, Mrs. Wm., Indianapolis, fig cake.
Millard, Cal., Indianapolis, horses.
Michigan Stove Co., Detroit, Mich., stoves.
Middletown Buggy Co., Middletown, Ohio, buggies and carriages.
Minneapolis Harvester Works, Minneapolis, Minn., harvester and binder.
Milwaukee Harvester Works, Milwaukee, Wis., harvester and binder.
Monroe County Agricultural Society, Bloomington, farm products.
Moore, Joseph A., Indianapolis, cattle.
Miller, Mrs. E. W., Indianapolis, woolen stockings.
Morbach, Peter, Indianapolis, dogs.
Moulton, Mrs. S. W., Shelbyville, fruit.
Montgomery, Mrs. W. S., Noblesville, bread.
Morgan, A. W. & Son, Indianapolis, well augur and earth elevator.
Moore, James, Indianapolis, horses.
Moore, John S., Plainfield, horses.
Morris, E. K., Indianapolis, poultry.
Monroe, Mrs. A. Ross, Indianapolis, tapestry work.
Morgan, Miss Belle, Indianapolis, painting.
Moore, Mrs. Stella, Indianapolis, bread.
Monroe, Mrs. Janet M., Indianapolis, embroidery.
Morner, Mrs., Shelbyville, white quilt.
Morrison, Mrs. C., Indianapolis, silk stockings.
Montgomery, Miss Libbie, Indianapolis, embroidery.
Moore, Geo. R., Anderson, feed mill.
Model Clothing Co., Indianapolis, display of clothing.
Mosely, O., Peru, fence machine.
Moorehart, Mrs. Mary, Logansport, Geol. and Nat. History.
Morgan, Miss Laura L., Terre Haute, painting.
Moline Wagon Co., Moline, Ill., farm wagon.
Mount, Roots & Co., Connersville, farmers' friend churn.
Moody, J. C., Lynn, Champion churn.
Montgomery, Chas., Indianapolis, farm products.
Murphy, Mrs. C. A., Connersville, knit and crochet work.
Mintz Bros., Mohawk, hogs.
Muir, Mrs. S. A., Indianapolis, knit and crochet work.
Muir, Mamie, Indianapolis, fancy cake.
Muchmore, Gertrude P., Shelbyville, patchwork.
Munson Bros., Indianapolis, lightning rod points.
Munson, A. J., Indianapolis, lightning rods.
Mugg & Seagrave, Center, hogs.
Muzzy's Starch Co., Elkhart, starch.
Murphy, A. F., Logansport, farm products.
Myers, T. E. & Bro., Ashland, Ohio, force pump.
Myers, B. S., Crawfordsville, poultry.
Myers, J. F., Rock Lane, horses.

N.

Newcomb, Miss Letta, Irvington, painting.
Newark Machine Co., Columbus, Ohio, warehouse mill.
New York Steam Dental Co., Indianapolis, dental display.
Neff, James, Lebanon, horses.
Newhouse, Mrs. Lizzie, Lawrence, chocolate cake.
Neal, Emma, Marion, lace.
Neal, Cyrus W., Marion, poultry.
Newton, Anna, Pontiac, Mich., sheep.
Neighbors, Miss Fannie, Indianapolis, type writing.
Nickey, Mrs. Hannah, Edinburg, worsted quilt.
Nichol, Mrs. J. L., Chicago, Ill., embroidery.
Nicholson, W. C., Indianapolis, horses.
Nissler, O. L., Indianapolis, plows and cultivators.
Nixon, Cyrus T., Greencastle, sheep.
Nicolaas, Shepherd & Co., Battle Creek, Mich., traction engine.
Nickum, C. W., Indianapolis, cake ornaments.
Northeastern Indiana Agricultural Association, Waterloo, fruit.
Noble, F. W., Indianapolis, farm products.
Noe, Fletcher M., Indianapolis, Geol. and Nat. History.
Norris Bros., Rushville, corn drill.
Noe, Mrs. A. M., Indianapolis, upholstered chair.
Norton, W. C., Aldenville, Pa., hogs.
Nordyke & Marmon Co., Indianapolis, mill and bolting machines.

Nolan, Madden & Co., Rushville, tile and brick machine.
Norris & Grant, Pittsburg, Ky., horses.
North, Mrs. Kate, Crawfordsville, white quilt.
Norwood, J. A., Southport, farm products.
Noonan, T. H. & Co., Indianapolis, glove cleaner.
Nye, Ben T., Indianapolis, folding top spring wagon.

O.

Oberly, Amos, Indianapolis, Rice's science of music.
Oberly, Dollie, Indianapolis, painting.
Ohio Rake Co., Dayton, Ohio, pulverizing harrow.
Ohio Farmer, Cleveland, Ohio, newspaper.
O'Key & Wandell, Indianapolis, soil pulverizer.
Oliver, Mrs. Dr., Indianapolis, painting.
Osborn Bros., Ashland, Ohio, straw stacker.
Over, Ewald, Indianapolis, road plow.
Owen, Chas., North Indianapolis, fence machine.
Owen, Mrs. M. F., Indianapolis, crocheted buttons.

P.

Payne, Miss Emma, Indianapolis, afghan.
Patterson, C. H., Indianapolis, horses.
Parker, R. R., Indianapolis, gent's furnishing goods.
Parker, Lloyd, Pittsboro, horses.
Parish, Mrs. A. W., Indianapolis, maple molasses.
Pauley, Wm H., Greenfield, horses.
Partlow, Mrs. D. K., Indianapolis, painting.
Parker, K. R., Indianapolis, florist.
Patterson, Walter, Indianapolis, horses.
Parker, W. W., Indianapolis, horses.
Parker, Mrs. S. W., Indianapolis, painting.

Patterson, Harry G., Indianapolis, horses.

Parks, Mrs. Kate, South Bend, afghan. Parker, J. B., Indianapolis, engines.


Parrish, Mrs. Maria, Indianapolis, quilt. Pendleton, Mrs. A. D., Indianapolis, embroidery.

Peterson, Mrs. B., Indianapolis, hand-made lace. Pearson, Geo. C., Indianapolis, musical instruments.

Pearce, Thomas, Indianapolis, fancy chair. Perry, J. M., Columbus, horses.


Pitcher, J. M., Sugar Creek, traction engine. Pierce, Thomas, Indianapolis, novelty swing.

Pitcher, F. M., Casstown, Geology and Natural History.

Pinney, Mrs. Geo. W., Petersburg, crochet and knitwork.


Plummer, Miss, Indianapolis, crochet linen tidy. Porch & Steigelman, Spiceland, farm fence.

Prier, Geo., agt. Indianapolis, plows. Porter, J. E., Ottawa, Ill., straw stacker.

Potter, W. H., Indianapolis, photographs.


Pollard, Mrs. E., Ben Davis, lambréquin.

Porter, Ed. D., Indianapolis, cattle. Post, Mrs. M., Shelbyville, crochet and knit work.

Powell, Mrs. J. J., Irvington, flowers. Porter, Wm., Indianapolis, washing machine.

Power, J. T., Indianapolis, coffee display.

Powell, B., Waldron, cattle.

Pray, Mary, Indianapolis, fancy cake.

Prentice, D. S., South Bend, baby jumper.

Prudden, W. K., Indianapolis, horses.

Prier, Anne, Garfield Place, embroidery.

Prince, Wm., Raleigh, horses.

Privett, Uriah & Bro., Greensburg, sheep.

Prairie Farmer, Chicago, Ill., newspaper.

Presser, Geo., Indianapolis, horses.

Pritchard, J. M., Jolietville, horses.

Puett, S. P., Rockville, horses.

Pugh & Johnson, Indianapolis, washing machine.

Pugh & Mau, Indianapolis, window balance lock.

Pugh & Butler, Indianapolis, automatic clutch.

Purdue University, Lafayette, educational exhibit.

Pyle, Mrs. Lydia, Indianapolis, calico quilt.

Quick, Gertrude, Brookville, painting.

Quick, T. J., Jacksonville, Florida, persimmons.

Raab, Peter, Dumont, cattle.

Railsback, Mrs. Chas., Indianapolis, embroidery.

Raymond & Price, Dayton, Ohio, wheel tempering machine.

Rawlins, Leroy, Danville, farm products.

Rayl, A. F., Indianapolis, horses.

Reed, Chas. M., Connersville, fence machine.

Reid, K. G., Indianapolis, Geology and Natural History.

Reeves, O. D. & Bro., Richmond, fence machine.


Reeves, Ernest, Marion, poultry.
Reed, Miss Fannie, Nulltown, point lace.
Reger, Mrs. A. C., Indianapolis, crazy quilt.
Ready Fire Extinguisher Co., Chicago, Ill., Ready Fire Extinguisher.
Reigger, Arnold, Indianapolis, Geol. and Nat. History.
Reeves & Co., Columbus, Ohio, traction engine.
Renick, Abraham & Bros., Clintonville, Ky., cattle.
Remy, A. C., Indianapolis, horses.
Riegger, Mrs. C., Indianapolis, tailoring.
Restiss & Rayfield, Chicago, Ill., safety hollow-ware.
Reinert, Anna, Indianapolis, toilet set.
Reiman, Chas., Indianapolis, florist.
Reveal, T. M., Clermont, hogs.
Rexford, Mrs. Annie, Indianapolis, painting.
Richardson, 'Miss Ida, Delhi, Ohio, painting.
Richardson Check Rower Co., Richmond, check rower.
Richards, C. C., Indianapolis, cabinet creamery.
Rice, M. T., Brightwood, washer.
Rider & Valentine, Indianapolis, sealing wax.
Rice, Miss Julia H., Newport, Ky., wood carving.
Richardson, Miss Jennie, Delhi, Ohio, painting.
Ritter, Herman, Indianapolis, moths.
Rittenhouse, Mrs. E. M., Indianapolis, calico quilt.
Rider, B. F., Crothersville, dogs.
Rinehart, John, Brownstown, watermelons.
Ripple, Wm., Winamac, farm products.
Richardson & Magrew, Westville, Ohio, hogs.
Riley, James, Thorntown, hogs and farm products.
Richart, Mrs. V., Indianapolis, embroidery.
Rogers, Mrs. J. N., Indianapolis, crackers.
Robinson, Russell D., Indianapolis, Geol. and Nat. History.
Rogers, Mrs. Dudley, Greencastle, flowers.

Robertson, Mrs. A. M., Indianapolis, embroidery.
Robinson, Mrs. F. H., Crawfordsville, toilet cushion.
Rodman, Miss Nellie, Indianapolis, painting.
Rowland, Mrs. Mary, Covington, silk mittens.
Roberts, Mrs. James E., Connersville, embroidery.
Roberts, Mrs. John, Brookville, rug.
Roberts & Allison, Indianapolis, physician's chair.
Robins & Co., Richmond, traction engine.
Rooker, Miss Gertie, Castleton, embroidery.
Robins, Irvin, Indianapolis, buggies and carriages.
Royal St. John Sewing Machine Co., Indianapolis, sewing machines.
Rockwood, Newcomb & Co., Indianapolis, sawmill.
Rock Island Plow Co., Rock Island, Ill., plows.
Rose, Miss Alice, Indianapolis, painting.
Roney, Mrs. H. C., Indianapolis, repousse work.
Rogers, Estelle, Indianapolis, bread.
Robinson, Miss Mary, Indianapolis, painting.
Roberts, Belle, South Bend, crocheted work.
Rowe, Miss Katie, Indianapolis, painting.
Rosenthal M., Indianapolis, horses.
Rottler, Frank M., Indianapolis, horses.
Robey, James, Sabine, horses.
Rouse, R. R., Indianapolis, force pumps and horses.
Rose, James R., Indianapolis, horses.
Rose, A. W., Muncie, hogs.
Robinson, Thomas M., Rockland, farm products.
Robinson, Mrs. A. M., Indianapolis, flowers.
Russell, R. S., Zionsville, hogs.
Rubush, W. G., Indianapolis, wood mantles.
Rumsey Bros., Westfield, N. Y., cattle.
Russell & Co., Massillon, Ohio, traction engine.
Russ, C. A., Louisville, Ky., pearline.
Rutledge Frank, Indianapolis, horses.
Rucker, W. O., Ben Davis, farm products.
Rutledge, Mrs. Mary, Cambridge City, painting.
Ryan, Robbie, Indianapolis, tobacco tags.
Ryan, H. W., Danville, horses.
Ryan, J. S., Detroit, Michigan, horses.

S.

Sala, Grace, Indianapolis, bread.
Sandwich Manufacturing Co., Sandwich, Ill., corn sheller.
Sandwich Enterprise Co., Sandwich, Ill., wind engine.
Sanders, Mrs. Mary, Shelbyville, drawn work.
Sandborn, Gerry M., Indianapolis, minerals.
Sangston, Mrs. E., Lebanon, embroidery.
Sammons, Mrs. A., Indianapolis, crocheted hood.
Saunders, James, Westfield, nursery stock.
Sammons, Miss Lillian, Indianapolis, fancy cake.
Sala, Mrs. M. N., Indianapolis, buttonholes.
Schussler, F., Indianapolis, poultry.
Schallsmith, Mrs. Lizzie, Indianapolis, poultry.
Schultmeyer, Anna, Indianapolis, embroidery.
Schecklanz, A., Plainfield, horses.
Scott, Mrs. J. R., Indianapolis, crochet tidy.
Schivetz, G., Waterloo, apples.
Scott, O. B., Elma, horses.
Schultz, C. H., Indianapolis, ornamental grasses.
Scott, Mrs. E. R., Indianapolis, bread.
Scott, Mrs. James, Indianapolis, silk quilt.
Scott, Mrs. Robert, Indianapolis, knit and crochet work.
Scott, Mrs. T. B., Richmond, embroidery.
Schwingel, Henry, Indianapolis, dogs.
Scott, Geo. W., Haughville, horses.

Schrump, Henry, Indianapolis, cattle.
Selking, Wm., Indianapolis, horses.
Selman, Mrs. A. M., Indianapolis, crochet fascinator.
Sexton, A., Carmel, horses.
Seyl, Mertie, Indianapolis, embroidery.
Sears, J., Brightwood, horses.
Seidensticker, Carl, Indianapolis, patchwork.
Sedgwick Bros., Richmond, wire fence.
Sellick, Miss R. E., Indianapolis, painting.
Seidensticker, Louise, Brightwood, poultry.
Shideler, Mrs. F. E., Muncie, embroidery.
Shoup, Wm., Shelbyville, aquariums.
Shover, G. H., Indianapolis, buggies and carriages.
Sheet Iron Bellows Co., Kempton, sheet iron bellows.
Shull, Mrs. Susan, Lafayette, calico quilt.
Shank, Lewis, Indianapolis, poultry.
Shideler, D. B., Indianapolis, horses.
Shover, B. R., Indianapolis, Geol. and Nat. History.
Shellbarger, C. D., Indianapolis, fence machine.
Sharff, Miss Dollie, Indianapolis, lambrequins.
Shepherd, J. N., Terre Haute, farm products.
Sharp, Thomas, Indianapolis, horses.
Shaneberger, Mrs., Indianapolis, tailoring.
Shidel, George, Danville, Ill., horses.
Shull, Mrs. Jane, Vevay, silk quilt.
Shelburn, B W., Zionsville, horses.
Shelton, Miss Sallie, Indianapolis, bread.
Shireman, C., New Albany, poultry.
Shaneberger, E. L., Indianapolis, butterflies.
Sherman, H. B., Indianapolis, horses.
Sharp, Wm., Indianapolis, dogs.
Shepherd, Hill & Mathers, Jacksonville, Ill., cattle.
Shepherd Bros., Indianapolis, hogs.
Sinclair, Charles, Indianapolis, horses.
Sickler, E. E., Indianapolis, sulky plow.
Silver & Dunning, Salem, Ohio, power and hand cutter.
Sindlinger, Mrs. E., Indianapolis, embroidery.
Simpson, Mrs. Mary, Brightwood, crocheted cotton tidy.
Singer, George, Indianapolis, horses.
Singer Sewing Machine Co., Indianapolis, sewing machines.
Silver, R. & Co., Indianapolis, buggy body.
Simas, Mrs. E. A., Columbus, calico quilt.
Sinclair, Mrs. M., Indianapolis, rug.
Simas, Miss Kate, Columbus, crochet work.
Simas, Miss Edith, Columbus, crocheted hood.
Sinclair, Mrs. S. J., Indianapolis, horses.
Sinker, Davis & Co., Indianapolis, flour mill machinery.
Skillman, Mrs. Anne, Danville, woolen stockings.
Slifer, Andy D., Indianapolis, poultry.
Sloan, R. R., Indianapolis, cattle.
Slawter, C., Indianapolis, horses.
Smith, J. W., Tilden, poultry.
Smith, Frank B., Danville, poultry.
Smith, Nettie, Terre Haute, hand sewing.
Smith, F. P. & Co., Indianapolis, lamps and fixtures.
Smith, S. F., Indianapolis, Geology and Natural History.
Smith, Alice, Rushville, lambrequins.
Smith, T. J. & J. D., Shelbyville, horses.
Smith, Mrs. Susie, New Augusta, butter.
Smith, W. A., Bellmore, horses.
Smith, Mrs. Cyrus, Indianapolis, embroidery.
Smith, H. A., Tilden, apples and farm products.
Smith, W. A., Tilden, farm products.
Smith, Mrs. Eugenia, Indianapolis, machine work.
Smith, Andrew, Indianapolis, horses.
Smock, Harry, Indianapolis, flower.
Smock, W. C., Indianapolis, poultry.
Smock, C. E., Indianapolis, horses.
Snyder Wagon Co., Auburn, farm wagons.
Snell, J. W. & Bro., Edmonton, Canada, hogs.
South Bend Chilled Plow Co., South Bend, chilled plows.
Sohn Ridge Imp. Co., Hamilton, Ohio, grain drills.
Sowell, S. H., Indianapolis, dogs.
Sowers & Haworth, Covington, Ohio, fence machine.
Somefield, Chas., Sabine, horses.
Springfield Engine & Thrasher Co., Springfield, Ohio, traction engine.
Spahr, Geo. M., Malott Park, poultry.
Springfield Wheel Co., Springfield, Ohio, star buggy wheel.
Spalding, Mrs. M. B., Anderson, silk quilt.
Sparks, Mrs. Belle, Anderson, embroidery.
Spear & Bond, New Vienna, Ohio, hogs.
Sparks, Mrs. H. B., Indianapolis, calico quilt.
Sprung, Willie, Indianapolis, poultry.
Springstein, Mrs. Robert, Indianapolis, painting.
Spiral Spring Buggy Co., Grand Rapids, Mich., buggies.
Spur, Mrs. E., Greensburg, jellies.
Springer, John, Oaklond, horses.
Sparks, James, Shelbyville, poultry.
Stevens, F. C., Attica, N. Y., cattle.
Studebaker Bros., South Bend, farm wagons.
Stears, T. B. & Co., Rushville, force pumps.
Stout, A. V., Martinsville, horses.
Strong, Alice E., Indianapolis, rug.
Stedham, Peter, Bartonia, hogs.
Styer, Anna A., Kokomo, embroidery.
Stumps & Thiele, Indianapolis, furnaces.
Staples, Z. T., Brown County, spectacles.
Studebaker, J., Indianapolis, pillow-sham holder.
Stout, W. A., Martinsville, horses.
Staples, W. S., Indianapolis, photograph display.
Stark, M., Sidell, Ill., horses.
Stansberry, F., Waldron, watermelons.
Stillwell, J. W. & Co., Troy, Ohio, cattle.
Stodard Mfg. Co., Dayton, Ohio, disc harrow.
Steam Dental Co., N. Y., Indianapolis, dental work.
Stevens, Tom E., Henryville, horses.
Steiner, J. H., Indianapolis, horses.
Stechen, G. H., Indianapolis, poultry.
Star Drill Co., Rushville, grain drills.
Stanton, G. A., Greenwood, poultry, apples, farm products.
Stechan, Otto, Indianapolis, combination chair.
Stephenson, Geo., Zionsville, broad-cast seed sower.
STATE FAIR EXHIBITORS.

Stewart, Mrs. A., Indianapolis, upholstered chairs.
Stanley, Frank, Lawrence, horses.
Stanley, A. J., McCordville, horses.
Stagg, Mrs. P. D., Greensburg, flowers and crochet work.
Strickland, Smith, Indianapolis, poultry.
Stevens, Jerry, Shelbyville, poultry.
Stair, G. W., Somerset, poultry.
Sterling Manufacturing Co., Sterling, Ill., hay rakes.
Stephenson, Martha J., Millersville, catsup.
Stanton, Mrs. Harriet, Greenwood, butter.
Stanton, J. C., Carmel, horses.
Stephenson, Mrs. M. A., Indianapolis, buttonholes.
Styer, Chas., Kokomo, poultry.
Staden, Geo., Elyria, Ohio, dogs.
Stanford, E., Markham, Canada sheep.
Sutter, Mrs. Emma, Bridgeport, poultry.
Supt. Indianapolis Schools, Indianapolis, specimen drawings.
Superior Drill Co., Springfield, Ohio, grain drills.
Sullivan, J. E., Indianapolis, butter and cheese.
Sugar Valley Seed Co., Thorntown, farm products.
Sutter, Mrs. Flora, Indianapolis, paper box.
Sunman, T. W. W., Spades, poultry.
Sullivan, Stella, Indianapolis, crochet work.
Swift, Miss Jennie, Connersville, crochet work.
Swearinger, C. B., Waverly, horses.
Swift, Carrie, Glenwood, bread.
Swain, W. P. & Son, Bellmore, horses.
Swartz, Mrs. Jas., Indianapolis, embroidery.
Sweeney, John G., Greencastle, horses.
Swearinger, T. B., Zionsville, horses.
Swift, Evan, Franklin, poultry.
Swift, Rosa, Glenwood, bread.
Sweetzer, Mrs. James, Marion, embroidery.

Tarkington, W. C., Indianapolis, physiological manakin.
Tarleton, Mrs. E. J., Indianapolis, afghan.
Tarkleson, Bertha, Anderson, patchwork.
Taylor, Mrs. A. M., Indianapolis, paper box.
Tallman, Mrs. Sarah R., St. Louis, Mo., toilet mats.
Taylor, Mrs. J. H., Indianapolis, point lace.
Templeton, M. R., Indianapolis, poultry.
Terryberry, Albert, Grimsby, Canada, apples.
Terrill, Wm., Indianapolis, encaustic tile.
Thurston, Mrs. V., Indianapolis, embroidery.
Thompson, Mrs. L., Indianapolis, pound cake.
Thought, Nelson, Pittsboro, poultry fence.
Thompson, Mrs. Tillie, Indianapolis, cake.
Thurston & Chase, Findlay, O., farm gate.
Thompson, Wm., New Carlisle, O., horses.
Thomas Harrow Co., Geneva, N. Y., Scotch gang plow.
Tharp, A. J., Plainfield, horses.
Thompson, J. L & Sons, Arcana, sheep.
Thompson, R. A., Pittsboro, hogs and farm products.
Thompson & Dillon, Pittsboro, poultry.
Thornton, Miss H. D., Chattanooga, Tenn., drawn work.
Thomas, A. B., Willow Branch, poultry.
Tilson, John, Franklin, apples.
Timmons, Mrs. S. H., Indianapolis, knit hood.
Tiffany, Geo., Tecumseh, Mich., clay crasher.
Tillman, N. H., Arcanum, O., hogs.
Toles, Edward, Indianapolis, poultry.
Todd, Mrs. M. J., Indianapolis, embroidery.
Towne, Mrs. Frank, Indianapolis, cake.
Tobin, Wm., Indianapolis, poultry.
Toronto Reaper & Mower Co., Springfield, O., binder and harvester.
Todd, D. W. & Son, Urbana, O., hogs.
Townsend, J. J., Gem, hogs.
Townley, Geo. E., Indianapolis, dogs.
Treumer, C. J., Indianapolis, poultry.
Troop, Mrs. J., Lafayette, afghan.
Trio Feed Mill Co., Richmond, corn-sheller.
Troy Buggy Works, Troy, O., buggies and carriages.
Trotter, L. C., Corydon, apples.
Trotter, S., Plainfield, horses
Treat, Mrs. N. A., Laporte, etching.
Truman, James, Crawfordsville, horses.
Trussler, T. J. & Son, Indianapolis, toilet display.
Trotter & Windall, New Amsterdam, apples.
Trogdon, Mrs. Judge, Paris, Ill., crochet lace.
Travell, Mrs. Geo. R., Marion, sofa pillow.
Trusler, Mrs. T. J., Indianapolis, painting.
Traub, Mrs. J. J., Indianapolis, bread.
Truman, Reynolds & Allen, Kansas City, Mo., loaders.
Tucker, H. S., Indianapolis, display of gloves.
Tutewiler, Harry D., Indianapolis, poultry.
Tucker, Mrs. H. S., Indianapolis, painting.
Turner Manufacturing Co., Indianapolis, stoves and ranges.
Twiname, Mrs. Jas. E., Indianapolis, relics.

U.
Uhler, Mrs. Alice, Alexandria, Va., embroidery.
Union Supply Co., Indianapolis, school merchandise.
Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y., cattle.
Updegraff, P. O. & Co., Irvington, poultry.
Utter, S. W., Franklin, rotary churn.

V.
Vance, Mrs. C. W., Paris, Ill., knit mittens.
Vance, A. G., Franklin, horses.
Vajen, Mrs. Sallie D., Indianapolis, repousse work.
Vance, Miss, Paris, Ill., tidy.
Vanderbilt, Oscar, Indianapolis, horses.
Vajen, Willis C., Indianapolis, hardware display.
Van Tilburgh, Chas., Indianapolis, poultry.
Varin, G., Indianapolis, hair goods.
Vandevier Corn Planter Co., Quincy, Ill., corn planter and check rower.
Vallandingham, Mrs., Indianapolis, relics.
Vester, John, Indianapolis, wood ornaments.
Vinson, Miss Maud, Indianapolis, rug.
Vines, A., Vine Spring, apples.
Vinton Iron Works, Indianapolis, saw-mills.
Vogel, Miss Annie, Indianapolis, screen tidies.
Vondersaar, Lulu, Indianapolis, jellies.
Voorhees, Fannie, Indianapolis, dressed doll.
Voss, Jay G., Indianapolis, horses.
Voorhees, O. W., Lawrence, farm products.

W.
Wade, John, Salem, horses.
Warren, Chas. A., Indianapolis, poultry.
Walker, Jos. K., Harrison, Ohio, farm products.
Walton, Geo. B., Indianapolis, honey, butter and cheese.
Walter, Miss Dink, Crawfordsville, silk quilt.
Warren & Marth, Cincinnati, Ohio, fence machine.
Wardwell, Mrs. V., Fairmount, wool stockings.
Wallace, S. M., Indianapolis, horses.
Wanescott, Mrs. L., Cumberland, stuffed birds.
Walker, F. A., Traders' Point, horses.
Walters, W. M., Straw Station, horses.
Walker, Frank, Indianapolis, horses.
Walker, E. S., Indianapolis, dogs.
Walker, J. C., Indianapolis, horses.
Wayne & Anderson, Decatur, Ill., road carts.
Wandell, B. C., Indianapolis, bed springs.
<table>
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<tr>
<th>State Fair Exhibitors</th>
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<tr>
<td>Watertown Steam Engine Co., Watertown, N. Y., threshers and engines.</td>
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<td>Wayne Agricultural Co., Richmond, cultivators.</td>
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<td>Walker, T. B., Indianapolis, horses.</td>
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<td>Ward, Frank, Rockford, Ill., feed mill.</td>
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<td>Weller, L. L., Muncie, washing machine.</td>
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<td>Weghorn, Geo., Indianapolis, horses.</td>
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<td>Wier Plow Co., Monmouth, Ill., sulky plow.</td>
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<td>Welton, W. C., Vincennes, farm products.</td>
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<td>Weesner, E. P., Irvington, farm products.</td>
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<td>Weaver, Mrs. Louisa, Indianapolis, fascinator.</td>
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<td>Wellman, L. E., Indianapolis, wax flowers.</td>
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<td>Webb, John C., Mooresville, horses.</td>
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<td>Wear, F., Plainfield, horses.</td>
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<td>Webb &amp; Whitesides, Bridgeport, hogs.</td>
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<td>Weaver, Lillie, Indianapolis, bread.</td>
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<td>Wells, G. M., Bridgeport, poultry.</td>
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<td>Whitmore &amp; Younger, Casstown, Ohio, cattle.</td>
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<td>White Sewing Machine Co., Cleveland, Ohio, sewing machines.</td>
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<td>White, Isaac G., Adams, portable fence.</td>
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<td>Whitmore, D. H., Reading, Pa., apple parers.</td>
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<td>When Clothing Store, Indianapolis, display of clothing.</td>
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<td>Wheeler, Mrs. Alice, Lawrence, bread.</td>
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<td>Whitehead &amp; Wright, Indianapolis, monument display.</td>
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<td>Whiteley, Fassler &amp; Kelly, Springfield, Ohio, reapers and mowers.</td>
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<td>Whiteside, S. S., Franklin, hogs.</td>
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<td>White, J. W., Greensburg, hogs.</td>
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<td>Whitson, E. &amp; O., Valley Mills, farm products.</td>
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<td>White, Z., Lawrence, farm products.</td>
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<td>Wheatcraft, H. H., Greenwood, cattle.</td>
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<td>Whipp Bros., Marion, Ohio, farm products.</td>
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<td>Wheeler, W. H., Malott Park, horses.</td>
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<td>Whittman Agricultural Co., St. Louis, Mo., engines.</td>
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<td>Wheldon, Mrs. S., Indianapolis, bread.</td>
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<td>Wirt, John B., Indianapolis, feather renovator.</td>
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<td>Williams, G. W., Economy, fence machine.</td>
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<td>Wilhite, Jessie S., Indianapolis, Babbitt churn.</td>
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<tr>
<td>Winchester Wire and Iron Works, Winchester, wire and iron fencing.</td>
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<tr>
<td>Williams &amp; Nordyke, Indianapolis, astronomical telescope.</td>
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<td>Wilhelm John, Wooster, Ohio, creamery can.</td>
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<td>Willey, Mollie, Napoleon, bread.</td>
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<td>Williams, W. C. &amp; Co., Knightstown, hogs.</td>
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<tr>
<td>Wilcox, J. H., Crawfordsville, horses.</td>
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<tr>
<td>Wildman, Mrs. R. H., Indianapolis, rug.</td>
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<td>Williamson, Frank, Zionville, farm products.</td>
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<td>Wilson, Thomas, Indianapolis, farm products.</td>
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<tr>
<td>Wilson, Mrs. Hannah C., Indianapolis, counterpane.</td>
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<td>Wisser, R., Indianapolis, farm products.</td>
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<tr>
<td>Wilkinson, Daniel G., Newcastle, apples.</td>
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<tr>
<td>Wilkins, Miss Ora, Indianapolis, Geology and Natural History.</td>
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<tr>
<td>Wills, Ella, Lebanon, crochet hood.</td>
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<tr>
<td>Winter, Miss Alice, Indianapolis, fascinator.</td>
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<tr>
<td>Wilson, Miss Luna, Rushville, afghan.</td>
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<tr>
<td>Winter, Miss Grace, Indianapolis, painting and crochet lace.</td>
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<td>Williamson, Mrs. L., Indianapolis, crullers.</td>
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<td>Wilson, Miss Blanche, Irvington, painting.</td>
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<td>Wilson, Mary West, Indianapolis, upholstered chair.</td>
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<td>Winter, Mrs. H., Indianapolis, pillow shams.</td>
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<td>Wilhoit, Thomas, Middletown, cattle.</td>
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<td>Williams, J. R., Indianapolis, horses.</td>
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<tr>
<td>Wiles, W. D., Indianapolis, horses.</td>
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<td>Williams, M. R., Indianapolis, dogs.</td>
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<tr>
<td>Wilson, Rich, Rushville, horses.</td>
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<td>Wilson, Green, Waldron, horses and farm products.</td>
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<tr>
<td>Wilson, Frank, Jackson, Mich., sheep and hogs.</td>
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<tr>
<td>Wolf, Geo. W., New Amsterdam, ventilator.</td>
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<tr>
<td>Woodard, J. P., Richmond, cutter, shelter and binder.</td>
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<tr>
<td>Wood, Horace, Indianapolis, horses.</td>
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<tr>
<td>Wood, Mrs. M. E., Indianapolis, darning.</td>
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<tr>
<td>Woodburn, Mrs. J. H., Indianapolis, tidy.</td>
</tr>
</tbody>
</table>
WOOD, Simeon, Greensboro, horses.
Woods, Wm. H. Stilesville, horses and poultry.
Wood, Mrs. D. L., Indianapolis, drawing.
Woodford, Geo. A., Indianapolis, horses.
Wood, Ed., Indianapolis, dogs.
Woods, Oscar, Greentown, horses.
Woodbridge, Mrs. E. H., Indianapolis, crochet lace.
Wright, Katie, Indianapolis, painting.
Wright, S. L., Bloomingdale, horses.
Wright's Land Level Co., Cave Spring, Ga., land level.
Wright, C. & Son, Dayton, Ohio, gang picket and lath mill.

Wurst, S. E., Elyria, Ohio, poultry.
Wulschler & Dorrah, Indianapolis, hogs.
Wyckhoff, Seamans & Benedict, Indianapolis, type writers.

Y.
Yohn, Albert, Indianapolis, books and stationery.
York, Irvin, Brock, Ohio, hogs.
York, Chas., Brock, Ohio, cattle.

Z.
Zeigler, Arnold, Shelbyville, poultry.
Zimmerman, Luna, Mishawaka, rug.

STEAM ENGINES AND SEPARATORS.

Reeves & Co., Columbus, O., traction engine.
J. B. Parker, Indianapolis, Watertown engine.
J. B. Parker, Indianapolis, traction engine.
C. Aultman & Co., Canton, O., thrasher and engine.
Case P. Willard Thrasher Co., Battle Creek, Mich., two thrashers and engine.
Watertown Steam Engine Co., Watertown, N. Y., two plain engines.
Watertown Steam Engine Co., Watertown, N. Y., strawburner and engine.

Aultman & Taylor Co., Mansfield, O., traction engine.
Aultman & Taylor Co., Mansfield, O., thrasher and engine.
Eagle Machine Works, Indianapolis, two traction engines.
Eagle Machine Works, Indianapolis, thrasher and engine.
Russell & Co., Massillon, O., four traction engines.
The Birdsall Co., Auburn, N. Y., traction engine.
The Birdsall Co., Auburn, N. Y., thrasher and engine.
Gaar, Scott & Co., Richmond, two thrashers and engine.
J. M. Pitcher, Sugar Creek, traction engine.
STATE FAIR EXHIBITORS.

M. & J. Rumley, Laporte, traction engine.
M. & J. Rumley, Laporte, thrasher and engine.
Robins & Co., Richmond, traction engine.
Chandler & Taylor, Indianapolis, semi-portable engine.
Case & Willard, Battle Creek, Mich., ten-horse power engine.
Huber Engine Works, Marion, Ohio, plain engine.
Whitely, Fassler & Kelley, Springfield, Ohio, one portable engine.
H. C. Fairbanks, Indianapolis, two separators.
Whitman Ag'l Co., St Louis, Mo., ten-horse power engine.

SAW-MILLS.

Eagle Machine Works, Indianapolis, one circular saw-mill.
Eagle Machine Works, Indianapolis, two double circular saw-mills.
C. & A. Potts & Co., Indianapolis, dogs for saw-mill.
Rockwood, Newcomb & Co., Indianapolis, two saw-mills.
Vinton Iron Works, Indianapolis, one saw-mill.
A. J. Demoss, Noblesville, sawing machine.
Gaar, Scott & Co., Richmond, saw-mill.
Frey, Scheckler & Hoover, Bucyrus, Ohio, Duplex engines.

TILE MILLS.

Chandler & Taylor, Indianapolis, tile machine.
9—Bd. of Agr.

Vinton Iron Works, Indianapolis, tile mill.
J. W. Penfield & Son, Willoughby, Ohio, tile mill.
J. W. Penfield & Son, Willoughby, Ohio, clay crusher.
Anderson Foundry and Machine Works, Anderson, tile and brick machine.

BRICK MACHINES.

Frey, Scheckler & Hoover, Bucyrus, Ohio, brick machine.
Fletcher & Thomas, Indianapolis, brick machine.
C. & A. Potts & Co., Indianapolis, clay disintegrator.
Fate & Freeze, Plymouth, Ohio, tile and brick machine.
J. W. Penfield & Son, Willoughby, tile and brick machine.
J. H. Latshaw & Co., Indianapolis, sand molding machine.
Nolan, Madden & Co., Rushville, tile and brick machine.

APPARATUS CONNECTED WITH STEAM AND OTHER MOTORS.

C. Wright & Son, Dayton, Ohio, gang, picket and lath mill.
American Paper Pulley Co., Indianapolis, paper pulleys.
John M. Pitcher, Sugar Creek, spark arrester.

HYDRAULIC MACHINES AND OTHER APPARATUS.

A. R. Glover, Clayton, patent water gaps.
FORCE PUMPS OF ALL KINDS.

R. R. Rouse & Co., Indianapolis, driven well supplies.
F. E. Myers & Bro., Ashland, Ohio, twenty-one force pumps.
A. M. Makepeace, Indianapolis, twenty force pumps.
Merrill Pump Co., Indianapolis, chain pumps.
Matt, Foos & Co., Springfield, Ohio, display force pumps.
E. K. Hayes, Galion, Ohio, double-acting force pump.
E. K. Hayes, Galion, Ohio, single-acting force pump.
E. K. Hayes, Galion, Ohio, driven well force pump.
F. B. Stearns, & Co., Rushville, force pump.
Frank Champ, Dublin, anti-freezing force pump.
A. W. Morgan & Son, Indianapolis, well augur and earth elevator.

HOISTING MACHINERY.

J. P. Webb, Indianapolis, lifting jack.
A. S. Hinshaw, Westfield, lifting jack.
T. R. Cook, Indianapolis, hoisting jack.
T. R. Cook, Indianapolis, wagon hoisting jack.

FLOURING MILL MACHINERY.

Barnard & Leas Mfg Co., Moline, Ill., roller mill.
Sinker, Davis & Co., Indianapolis, flour mill machinery.
Newark Machine Co., Columbus, Ohio, warehouse mill.
Nordyke & Marmon Co., Indianapolis, mill and bolting machinery.

WOOD WORKING MACHINERY, EVAPORATORS, ETC.

John B. Wirt, Indianapolis, feather renovator.
V. Folan, Indianapolis, traversing machine.
Eagan & Co., Cincinnati, Ohio, wood working machinery.

WARMING AND VENTILATING APPARATUS.

Stumph & Theile, Indianapolis, furnaces.
Eckert & Co., Indianapolis; warm air furnace.

NEWSPAPER STANDS.

Indianapolis Journal Co., Indianapolis.
Indianapolis News, Indianapolis.
Prairie Farmer, Chicago, Ill.
Ohio Farmer, Cleveland, Ohio.
Indiana Farmer, Indianapolis.
Cincinnati Commercial Gazette, Cincinnati, Ohio.

LAUNDRY AND DAIRY MACHINES AND IMPLEMENTS.

C. C. Richards, Indianapolis, Moseley's cabinet creamery.
C. C. Richards, Indianapolis, Moseley's strainer.
G. H. Hornbuckle, Glenn's Valley, strainer.
Wm. Porter, Indianapolis, Hannah washer.
Isaac Bogert, Dana, churn dasher.
Flint Creamery Co., Flint, Mich., barrel churn.
L. L. Weller, Muncie, washing machine.
H. T. Batcheller & Son, Rock Falls, Ill., display butter color.
H. T. Batcheller & Son, Rock Falls, Ill., two-barrel churns.
Jessie S. Wilhite, Indianapolis, Babbitt's churns.
S. N. Utter, Franklin, rotary churn.
Mount, Roots & Co., Connersville, farmers' friend churn.
James Groenendyke, Middleton, washing machine.
Geo. H. Hornbuckle, Glenn's Valley, strainer.
W. R. Fowler, Lafayette, polar creamery display.
J. C. Moody, Lynn, Champion churn.
John Wilhelm, Wooster, Ohio, creamery can.
M. T. Rice, Brightwood, washer.
J. B. Petit, Burlington, Iowa, washer.

OTHER DOMESTIC MACHINES AND IMPLEMENTS.

John W. Blake, agt., Indianapolis, in-vincible hatcher.
Wm. Knowles, Rockville, kitchen cabinet.
Thomas Pierce, Indianapolis, novelty swing.
M. O. Fisher, gen. agt., Dayton, O., sliding window blind.
C. W. Nickum, Indianapolis, wedding cake ornaments.
A. M. Makepeace, Indianapolis, vegetable slicer.
Pugh & Johnson, Indianapolis, washing machine.
Pugh & Manl, Indianapolis, window balance and lock.
Pugh & Butler, Indianapolis, automatic clutch.
Wm. Shoup, Shelbyville, four aquariums.

HOUSE FURNISHING GOODS.

James Lefever, Indianapolis, iron frame seat chair.
C. E. Kenyon, Indianapolis, Edwards oil burner.
Thomas Pearce, Indianapolis, fancy chair.
C. A. Russ, Louisville, Ky., pearline.
B. F. Babbett, Lafayette, Babbett's soap.
W. W. Barnum, Indianapolis, automatic bed canopy.
Muzzy's Starch Co., Elkhart, Muzzy's starch.
Daumeyer Clothes Washer Co., Kansas City, Mo., hydraulic clothes washer.
W. E. Elder, Indianapolis, furniture display.
Fred Hitz, Indianapolis, fancy cakes and candies.
Baird & Dillon, Indianapolis, silver ware display.
Rider & Valentine, Indianapolis, sealing wax.
J. Studebaker, agt., Indianapolis, pillow sham holder.
Chas. Mayer & Co., Indianapolis, fancy goods.
Geo. Cyle, Kokomo, portable bath tub.
J. T. Power, Indianapolis, coffee display.
Mrs. P. C. Johnson, Irvington, portable wardrobe.
Berteman Bros., Indianapolis, fancy grasses and bouquets.
M. J. Kelly, Jacksonville, Fla., Florida goods.
T. J. Trusler & Son, Indianapolis, toilet display.

STOVES, RANGES, FURNACES AND VENTILATORS.

Elder & Co., Indianapolis, stoves and ranges.
Turner Manufacturing Co., Indianapolis, stoves and ranges.
Brown & Furguson, Indianapolis, stoves and ranges.
Donnon & Off, Indianapolis, stoves and ranges.
Phil. J. Frick & Co., Indianapolis, stoves and ranges.
Freeny & Ferrell, Indianapolis, stoves and ranges.
Siumpf & Thiel, Indianapolis, furnaces.
Eckert & Co., Indianapolis, furnaces.
Geo. W. Wolf, agent, New Amsterdam, ventilator.
HARDWARE SHEET METAL WORK.
Willis C. Vajen, Indianapolis, display hardware.
Benj. Atkinson, Indianapolis, automatic hinge.

MARBLE, SLATE, STONE, ETC.
Wm. Terrell, Indianapolis, encaustic tile.
Wm. Terrell, Indianapolis, slate mantles.

GRATES.
Wm. Terrell, Indianapolis, grates.

CARPENTERS' AND JOINERS' WORK.
Byrkit Sheathing and Lath Company, Indianapolis, combined sheathing and lath.
Wm. Terrell, Indianapolis, wood mantles.
M. S. Huey & Son, Indianapolis, wood mantles.
M. S. Huey & Son, Indianapolis, grates, heartths, fenders.
M. S. Huey & Son, Indianapolis, wood desk.

PLOWS, ALL KINDS.
Geo. W. Brown, Galesburg, Ill., 2-horse cultivator.
Gere, Truman, Platt & Co., Owego, N. Y., spring tooth cultivator.
Rude Bros., Liberty, 4-horse cultivators.
E. L. Sickler, Indianapolis, sulky plow.
Enos Almond, agt., Indianapolis, the Butcher-Gibbs plow display.
David Bradley Mfg. Co., Indianapolis, plow display.
Deere & Co., Moline, Ill., 11 plows, all kinds.
J. I. Case Plow Works, Racine, Wis., 21 plows, all kinds.

South Bend Chilled Plow Co., South Bend, 22 chilled plows.
Rock Island Plow Co., Rock Island, Ill., 8 plows.
Geo. Prier, agt., Indianapolis, 12 Gibbs plows.
Dayton Plow Co., Dayton, Ohio, 21 plows.
Dayton Plow Co., Dayton, Ohio, 1 sulky, 1 double-shovel plow.
Ewald Over, Indianapolis, road plow.
Ewald Over, Indianapolis, grader and ditcher.
Gibson Ball Plow Co., Canton, 11 plows.
O. L. Nissler, Indianapolis, plows and cultivator.
E. Ball & Co., Canton, Ohio, display plows.
The Long Allstater Co., Hamilton, Ohio, display plows.

CULTIVATORS AND PULVERIZERS.
O'Key & Wandell, Indianapolis, soil pulverizer.
King Drill Co., Logansport, three-hoe fertilizer.
H. P. Deutcher, Hamilton, Ohio, soil pulverizer.
Deere & Co., Moline, Ill., three cultivators.
Deere & Co., Moline, Ill., two double shovelf plows.
Avery Planter Co., Peoria, Ill., eight cultivators.
Wayne Agr'l Co., Richmond, two cultivators.
Wayne Agr'l Co., Richmond, one corn planter, three drills.
Challenge Corn Planter Co., Grand Haven, Mich., one corn planter.
Rock Island Plow Co., Rock Island, Ill., three cultivators.
P. F. Mast & Co., Springfield, Ohio, four cultivators.
D. E. McSherry & Co., Dayton, Ohio, one pulverizer.
D. E. McSherry & Co., Dayton, Ohio, one cultivator.
J. I. Case, Racine, Wis., walking cultivator.
J. I. Case, Racine, Wis., riding cultivator.
Okey & Wandell, Indianapolis, clod crusher, cultivator and harrow comb.
Brown-Manley Plow Co., Malta, Ohio, three walking cultivators.
Ewald Over, Indianapolis, clod crusher and pulverizer.
C. F. Marchand, Larwill, clod cruiser and pulverizer.
The Long Alstatter Co., Hamilton, Ohio, cultivators.

HARROWS AND CORN PLANTERS.

David Bradley Mfg. Co., Indianapolis, harrows.
Hears, Dunn & Co., Peoria, Ill., two-horse corn planter.
H. P. Deutscher, Hamilton, Ohio, corn planter, with drill.
H. P. Deutscher, Hamilton, Ohio, corn planter, with check-rower.
The Ohio Rake Co., Dayton, Ohio, pulverizing harrow.
Deere, Manson & Co., Moline, Ill., three corn planters.
Avery Planter Co., Peoria, Ill., three corn planters.
Haworth & Sons, Decatur, Ill., corn planter and check-rower.
The Vandevier Corn Planter Co., Quincy, Ill., corn planter and check-rower.
The Vandevier Corn Planter Co., Quincy, Ill., two-horse planter and drill.
J. I. Case Plow Works, Racine, Wis., Eureka harrow.
J. I. Case Plow Works, Racine, Wis., adjustable harrow.
R. Lean & Son, Mansfield, Ohio, all-steel harrow.
Stoddard Mfg. Co., Dayton, Ohio, disc harrow.
Ewald Over, Indianapolis, extension harrow.
A. Hirschheimer, LaCrosse, Wis., self-adjustable harrow.
Kimberlin Mfg. Co., Indianapolis, iron duke harrow.
D. E. McSherry & Co., Dayton, Ohio, disc harrow.
Beedle & Kelley Co., Troy, Ohio, four corn planters.
Rock Island Plow Co., Rock Island, Ill., two harrows.
Farmers' Friend Mfg. Co., Dayton, Ohio, one harrow.
Wier Plow Co., Monmouth, Ill., variety of harrors.
Thomas Harrow Co., Geneva, N. Y., Scotch gang harrow.
A. C. Evans, Springfield, Ohio, triple harrow.

DRILLS, HOES, RAKES AND SHOVELS.

Norris Bros., Rushville, corn drill.
Band & Foreman, Liberty, revolving hay rake.
Eagle Machine Co., Lancaster, Ohio, drills.
King Drill Co., Logansport, drills.
James Campbell, Harrison, Ohio, drills.
Heard, Drum & Co., Peoria, Ill., drills.
H. P. Deuscher, Hamilton, O., three drills.
Deere, Manson & Co., Moline, Ill., one drill.
Rude Bros.' Manufacturing Co., Liberty, eight drills.
Rude Bros.' Manufacturing Co., Liberty, one sulky hay rake.
Superior Drill Co., Springfield, Ohio, three two-horse drills.
Superior Drill Co., Springfield, Ohio, one one-horse drill.
Gregg & Co., Trumansburg, N. Y., rakes.
Thomas Manufacturing Co., Springfield, Ohio, self-dump hay rake.
P. P. Mast & Co., Springfield, Ohio, five grain drills.
Geo. Prier, agent, Indianapolis, drill and corn planter.
Gere, Truman, Platt & Co., Owego, N. Y., one wheat drill.
Newark Machine Co., Columbus, Ohio, two grain drills.
Farmers' Friend Manufacturing Co., Dayton, Ohio, four grain drills.
Farmers' Friend Manufacturing Co., Dayton, Ohio, two corn planters, one check rower.
Farmers' Friend Manufacturing Co., Dayton, Ohio, two corn drills.
Ewald Over, Indianapolis, one-horse grain drills.
Sohn Ridge Imp. Co., Hamilton, Ohio, one grain drill.
Sohn Ridge Imp. Co., Hamilton, Ohio, four hay rakes.
Empire Drill Co., Shortsville, N. Y., two grain and fertilizer drills.
D. E. McSherry & Co., Dayton, Ohio, seventeen drills.
Star Drill Co., Rushville, drills and cultivators.
David Bradley Manufacturing Co., Indianapolis, wheat drill.
David Bradley Manufacturing Co., Indianapolis, self-dump hay rake.
Beedle & Kelley Co., Troy, O., three sulky hay rakes.

CHECK-ROWERS, MARKERS AND SEEDERS.

Hearst, Dunn & Co., Peoria, Ill., check-rower for planter and drill.
Avery Planter Co., Peoria, Ill., two check rowsers.
Richmond Check-Rower Co., Richmond, Richmond check-rower.
Conklin, Tait & Co., Decatur, Ill., Tait check-rower.
Geo. Stevenson, Zionsville, broadcast seed-sower.
E. K. Hayes, Galion, Ohio, Kewana check-rower.
Steven Freeman & Sons, Racine, Wis., Strowbridge broadcast sower.
Beedle & Kelley Co., Troy, O., two check rowsers.
Deere, Manson & Co., Moline, Ill., two check rowsers.

DISPLAY AGRICULTURAL IMPLEMENTS.

H. T. Conde, Indianapolis, display agricultural implements.
Goulds & Austin, Chicago, Ill., display agricultural implements.

DITCHING MACHINES.

Elevator Ditching Machine Co., Newark, O., ditching machine.
Moses Meilner, Leesburg, O., ditching machine.
HARVESTING IMPLEMENTS.

Aultman, Miller & Co., Akron, Ohio, harvesting machinery.

Minneapolis Harvester Works, Minneapolis, Minn., one harvester and binder.

Minneapolis Harvester Works, Minneapolis, Minn., one mower.

Plano Mfg. Co., Indianapolis, three reapers and mowers.

Whiteley, Fassler & Kelley, Springfield, Ohio, six binders and mowers.


Stoddard Mfg. Co., Dayton, Ohio, one mower.

Hoover & Gamble, Miamisburg, Ohio, three harvesters, one mower.

Toronto Reaper & Mower Co., Springfield, Ohio, binder and harvester.

Boston Cordage Co., Boston, Mass., binding twine.


Eureka Mower Co., Utica, N. Y., Eureka mower.

Walter A. Wood, Chicago, Ill., reapers and mowers.


Mast, Foss & Co., Springfield, Ohio, lawn mowers.

Hoosier Mfg. Co., Indianapolis, reapers and mowers.

D. M. Osborn & Co., Auburn, N. Y., reapers and mowers.


Milwaukee Harvester Works, Milwaukee, Wis., harvester and binder.

J. F. Seiberling & Co., Akron, Ohio, four mowers, reapers and binders.

Wm. Deering & Co., Chicago, Ill., reapers and mowers.

Gregg & Co., Trumansburg, N. Y., mowers.


The McCormick Harvesting Machine, Indianapolis, harvesters and binders.

HORSE HAY RAKES.

David Bradley Mfg. Co., Indianapolis, horse hay rakes.

Ohio Rake Co., Dayton, Ohio, horse hay rakes.


Beele & Kelley Co., Dayton, Ohio, hay rakes.


Newark Machine Co., Columbus, Ohio, hay rake.


Chieftain Hay Rake Co., Canton, Ohio, hay rakes.


Ohio Rake Co., Dayton Ohio, rakes.

LOADERS.

T. V. Myers & Bro., Ashland, Ohio, hay unloader and conveyor.

J. E. Demont, Noblesville, hay rake and loader combined.


Truman Reynolds & Allen, Kansas City, loader.

TEDDERS.

T. R. Cook, Indianapolis, corn-shock binder.


STACKERS AND HAY ELEVATORS.

C. Aultman & Co., Canton, Ohio, pivot stacker.

Superior Drill Co., Springfield, Ohio, Superior harpoon fork.

Superior Drill Co., Springfield, Ohio, Hall's hay carrier.

Eagle Machine Works, Indianapolis, straw stacker.

Reeve & Co., Columbus, straw stacker.
Newark Machine Co., Columbus, Ohio, straw stacker.
Geo. G. Taylor, Thorntown, straw stacker.
J. E. Porter, Ottawa, Ill., straw stacker.
Osborn Bros., Ashland, Ohio, straw stacker.
Chas. E. Merrifield, Indianapolis, straw stacker.
Springfield En. and Thrasher Co., Springfield, O., straw stacker.
Meyer Bros., Ashland, Ohio, straw stacker.

**FANNING MILLS, ETC.**

T. J. Colber, Warsaw, the Bond fanning mill.
Newark Machine Co., Columbus, Ohio, fanning mill.
W. H. Dungan, Indianapolis, grain bag holder.
Marseilles Manufacturing Co., Marseilles, Ill., fanning mill.
C. E. Merrifield, Indianapolis, fanning mill.

**POTATO Diggers.**

Deere & Co., Moline, Ill., potato digger.

**CORN SHELLERS.**

Eagle Machine Co., Lancaster, Ohio, two-hole corn sheller.
Marseilles Manufacturing Co., Marseilles, Ill., four corn shellers.
Ohio Rake Co., Dayton, Ohio, corn sheller.
Sandwich Manufacturing Co., Sandwich, Ill., four-hole power Sandwich sheller.
David Bradley Manufacturing Co., Chicago, Ill., corn sheller and feed grinder.
McLaughlin, Sheldon & Co., Owatonna, Minn., corn sheller.
Newark Machine Co., Columbus, Ohio, corn sheller.
Gere, Truman, Platt & Co., Cleveland, Ohio, corn sheller.

**CLOVER HULLERS.**

Birdsall Manufacturing Co., South Bend, clover huller.
Newark Machine Co., Columbus, Ohio, Victor clover huller.
Gaar, Scott & Co., Richmond, clover huller.

**BINDER TRUCKS.**

The Ohio Rake Co., Dayton, Ohio, binder truck.
D. M. Osborne & Co., Cleveland, Ohio, binder truck.
Ewald Over, Indianapolis, binder truck.
Chas. E. Merrifield, Indianapolis, binder truck.

**FEED MILLS, CRUSHERS, STRAW CUTTERS AND STEAMERS.**

David Bradley Mfg. Co., Indianapolis, feed mills.
Eagle Machine Works, Lancaster, Ohio, horse-power feed cutters.
McLaughlin, Sheldon & Co., Owatonna, Minn., feed mill.
Sandwich Mfg. Co., Sandwich, Ill., feed grinder and power grinder.
Frank Ward, Rockford, Ill., feed mill.
Trio Feed Mill Co., Richmond, comb. fodder cutter, corn sheller and feed mill.
Avery Planter Co., Peoria, Ill., stalk cutters.
J. P. Woodard, Richmond, cutter, shelter and binder combined.
Bell City Mfg. Co., Racine, Wis., fodder cutters.
Goulds & Austin, Chicago, Ill., hay and straw cutters.
Newark Machine Co., Columbus, Ohio, cutting boxes.
Silver & Dunning, Salem, Ohio, one power and one hand cutter.
HAY PRESSES.

Albert & Eaglesfield, Indianapolis, hay press.
A. H. Meal, Indianapolis, two hay presses.

FENCES AND FENCE MACHINES.

Chas. M. Reed, Connersville, Climax fence machine.
M. J. Jennings & Co., Indianapolis, American fence machine.
O. D. Reeves & Bro., Richmond, portable fence loom.
Sedgwick Bros., Richmond, wire fence.
John W. Blake, agt., Indianapolis, wire poultry fence.
Nelson Thaught, Pittsboro, improved fence.
M. C. Henley, Richmond, fence machine.
M. C. Henley, Richmond, improved farm fence.
C. Wright & Son, Dayton, Ohio, fence machine.
C. Wright & Son, Dayton, Ohio, fence with stretching and picket, and picket-pointing apparatus.
L. C. Landen, Lawrence, field fence machine.
Kregelo & Railback, Indianapolis, field and house fence machine.
O. Mosely, Peru, Excelsior fence machine.

J. H. Beecher, Indianapolis, improved board fence.
S. L. Bailey, Keuka, N. Y., portable sectional fence.
Sowers & Haworth, Covington, Ohio, Vanhorn fence machine.
Warren & Marth, Cincinnati, Ohio, portable fence machine.
W. H. Boggs, Covington, Ohio, portable farm fence.
G. W. Williams, Economy, portable fence machine.
Porch & Steigerman, Spiceland, portable fence machine.
Wayne Agr'l Co., Richmond, portable fence machine.
Calvin Darnell, Indianapolis, portable iron fence.
Cowls & Buttz, Clifford, portable fence machine.
Richmond Check Rower Co., Richmond, portable fence loom.
Macy & Gilbert, Straughns, Excelsior fence machine.
Thomas Huston, Kokomo, improved rail fence.
John Jay, Pleasant Hill, Ohio, portable fence.
Ewald Over, Indianapolis, barbed wire fence post.
Ind. Wire Fence Co., Crawfordsville, display barbed wire.
Ind. Wire Fence Co., Crawfordsville, barbed wire machinery.
Donaldson, Atkins & Amos, Montezuma, climax fence post.
Machine & Steel Pully Co., Indianapolis, fence machine.
G. W. Homes, Huntington, portable fence.
Isaac G. White, Adams, portable fence.
Mast, Foos & Co., Springfield, Ohio, wrought iron fence.
E. E. Sickler, Indianapolis, Aufait wire stretcher.
Chas. Owen, North Indianapolis, fence machine.
Dr. J. Bryant, Indianapolis, iron fence.
John P. Brown, Rising Sun, fence weaving machine.
Winchester Wire & Iron Works, Winchester, wire and iron fencing.
J. T. Cleveland, Indianapolis, tubular iron fence.
Allison & Irwin, Columbus, fence weaving machine.
Elliott & Reed, Richmond, power fence machine.
C. D. Shellbarger, Indianapolis, fence machine.
Ewer & White, Battle Creek, Mich., farm fence.

WIND ENGINES.

Flint & Walling Manufacturing Co., Kendallville, wind engine.
Sandwich Enterprise Co., Sandwich, Ill., wind engine.
Little Giant Power Converter, Cincinnati, O., attachment to wind engine.
R. E. Crosby, Indianapolis, Storm King wind engine.
Challenge Wind and Feed Mill Co., Batavia, Ill., Challenge wind engine.

AUTOMATIC GATES.

T. R. Cook, Indianapolis, automatic gate.
H. H. Hoover, Macy, general purpose farm gate.
Jesse A. Lease, Blue Grass, automatic gate.
Jesse A. Lease, Blue Grass, flexible farm gate.
B. A. Atkinson, Indianapolis, patent draw-bridge gate and hinges.
Thurston & Chase, Findlay, Ohio, improved drive and farm gate.

MANURE SPREADER.

Newark Machine Co., Columbus, Ohio, manure spreader.

CORNSTALK CUTTERS.

Deere, Manson & Co., Moline, Ill., cornstalk cutter.
T. R. Cook, Indianapolis, cornshock binder.
G. G. F. & Joe E. Boswell, Indianapolis, cornfodder cutter.

CIDER MILLS.

David Bradley Manufacturing Co., cider mill.
Superior Drill Co., Springfield, Ohio, Buckeye cider mill.
D. H. Whitmore, Reading, Pa., apple parers.
Ewald Over, Indianapolis, Power apple grinder.
Ewald Over, Indianapolis, power cider press.

STUMP PULLER.

Ewald Over, Indianapolis, stump puller.

FARM WAGONS AND ATTACHMENTS.

Nelson Thaught, Pittsborough, imp. wagon bolster.
Cherry, Morrow & Co., Nashville, Tenn., farm wagons.
Helfrich & Danley, Indianapolis, dump wagons.
Moline Wagon Co., Moline, Ill., display wagons.
McCoy Mfg. Co., Indianapolis, imp. singletrees and doubletrees.
Gerr, Truman, Platt & Co., Owego, N. Y., farm wagons.
Kimberlin Mfg. Co., Indianapolis, equalizer.
Capital Wagon Co., Lansing, Mich., display farm wagons.
Studebaker Bros., South Bend, spring and farm wagons.
Bimel & Son, St. Mary's, Ohio, spring and farm wagons.
Snyder Wagon Co., Auburn, spring and farm wagons.
MISCELLANEOUS EXHIBITS.

Munson Bros., Indianapolis, lightning rod points.
Elias Bills, Macy, mole burrowing animal trap.
Thomas W. Bass & Son, Indianapolis, broom exhibit.
Valentine Foland, Indianapolis, traversing machine.
Clash & Ewing, New Albany, weather strip.
H. C. Fox, New York, Fox sad iron.
Machine & Steel Pulley Co., Indianapolis, roller skate.
Chicago Scale Co., Chicago, Ill., stock scale.
Sheet Iron Bellows Co., Kempton, sheet iron bellows.
Jesse T. Johnson, Indianapolis, spoke and felloe machine.
Raymond & Price, Dayton, Ohio, wheel tempering machine.
J. H. Hartwell, Springfield, Ohio, iron grape cement.
Ready Fire Extinguisher Co., Chicago, Ill., Ready fire extinguisher.
Williams & Nordske, Indianapolis, astronomical telescope.
A. J. Munson, Indianapolis, lightning rods.
Amos Oberly, Indianapolis, Rice’s science of music.
Wright’s Land Level Co., Cave Spring, Ga., Wright’s land level.
New York Steam Dental Co., Indianapolis, dental work.
Dr. A. P. Heron, Indianapolis, dental appliances.
Roberts & Allison, Indianapolis, physician’s chair.
Albert Yohn, Indianapolis, books and stationery.
American Writing Machine Co., Hartford, Conn., Caligraph Writing Machine Co.
Sedgewick Bros., Richmond, type writer.
N. T. Conde, Indianapolis, type writer.
H. P. Hood, Indianapolis, type writer.
D. H. Baldwin & Co., Indianapolis, musical instruments.
Geo. C. Pearson, Indianapolis, musical instruments.
Dr. E. S. Elder, Indianapolis, old clock.
White Sewing Machine Co., Cleveland, Ohio, display sewing machines.

Domestic Sewing Machine Co., Chicago, Ill., display machine work.
The Union Supply Co., Indianapolis, school merchandise.
Wyckoff, Seams & Benedict, Indianapolis, Remington type writers.
Child & Bradley, Indianapolis, Acme renovator.
Wm. Bellis, Indianapolis, coin mailing book.
Nathan Blume, New York, jewelry.
T. H. Noonan & Co., Indianapolis, glove cleaner.
C. H. Schultz, Indianapolis, ornamental grasses.
G. Varin, Indianapolis, hair goods.
Z. T. Staples, Brown County, spectacles and eye glasses.
S. A. Scofield & Son, Morenci, Mich., rug machine.
W. G. Rubush, Indianapolis, wood mantles.
Otto Stehman, Indianapolis, combination chair.
E. H. Eldridge & Co., Indianapolis, electric window cleaner.
J. W. Gray, Indianapolis, miniature ship.
Restiss & Rayfield, Chicago, Ill., safety hotlow ware.
F. P. Smith & Co., Indianapolis, lamps and fixtures.
Supt. Indianapolis Schools, Indianapolis, specimen drawings.
Singer Sewing Machine Co., Indianapolis, sewing machines.
C. C. Koerner, Indianapolis, fancy penmanship.

CARRIAGES, BUGGIES AND DISPLAY WAGONS.

David Bradley Mfg. Co., Indianapolis, buggies and carriages.
G. H. Shover, Indianapolis, buggies and carriages.
Irvin Robbins, Indianapolis, buggies and carriages.
Backus & Reagen, Indianapolis, buggies and carriages.
CSpring Cart Co., Indianapolis, two buck boards, three road carts.
Columbus Buggy Co., Columbus, Ohio, carriages and buggies.
Troy Buggy Works, Troy, Ohio, carriages and buggies.
Jesse F. Johnson, Indianapolis, device for putting spokes in wheels.
R. R. Rouse, Indianapolis, gents’ driving cutter.
Ben. T. Nye, Indianapolis, folding top delivery wagon.
Abbott Buggy Co., Chicago, Ill., display buggies.
C. H. Black, Indianapolis, carriages and buggies.
L. Bimel, St. Mary’s, Ohio, buggies.
Kaufman Buggy Co., Miamisburg, Ohio, one buggy.
R. Silver & Co., Indianapolis, buggies and buggy body.
C. E. Kregelo, Indianapolis, one white and one black funeral car.
Middletown Buggy Co., Middletown, Ohio, six buggies and carriages.
Kalamazoo Wagon Co., Kalamazoo, Mich., one buggy.
George A. Cyle, Kokomo, safety-rein holder.
Bernd Bros. & Co., Indianapolis, top delivery wagon.
J. M. Hoffman, Indianapolis, delivery wagons.
Connersville Buggy Co., Connersville, carriages and buggies.
L. Bimel & Son, St. Mary’s, Ohio, carriages and buggies.
Howland & Johnson, Indianapolis, park and spring wagons.
Wayne & Anderson, Decatur, Ill., road carts.
Springfield Wheel Co., Springfield, Ohio, star buggy wheel.

MONUMENTAL DISPLAY.

W. C. Whitehead & Co., Indianapolis, marble monuments.
August Deiner, Indianapolis, monumental work.

CARPETS, RUGS, ETC.

Albert Gall, Indianapolis, carpets, rugs and wall paper.
C. L. Hutchinson, Indianapolis, carpets, rugs and wall paper.

COOPERAGE, WIRE GOODS AND BRUSHES.

Sedgewick Bros., Richmond, wire chair.
Sedgewick Bros., Richmond, wire summer house.
Sedgewick Bros., Richmond, wire sofa.
Sedgewick Bros., Richmond, wire brackets and shelves.

CLOTHING, ETC.

When Clothing Store, Indianapolis, display clothing.
Model Clothing Co., Indianapolis, display clothing.
Kahn & Co., Indianapolis, display clothing.
H. S. Tucker, Indianapolis, display gloves.
R. R. Parker, Indianapolis, gents’ furnishing goods.

ENGRAVING ON STEEL, GENERAL LITHOGRAPHY, ETC.

A. Chandler, Indianapolis, engraver’s display.
C. L. Divine, Indianapolis, photograph enlarging.
W. S. Staples, Indianapolis, photograph display.
Purdue University, Lafayette, mechanical exhibit.
Bryant’s Business College, Indianapolis, pen drawings.
COMMERCIAL FERTILIZERS.

BY ROBERT B. WARDER, STATE CHEMIST OF INDIANA.

A table of fertilizer analyses for 1886 is published below, those made during previous years having appeared in former volumes of the Indiana Agricultural Report. Twenty-four samples sent by manufacturers have been analyzed (as required by law), besides three samples furnished by the Association of Official Agricultural Chemists, to secure greater uniformity of methods among the several States. The temperature of 65° C. has been used during the past season to distinguish insoluble and reverted phosphoric acid, as in most of the other States. The analytical work was carefully done by Prof. H. A. Huston, Assistant Chemist.

The estimated values are based upon the same scale of prices as for the previous two years, namely:

Ten cents per pound for soluble phosphoric acid.
Nine cents per pound for reverted phosphoric acid.
Five cents per pound for insoluble phosphoric acid.
Fifteen cents per pound for ammonia.
Six cents per pound for soluble potash.

Attention is called to the explanation of analyses, and to the caution to be used in interpreting the estimated values, as published in former reports.

Sixty-two thousand five hundred tags were issued during the year ending September 30, 1886, representing the possible sale of 6,250 tons of commercial fertilizers within the State. The statistics already published are now extended as follows. It must be borne in mind that the estimates of plant food drawn from the soil are probably below the truth, while those of fertilizers sold are probably too high:

COMPARATIVE TABLE.

<table>
<thead>
<tr>
<th>Phosphoric Acid</th>
<th>Potash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawn from the soil by field crops</td>
<td>35,268 tons.</td>
</tr>
<tr>
<td>Consumed in feed of live stock</td>
<td>52,131 tons.</td>
</tr>
<tr>
<td>Furnished in commercial fertilizers, 1884</td>
<td>1,051 tons.</td>
</tr>
<tr>
<td>Furnished in commercial fertilizers, 1885</td>
<td>920 tons.</td>
</tr>
<tr>
<td>Furnished in commercial fertilizers, 1886</td>
<td>981 tons.</td>
</tr>
<tr>
<td>Furnished in commercial fertilizers (mean for 3 years)</td>
<td>984 tons.</td>
</tr>
</tbody>
</table>

No very marked increase appears in the quantity of fertilizers sold. Ground bone is quite popular, but the farmers depend almost wholly upon the natural fertility of their soil for potash.
## ANALYSES OF FERTILIZERS.

<table>
<thead>
<tr>
<th>Number</th>
<th>NAME OF FERTILIZER</th>
<th>MANUFACTURER</th>
<th>Per Cent of Soluble Phosphoric Acid</th>
<th>Per Cent of Acidic Phosphoric Acid</th>
<th>Per Cent of Total Phosphoric Acid</th>
<th>Per Cent of Ammonium Phosphate</th>
<th>Value Per Ton</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>185</td>
<td>Corn Fertilizer</td>
<td>Robt. B. Brown Oil Co., St. Louis, Mo.</td>
<td>4.62</td>
<td>3.57</td>
<td>1.26</td>
<td>9.55</td>
<td>4.13</td>
<td>239.42</td>
</tr>
<tr>
<td>186</td>
<td>Homestead Tobacco Grower</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>7.37</td>
<td>3.88</td>
<td>8.63</td>
<td>6.73</td>
<td>5.17</td>
<td>42.70</td>
</tr>
<tr>
<td>187</td>
<td>Homestead Corn and Wheat Grower</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>9.03</td>
<td>1.15</td>
<td>1.33</td>
<td>11.51</td>
<td>4.79</td>
<td>36.16</td>
</tr>
<tr>
<td>188</td>
<td>Jarvis Tobacco Grower</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>4.82</td>
<td>1.72</td>
<td>1.56</td>
<td>8.10</td>
<td>3.26</td>
<td>2.72</td>
</tr>
<tr>
<td>189</td>
<td>Jarvis Drill Phosphate</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>5.15</td>
<td>1.10</td>
<td>5.12</td>
<td>11.38</td>
<td>2.40</td>
<td>28.82</td>
</tr>
<tr>
<td>190</td>
<td>Soluble Bone and Potash</td>
<td>Springfield Fertilizer Co., Springfield, O.</td>
<td>5.42</td>
<td>2.92</td>
<td>3.22</td>
<td>11.56</td>
<td>2.14</td>
<td>21.80</td>
</tr>
<tr>
<td>191</td>
<td>Ammonia Phosphate</td>
<td>Indianapolis Fertilizer Co., Indp's., Ind.</td>
<td>3.77</td>
<td>3.80</td>
<td>3.05</td>
<td>9.22</td>
<td>4.23</td>
<td>1.80</td>
</tr>
<tr>
<td>192</td>
<td>Pure Raw Bone Superphosphate</td>
<td>Astroth &amp; Miller, Louisville, Ky.</td>
<td>4.10</td>
<td>9.38</td>
<td>13.48</td>
<td>3.98</td>
<td>3.98</td>
<td>28.70</td>
</tr>
<tr>
<td>193</td>
<td>Homestead Tobacco Grower</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>6.00</td>
<td>5.61</td>
<td>7.2</td>
<td>7.33</td>
<td>4.88</td>
<td>34.11</td>
</tr>
<tr>
<td>194</td>
<td>Homestead Corn and Wheat Grower</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>6.33</td>
<td>1.66</td>
<td>1.66</td>
<td>9.65</td>
<td>2.01</td>
<td>1.18</td>
</tr>
<tr>
<td>195</td>
<td>Jarvis Drill Phosphate</td>
<td>Detroit Carbon Works, Detroit, Mich.</td>
<td>5.78</td>
<td>2.05</td>
<td>2.55</td>
<td>10.36</td>
<td>1.37</td>
<td>21.87</td>
</tr>
<tr>
<td>196</td>
<td>Garden City Superphosphate</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>5.09</td>
<td>3.80</td>
<td>6.79</td>
<td>15.68</td>
<td>2.07</td>
<td>32.30</td>
</tr>
<tr>
<td>197</td>
<td>25 Phosphate</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>4.26</td>
<td>2.64</td>
<td>6.87</td>
<td>13.77</td>
<td>1.73</td>
<td>25.34</td>
</tr>
<tr>
<td>198</td>
<td>Prairie Phosphate</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>4.28</td>
<td>2.71</td>
<td>6.92</td>
<td>13.80</td>
<td>1.83</td>
<td>25.81</td>
</tr>
<tr>
<td>199</td>
<td>National Bone Dust</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>5.00</td>
<td>3.51</td>
<td>7.05</td>
<td>15.56</td>
<td>1.85</td>
<td>29.92</td>
</tr>
<tr>
<td>200</td>
<td>Fine Raw Bone</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>5.78</td>
<td>10.81</td>
<td>11.07</td>
<td>21.88</td>
<td>4.45</td>
<td>43.88</td>
</tr>
<tr>
<td>201</td>
<td>Raleigh's Bone Meal</td>
<td>N. W. Fertilizing Co., Chicago, Ill.</td>
<td>3.42</td>
<td>6.13</td>
<td>8.25</td>
<td>17.90</td>
<td>1.59</td>
<td>31.00</td>
</tr>
<tr>
<td>202</td>
<td>Bone Meal</td>
<td>Indianapolis Fertilizer Co., Indp's., Ind.</td>
<td>2.86</td>
<td>7.84</td>
<td>5.29</td>
<td>13.51</td>
<td>4.22</td>
<td>32.37</td>
</tr>
<tr>
<td>203</td>
<td>Ammon. Superphosphate of Lime</td>
<td>Amor &amp; Sons, Cincinnati, O</td>
<td>3.30</td>
<td>8.24</td>
<td>7.11</td>
<td>18.55</td>
<td>3.07</td>
<td>37.54</td>
</tr>
<tr>
<td>204</td>
<td>Raw Bone Meal (fine)</td>
<td>E. Rauh &amp; Sons, Indianapolis, Ind.</td>
<td>3.10</td>
<td>7.30</td>
<td>14.07</td>
<td>21.97</td>
<td>4.41</td>
<td>41.22</td>
</tr>
<tr>
<td>205</td>
<td>Raw Bone Meal (coarse)</td>
<td>E. Rauh &amp; Sons, Indianapolis, Ind.</td>
<td>3.77</td>
<td>7.37</td>
<td>14.14</td>
<td>21.91</td>
<td>4.41</td>
<td>41.36</td>
</tr>
<tr>
<td>206</td>
<td>Acid Phosphate, F. C.</td>
<td>P. B. Mathison &amp; Co., St. Louis, Mo.</td>
<td>6.90</td>
<td>4.29</td>
<td>7.87</td>
<td>19.06</td>
<td>3.90</td>
<td>206</td>
</tr>
<tr>
<td>207</td>
<td>Acid Phosphate, Navassa</td>
<td>P. B. Mathison &amp; Co., St. Louis, Mo.</td>
<td>10.54</td>
<td>4.12</td>
<td>3.91</td>
<td>18.66</td>
<td>4.27</td>
<td>207</td>
</tr>
<tr>
<td>208</td>
<td>Acid Phosphate, S. C. &amp; Navassa</td>
<td>P. B. Mathison &amp; Co., St. Louis, Mo.</td>
<td>8.76</td>
<td>3.27</td>
<td>5.77</td>
<td>17.79</td>
<td>4.17</td>
<td>208</td>
</tr>
<tr>
<td>209</td>
<td>Raw Bone Meal</td>
<td>P. B. Mathison &amp; Co., St. Louis, Mo.</td>
<td>10.44</td>
<td>12.24</td>
<td>22.22</td>
<td>4.18</td>
<td>43.20</td>
<td>209</td>
</tr>
<tr>
<td>210</td>
<td>Globe Wheat Fertilizer</td>
<td>Robt. B. Brown Oil Co., St. Louis, Mo.</td>
<td>4.54</td>
<td>1.14</td>
<td>0.99</td>
<td>5.77</td>
<td>4.78</td>
<td>87.58</td>
</tr>
<tr>
<td>211</td>
<td>Pure Raw Bone Meal</td>
<td>Astroth &amp; Miller, Louisville, Ky.</td>
<td>6.12</td>
<td>16.01</td>
<td>21.13</td>
<td>4.74</td>
<td>40.15</td>
<td>211</td>
</tr>
</tbody>
</table>

* Sample furnished by the Association of Official Agricultural Chemists, Committee on Phosphoric Acid.
THE MUTUALITY OF INTEREST BETWEEN THE BOARD OF AGRICULTURE AND INDIANAPOLIS.

BY HON. CALEB S. DENNY, MAYOR OF INDIANAPOLIS.

Mr. President and Members of the State Board of Agriculture:

I heartily welcome you to Indianapolis on this occasion of your annual convention, and congratulate you on the very favorable showing recently made in the report of your Secretary as to your last year's work.

The great and growing interest you represent deserves special consideration from every class of our people, and you, who give your time and talents to its advancement, deserve special courtesies from us all. The wonderful improvements recently made in the science of agriculture through the instrumentality of such teachings as you give have begun to compel the attention and challenge the admiration of every other class of citizens. Those of us who are only at the middle of life's journey have witnessed such important changes in the sowing of the seed and the reaping and garnering of the grain that we can scarcely believe our own knowledge of these grand achievements. With all these flattering accomplishments in the past to encourage us with hopes of still greater things in the future, the question of the duty of the State Board of Agriculture and the City of Indianapolis toward each other becomes an important one. I have, therefore, gladly accepted the invitation of your Secretary to say a few words at this meeting on the subject of "The Mutuality of Interests Between the Board of Agriculture and Indianapolis."

It is well known to us all that for a number of years past there has been bad feeling between some leading citizens of Indianapolis and the management of the State Board of Agriculture. I am not here to discuss the question as to who was right in the controversy which formed the basis of that misunderstanding. A renewal of the discussion would only tend to fan the dying embers of the old trouble into a new flame. I prefer to smoulder rather than revive them. Both sides have had their say, and both have no doubt said enough for the mutual good. The old controversy about the Exposition guarantee fund has become, as the boys would say, a "chestnut." It should be dropped and a new subject for debate proposed. That subject should be one upon the general features of which both the city and your Board can agree, and it would, of course, include the mutual interests of both.

The City of Indianapolis could get along without any State Fair at all, but it can get along a great deal better with it. So, on the other hand, you could hold your fairs outside of and without reference to this city; but you can hold much
better ones here, with our assistance, than you can elsewhere. Then, if these statements are true, the problem to be solved is a very simple one. It involves simply the question of good feeling and mutual good will between the members of your Board and the leading business men of the City of Indianapolis. For, with this condition of affairs existing, the things to be desired will naturally come about.

Fairs, such as you hold from year to year, will not cease to be interesting to a very large portion of our people. Indeed, it is no doubt true that the interest in this class of exhibitions will constantly increase. The progressive farmer is always ambitious to excel in the quality of his farm products, the manufacturer and inventor in their implements and wares, and the stockman in his herd. Their ambition can not be satisfied, except by instituting comparisons with the products, machinery and stock of others. In order to make these comparisons and get the judgment of experts upon the relative merits of their exhibits these fairs must be held.

I suppose the Indiana State Fair may be considered a permanent fixture here. In that view of the case, what can be done to mutually benefit the fair and the city? This is the question that should receive the careful attention of you gentlemen and the business men of Indianapolis, and it should be answered by acts.

Indianapolis has no Exposition of its own to offer as an inducement to bring strangers here, and hence I do not make any suggestions as to what might be the duty of its citizens in the premises if the city had such an attraction. It would seem to be the part of wisdom for our people to make the best of what we now have. When an Exposition is started, or seriously debated, it will be time enough for us to discuss the question as to what amount of time or attention we can afford to give to the State Fair, to the exclusion of our own private enterprise. As a resident of this city, its interests will always receive my first consideration. As things now exist, and as they will probably remain for some years, at least, I feel that I am doing the city a service by saying a kindly word and doing a friendly act whenever and wherever I can for the State Board of Agriculture; and, I might add, that I think our people here can always afford to do this, no matter what may happen. Why should the citizens of Indianapolis not encourage the State Board in preparing and holding its annual fairs? I fancy a few would answer this question by calling up the old trouble referred to above. But I would not consider that a good reason, as I have already intimated, and therefore no answer at all. There is every reason why we should help you. In the first place, all of you, whether you live in Central Indiana, or Northern, Southern, Eastern or Western Indiana, are our neighbors; in a political sense, a part of us. You frequently come among us. You gentlemen, as well as the patrons of the State Fairs, become, while here, our guests; hence we owe you and them the common courtesies due from the host to his guests, but while the visitors to the State Fair are our guests, they are also our patrons. Our merchants understand this. They replenish their stocks in anticipation of increased sales during fair week. But the complaint that is made by many of our people is, that there is not as much trade as the State Fair ought to bring. I believe this is true. And in this fact centers the argument for a recognition of the mutuality of interests between the city and your Board. The interests of the State Board demand larger crowds
ADDRESS OF WELCOME.

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at the fairs, and the interests of the city that they remain here longer than heretofore when they come. You want their quarters and half dollars at the ticket office, the hotels want their presence over night, and the merchants a little trade from them all before leaving the city. Too many of the people who come here to the fairs go home the same evening. Many of them see all of the fair that they care to in a single day, and for lack of other attractions go home. Can not some night attraction be devised? This would keep the crowds here. We all know what St. Louis does every year. There the city benefits the fair and the fair the city. The grand night parades and illuminations keep the people there who have been to the fair, and these attractions also take many people there in the first instance, who afterward visit the fair. By this mutual work and good feeling between the citizens and the fair management, the St. Louis Fair has established itself as the leading old-time fair in the country. It ought not to outrank the Indiana State Fair. We have a State rich in farm products, blooded stock, mineral wealth, manufacturing industries, and everything necessary to make as fine an exhibit as can possibly be made elsewhere in the West. And, besides, the facilities for reaching Indianapolis are unsurpassed by any city in the nation, and are superior to St. Louis.

What your Board most needs now is more ground for your fair on the line of a railroad, and, if possible, near the line of the Belt Road. I am glad to know that a movement looking to such improvement has been already started, and, as I understand, is now being earnestly considered. But whether such a change is made in the near future or not the fair can be improved, and the city, too, by united, friendly action. I would not presume to suggest a plan. But it is plain that there are many things awaiting concert of action by your society and the citizens of Indianapolis that will greatly improve the fair and at the same time redound to the credit and prosperity of the city. The Board of Trade and Mercantile Association can do much. Indeed, these two organized bodies and your Board can do everything required. The Mercantile Association can bring more people here during State Fair week than during any other time in the year, if it will get up independent excursions during that time. That would largely benefit the fair, in return for which your Board could, perhaps, do something to benefit the merchants. A grand night parade for one night in the week might be devised, perhaps, including illuminations, which would be mutually beneficial. The city now has a magnificent hall, in which musical entertainments on a large scale can be held. It might be utilized one or two nights in the week to keep the crowds here, and bring those here who would not otherwise come. There are many other suggestions that might be made, but these are all matters to be considered by committees of your Board and the city organizations referred to, and need not be enlarged on here. It seems to me such committees should be appointed, and meet for work not later than May or June.

There is another thing that should be done by the merchants, manufacturers and other employers of Indianapolis, at least by all those who can do so without manifest injury to their business. They should give their employees a holiday, or at least a half holiday, during fair week. This would greatly benefit the fair, as well
as furnish a day of much-needed rest and enjoyment to the toiling thousands of men and women of our city, many of whom, no doubt, have never visited the State fair, and never will, unless some such consideration is shown them. I will take pleasure in joining any movement looking to the consummation of such a result during your next fair.

I believe a meeting and friendly discussion of the matters here briefly referred to and suggested, by the members of your Board and representatives of the city, would result in much good to all parties concerned. No further words I might say at this time would aid you in that direction, and I deem it unnecessary to say more myself.

Let us all remember that "in union there is strength," and with this motto in mind go to work to mutually aid and benefit each other.

And, finally, as an incentive and aid to such mutual good feeling and desired results, will you pardon me for suggesting that the appointment of a member of your Board from the residents of this city may be worthy of your consideration at an early day.

"THE STATE BOARD OF AGRICULTURE AS AN EDUCATOR."

BY COL. J. B. MAYNARD, OF INDIANAPOLIS.

Mr. President and Gentlemen:

Permit me to say that I esteem your invitation to address you on this occasion as a compliment and an honor. I shall be gratified if what I have to say does not weary you.

My subject, "The State Board of Agriculture as an Educator," leads me to say that all institutions, by whatever name they are known, are, to a greater or less extent, educators. He who entertains the opinion that when a youth leaves school or college he has completed his education, has taken a very superficial view of the subject, and has much to learn. I have seen young men educated in school and college who were lamentably deficient in knowledge, and I have seen others who were not graduates, who possessed neither diploma nor title, vastly their superiors in understanding, discernment, judgment and comprehension.

The present is esteemed as pre-eminently a practical age. I refer to our own country. As a people we are not ideal. We care little for theories. We recognize demonstrations. That which works well when reduced to practice we accept—all else is laid aside. I am not here to recite a diatribe against educational institutions of any name or grade, nor yet to indulge in eulogy. I understand that I am addressing practical men, and as I am not a candidate for the blue ribbon in oratory I shall endeavor to steer clear of pyrotechnics.
BOARD OF AGRICULTURE AS AN EDUCATOR.

I assume that State Boards of Agriculture are educational in their influence upon society, eminently so, and I shall, as best I can, seek to prove the proposition. I shall assume that the State Board of Agriculture of Indiana is not as potent a factor in educational affairs as it ought to be, and I shall endeavor to explain the reason why.

In the year 1851 the Legislature established by statute the State Board of Agriculture of Indiana. This Board consisted of sixteen members, and the Legislature said that the Board should meet annually "for the purpose of deliberation and consultation as to the wants, prospects and conditions of agricultural interests throughout the State." I think there is no mistaking the meaning of the language used by the Legislature. If consultation and deliberation are not educational in their effects and influence we shall be required to revise our theory of education.

I am not inclined to quote largely from lexicons and text-books for definitions of the term "education." Some one has said that "the best educated man is not he who knows the most, but he who can do the most. Suppose I say, with all deference to higher authority, that he is the best educated man who knows most how to do most that which is necessary to be done. It occurs to me, Mr. President, that the man who knows most about what is necessary to be done is the best or the most educated man. I suppose that you would call that "practical education." I shall not object, though I am of the opinion that such education is broad enough to include all the law, medicine and theology the world requires, broad enough for all the poetry and art demanded for the happiness of the human family, all the Latin and Greek, Hebrew, Sanscrit and what not in the way of dead languages that by any possibility can be required by the people, or that can be of any real service to them.

But I observe that the Legislature required of the State Board of Agriculture, after this deliberation and consultation, this gathering of facts, this familiarity with conditions, prospects and wants of agriculture throughout the State, a report embodying results. The Board was not only to instruct the people, but the Legislature as well.

In looking back over all the years since the Indiana State Board of Agriculture has been in existence, I ask you, Mr. President, and gentlemen, what you think of an average Indiana Legislature as a pupil? Have you perceptibly increased its agricultural information? Have you broadened its views? Have you enlarged its mental capacities? Increased its brain power? Does it wear a larger sized hat than it did in 1851? Have you lifted it into a more rational conception of the importance of agriculture? If so, where is the proof?

The results attending the labors of the State Board of Agriculture to educate the Legislature have not been, it appears to me, specially flattering. I notice that in 1851, thirty-six years ago, the Legislature appropriated $1,000 for the use of the Board, and ordered 3,000 copies of its report to be printed at the expense of the State. In 1851, Indiana had a population of 998,416, and in 1885 a population of not less than 2,225,000, an increase of about 150 per cent., and yet, as between 1851 and 1887, the cash appropriation for the use of the State Board of Agriculture has been increased only $500, and you are permitted to publish only 2,000 more copies of your annual report. In 1851 Indiana only had 93,896 farms, while in
1880 she had 194,013 farms, and has now, I assume, 200,000 farms, and still, the Legislature continues to permit you to publish 5,000 copies of your annual report. If appropriations had kept abreast of the wealth-producing progress of agriculture you would now be permitted to print at least 20,000 copies of your annual report.

With such facts in full view, it occurs to me, Mr. President, that greater attention should be paid to the education of the Indiana Legislature, particularly in regard to the matter of agriculture, and with becoming caution I express the opinion that the State Board of Agriculture owes it to itself and to the great interests it represents, as also to the expectations of the people, to devote more attention to the education of General Assemblies.

In support of the proposition that the State Board of Agriculture was intended to be largely educational in its operations, I notice that Hon. Joseph A. Wright, who was Governor of the State and the first President of the State Board of Agriculture, in his annual report to the Legislature, dated February, 1852, said:

"Through the operations of a thorough system of organizations over the State, the Board will be able to collect, not only general, but particular and reliable information concerning the different soils of the State, the kind of agricultural labor that pays best, what articles are best adapted to such a soil and climate, the stock most in demand in the market, the various productions of each county in the State, different modes of farming by the best practical farmers, experiments on different soils with various crops; redeeming wet lands, the mode and system adopted; stock-raising, ditching, barns, stables, smoke houses, wells, spring-houses, modes of supplying stock water," etc. He also referred to the bringing together of the mechanics of our own and other States in the country at the State fairs among us, with the best specimens of their skill and labor. "These things," said Governor Wright, "are well calculated to foster and encourage the mechanical labor of the country."

"Again," said the distinguished Indianian, "the great advantages that result from the assembling of farmers, mechanics and manufacturers in association in which the productions of their skill and labors are exhibited, consists in a free interchange of views and opinions; you thereby stimulate industry, bring together the most distinguished mechanics of the State, with not only the work of their brains and hands, but they come together to inquire into the wants of the country, that they may return to their work-shops to perfect their inventions that have been suggested by these means. The manufacturer exhibits the results of his inventions and labors, the farmer the mode, process and improvements of the farm. The trials, tests and experiments that are thus exhibited will create a spirit of rivalry well calculated to develop the resources of the State and country."

If the language of Governor Wright is not violently misconstrued, it will be seen, I think, that he regarded the State Board of Agriculture as specially, eminently and chiefly an educational institution. It was the intention that it should bring together farmers, mechanics and manufacturers in associations to exhibit the products of their skill and their labor, and, in addition, there was to be a free interchange of views and opinions upon all important subjects relating, more or less directly, to agriculture, then as now the great interest of Indiana.
Men from all parts of the State, from all sections of the country, were to meet, compare notes, state facts, relate experiences, consult together and deliberate.

If such proceedings are not in the line of education, I would like for some university graduate, some Ph. D., A. M., A. B., LL. D., to explain why not.

It will be observed from what I have said that the State Board of Agriculture in the sense of its educational influence reaches and touches the mechanic arts. Not alone, be it said, mechanical contrivances which are known as agricultural implements, but more or less directly the entire domain of manufactures, commerce and transportation. Agriculture being the foundation of everything upon which civilization rests, must of necessity permeate everything from the ground upward or outward. If, then, education is as desirable as men would have us believe, it occurs to me that agriculturists should be the best educated men in the State, and that the State should expend more money to advance agriculture as an occupation, an industry, a science, than for any other educational specialty.

The reasons for this, I think, are obvious. Agriculture is the most important of all industries. The first necessity is bread, all others are secondary. Perhaps you offer an amendment, and say I should include clothing and shelter, thereby constituting a trinity of necessities, each of equal importance—food, clothing and shelter. Let the proposition stand as amended. It will not embarrass me. They are primal wants of the human family. They bring into prominence the importance of agricultural and mechanical education, which, as specialties in education, tower cloudward, like Alpine elevations, above all other departments of education. And here permit me to repeat what I have stated, that the organization of the State Board of Agriculture was designed to foster agriculture and the mechanic arts, that Indiana's greatest source of wealth and prosperity—agriculture—might receive its highest development.

Just here I desire to give a list of Indiana's educational institutions, because I want to use them to point a moral and adorn the educational story I am writing. Here are seven of them about which there is no controversy: State University, State Normal School, Purdue University, Institution for the Education of the Deaf and Dumb, Institution for the Education of the Blind, Institution for the Education of Soldiers' Orphans and for the Education of Feeble-Minded Children. I now add, because it suits my pleasure, the State Board of Agriculture and the State Horticultural Society.

As an original proposition, all things considered, of these nine educational institutions, which one ought to have been first established and the most liberally sustained by the State?

Passing by the well established fact that the real wealth of a nation consists chiefly in the knowledge possessed by its sons, and in this connection omitting reference to common schools, I confine myself to the educational institutions I have named, and again inquire which one of them, all things considered, ought to have been first established and the most liberally sustained from the public treasury?

Indiana is an agricultural State. Her farms—the products of her farms—will always stand at the head of the list when her sources of wealth are catalogued. I hold, therefore, that agricultural education from the first had the highest claim upon legislative consideration. But it did not receive first recognition. The State
University at Bloomington was established in 1828, and it was not until 1851, twenty-three years later, that the State Board of Agriculture was established by statute.

In magnifying agriculture, I in no wise seek to dwarf any other interest. In dignifying the State Board of Agriculture, I am not animated by any desire to lower in public esteem any other educational institution. But, sir, when I think of agriculture, of farm and field, of all their varied products, of the cattle, swine and sheep, of what it does for commerce and transportation, for manufactures, for swelling all the grand aggregates of the wealth of my State and my country, I confess to emotions of national pride, that are awakened by the contemplation of no other subject connected with the material interests, the wealth, prosperity and power of the country. What do we hear, sir, every year at certain seasons, when business is dull and languishing? This: "Business will revive when the crops begin to move." The moving of the crops does revive business; business is dependent upon the crops; without the crops there would be no business. Your cities would decay, your railway trains would stand still, ships would rot in their docks, and the hush of death would hold universal sway.

But in those far-away days the Legislature did not regard an agricultural education as important as a purely literary education; hence, the University was established and the State Board of Agriculture was thought of later; but I hold that since the date of its organization no Legislature has by any act evinced any creditable appreciation of the State Board of Agriculture in its educational influences, and if you except appropriations to Purdue University, you will look in vain for any legislative estimate of agricultural education at all commensurate with the vast importance of agriculture as an occupation.

In support of this proposition I desire to offer a few figures relating to appropriations for the maintenance of the educational institutions of the State during the eleven years last past.

For the State University .............................................. $270,000
For the State Normal School ........................................ 55,000
For the Deaf and Dumb Institute ................................... 582,000
For the Blind Institute .............................................. 306,000
For the Soldiers' Orphans' Home ................................... 237,000
For the Feeble-Minded Children .................................... 133,000

Making a grand total of $1,583,000 from 1877 to 1887, both inclusive; an average of $263,800 to each institution, and an average annual appropriation to each institution of $23,900.

Contemplating such large liberality, complaints are not heard; on the contrary, Indiansians point to the grand sum totals with pride, and comments glow with eulogistic commendation. I now inquire what has the Legislature done during the past eleven years for agricultural education in the way of appropriations? I reply, for the benefit of Purdue University appropriations amounting to $173,000 have been made; for the State Board of Agriculture, $16,500, and for the Horticultural Society, $3,200; a grand total of $192,700.
It should be understood that Purdue is said to be a college of agriculture and the mechanic arts, and has, I am persuaded, under the presidency of Hon. James H. Smart, entered upon a career of great usefulness to the agricultural interests of the State.

Having supplied the facts relating to appropriations to aid the work of education, we are permitted to see the rank accorded to agriculture. What is that rank? In a word it is the lowest in the list, and as you analyze the situation, the further you proceed the more humiliating the comparison appears.

Take, for instance, the State University; it is chiefly supported by agriculturists, but I do not suppose the term agriculture is ever heard within its sacred precincts. There they teach what is known as the "higher education," the classics, Greek, Latin, Hebrew, etc.

But, Mr. President, what about the State Board of Agriculture? I must maintain that it is, in a notable degree, one of the educational institutions of Indiana. Its supreme purpose is the diffusion of knowledge, obtained from reliable sources, relating to every department of agriculture. It has been engaged in this noble work since 1851, thirty-six years. During all these years the State Board of Agriculture has held its annual meetings for the purpose of consultation and deliberation upon the agricultural wants and prospects of Indiana. Every subject relating to the advancement of agricultural interests has been intelligently investigated. To the extent of its ability, the information obtained has been published for the benefit of farmers. Why, sir, as I glance through your reports, I am amazed at the vast amount of information contained in reports and addresses, which the Board has published. I am not here to "give you taffy," or indulge in flattery, but I say your annual reports, so far as I have been able to examine them, bear testimony to the fact that the State Board of Agriculture has been true to the trusts committed to it thirty-six years ago. I say that in the broadest sense it has been an educator of the people. It has educated every intelligent thing in the State, except the Legislatures, that has come and gone during the past thirty-six years. Let us see. During the past eleven years the Legislatures have donated for the education of the blind $306,000, or $239,500 more than for the education of the farmers' youth of the State. For the deaf and dumb boys of Indiana the Legislature has bestowed $582,000, and for the youthful agriculturists and their fathers $16,500, a difference in favor of the mutes of $565,500. Coming down to the feeble-minded children of the State, the Legislature has given, since 1879, $133,000, or probably three times as much as was ever given to the State Board of Agriculture since it had an existence. You have been given, during the past ten years, $1,500 a year to aid you in carrying forward your vast educational work.

Here again, the complaint is not that Legislatures bestow too much on the institutions named, but too little upon an institution which, in its influence upon the welfare of the State, makes it possible for Legislatures to bestow anything at all for benevolent purposes, the proposition being that for every dollar that the State expends upon agriculture she gets back more than four hundredfold.

I have said, Mr. President, that but for agriculture the Legislature would be unable to make appropriations for benevolent institutions, and that for every dol-
lar agriculture receives it pays back more than four hundred-fold. Such state-
ments demand verification. I will say that agriculture pays more than half of the
revenues of the State derived from taxation. The figures taken from official doc-
uments demonstrate the correctness of the statement. In 1886 the total taxable
property of the State, including railroads, as given by the State Board of Equali-
zation, was $792,953,762. This, at 30½ cents on the $100, yields $2,775,338. Of the
total taxables, agriculture represents $448,961,548, or $52,485,167 more than one-
half, and that, too, when placing to the credit of agriculture but 38½ per cent. of
the value of the personal property of the State.

The total revenue derived from taxation, I have said, amounted to $2,775,338; of
this agriculture pays $1,553,875—55 per cent., or $166,211 more than one-half.
But in 1886 the State taxed 336,754 polls at 50 cents each, yielding the sum of
$168,377. If one-third of this amount is credited to agriculture, then it will be
seen of $2,943,715 of revenue agriculture pays about $1,610,000, or 54 per cent.

But I have said for every dollar the State gives to agriculture it receives
back more than four hundred-fold.

In 1886 the State gave the State Board of Agriculture $1,500 cash, and per-
mitted it to publish 5,000 copies of its report at a cost of, say $2,500—total, $4,000.
Four hundred-fold would be $1,600,000, while in fact agriculture paid $1,610,000,
or $10,000 more than four hundred-fold. Permit me to ask, Mr. President, how
long the agriculturists of Indiana will submit to this unappreciative policy? Of
every appropriation the Legislature makes, and every dollar the State pays out,
agriculture, directly and without circumlocution, pays more than one-half. It oc-
curs to me, Mr. President, that agriculture in Indiana has been wanting in courage
when facing Legislatures; that agriculturists, who pay so much and get back so
little, have been wanting in self-assertion—that which is sometimes referred to as
"spine," "sand"—that something which enables individuals as well as nations to
assert their rights and secure them. Now, I apprehend that agriculturists, pro-
vided they ever demand anything of Legislatures—a fact which I very much
doubt—have appeared before such august bodies in the attitude of mendicants,
and with their hats under their arms and in tones betokening fear, have asked for
recognition.

The State Board of Agriculture ought not to be in the catalogue of the State's
benevolent institutions, nor ought it to appear in that attitude before a Legisla-
ture.

The State Board of Agriculture represents the wealth of Indiana, its 200,000
farms, and its more than 200,000 adult farmers. It represents the farm property
of the State, aggregating at least $800,000,000, hence it represents the great mass of
the taxpayers of the State and more than one-half of its wealth. Organized for
the purpose of collecting and disseminating information relating to the advance-
ment of agricultural interests, the State Board of Agriculture should estimate how
much of the revenues of the State it requires to carry forward its work, and then
demand that the appropriation shall be made. Why not? Who, but the men
connected with the State Board of Agriculture, are more capable of making the es-
timate? And when the estimate is made, who is there in the Legislature ready to
confront 200,000 agriculturists and say nay? Always provided that the 200,000-
agriculturists of Indiana will vote the way they plow. It is quite possible, Mr. President, that you might strike one Legislature that would disregard your demand, but I conceive that the State Board of Agriculture could then put into operation such forces that when the next Legislature convened the victory would be won.

I shall not discuss the many and perplexing financial problems that the State Board of Agriculture has been called upon to solve since its career began. I prefer to congratulate the Board upon the success that has crowned its labors in that regard, for I can see that from the first it has been confronted with circumstances which, to use a somewhat questionable phrase, meant 'root, hog, or die.'

I notice by glancing through the report of the State Board of Agriculture that the Board, since 1852, has held thirty-five fairs (this does not include the fair of 1886), at which it received $504,749, and paid out for premiums $183,623, and if the fair in 1886 duplicated receipts and disbursements for 1885, then it has received $621,304, and paid out for premiums $192,623, and has had $428,681 for other purposes. If the Board has received from the State $45,000, the total over and above premiums paid would be $473,681, or $9,000 less than the State has paid for the education of the deaf and dumb during the past eleven years.

I discover, Mr. President, that in your educational work there has been organized in Indiana seventy-five auxiliary agricultural societies, all engaged, like the parent society, in the work of educating farmers, collecting information, making, consulting and deliberating for the purpose of advancing the agricultural interests of the State. I notice that in 1885 sixty-eight of these auxiliary societies held fairs, making, with the State fair, sixty-nine fairs held in the State during the year. I want to say that these fairs are preeminently educational in their influence. They educate the head and the heart, the eye and the ear—the whole man and the whole woman. Now, I notice that the entries made at these fairs in 1885 numbered 93,923; of these there were 13,033 horses, 931 jacks and mules, 4,236 cattle, 3,631 sheep, 3,837 hogs and 6,091 head of poultry. What a splendid array of live stock, and, mind you, the best in the State, the best in the country. What a magnificent realization of the purposes of the founders of the State Board of Agriculture. In the mechanical department there were 4,178 entries, and here you have a verification of the original idea, the bringing together the farmer, the mechanic and the manufacturer. There were 11,907 entries in the agricultural department, 6,866 entries in the horticultural department, 16,841 entries of textile fabrics, and in the department of fine arts 5,456 entries. What a splendid array of object lessons, pictures for mind and memory, subjects for thought and study. Go to the fairs, behold the wealth of products of the farm, the cattle, horses, sheep and swine, grain and fruits, mechanical devices, the products of the dairy, and if you are not better educated when you go away, you are more stupid than the demure looking donkey whose wealth of ears excites astonishment. These fairs in 1885 paid out in the way of premiums $119,000, their receipts amounted to $256,039 and their disbursements to $225,893, leaving a balance of $30,146.

I suppose the fairs of 1886 made a still better showing, convincing all that, under the auspices of the State Board of Agriculture, agricultural education is going bravely on everywhere except in the halls of legislation. Mr. President, re-
calling the language of Governor Wright, predicting that under the auspices of the Board of Agriculture the farmer, the mechanic and the manufacturer would meet to exhibit inventions and the products of farm and factory, and that mutual benefits would result, I think the measure of success achieved must be to you and your associates specially gratifying.

Agricultural fairs have become largely mechanical fairs; as predicted, the manufacturer brings his wares, the mechanic the product of his skill, the farmer the product of his farm; each exhibits the best, and the thousands and tens of thousands of the people who attend the fairs are therefore permitted to see the best and the latest inventions, the best products of skilled labor and the best products of the farm; and as a consequence the people, the whole people, feeling the vitalizing influence, are constantly educated to a higher plane of endeavor. Their tastes are improved, their ambitions are more exalted, and they are brought into a closer alliance with the spirit of progress abroad in the world.

Mr. President, in the course of my remarks I have intimated that the original purpose of the State Board of Agriculture was to contribute by its influence to the advancement of the mechanical interests of Indiana, and every step of your progress demonstrates beyond cavil that you have not been unmindful of the trust committed to your keeping. But, sir, with the figures before me, it would be supreme folly to ignore the fact that the law-making power of the State has been sadly deficient in its appreciation of your services. Mr. President, since the State Board of Agriculture was organized the farms of Indiana have increased from 93,896 to 200,000, and the products of the farms have increased in a far greater ratio; manufacturing establishments have increased from 4,392, with a capital of $7,770,000, to 12,600, with a capital of $100,000,000. Railroad building has gone forward until there are but two counties in the State not penetrated by these modern highways of commerce and transportation, and I am persuaded that the State Board of Agriculture has been an important factor in achieving such grand results, and I am further persuaded that if the Legislature would decide to publish 20,000 copies of your annual report, every branch of business would feel in a vastly increased degree its stimulating and vitalizing effect. Then, the valuable information collected, then, the results of your consultations and deliberations relating to the wants and prospects of agriculture would have a wider circulation; then, you would have better farms and better farmers, better stock, better barns, orchards and fruits, better fertilizers and more of them, and still more abundant harvests.

Mr. President, we are taught to pray, "Give us this day our daily bread," or our daily food. Who, I ask, must respond to the prayer? No miracle is to be wrought to supply the world with bread. The duty devolves upon the farmer; the farm must feed the world. Heaven's benediction forever rests upon the plow. Indiana's greatness and glory depend upon the plow. I intend no invidious comparisons, but if the prayer is to be answered, "give us this day our daily bread," the plow must be kept running.

Mr. President, I think agricultural education, such as this Board is resolutely seeking to confer upon the present generation of farmers in Indiana, is well calculated to exalt and dignify the plow.
Mr. President, when we pray, “Give us this day our daily bread,” when we remember the promise, “Seed time and harvest shall not cease when we see God’s covenant bow in the clouds,” am I irreverent if I make the farmer a co-worker with God himself in redeeming the world from a wilderness? Or do I over-estimate the plow if I give it a superlative dignity and designate it as a chosen implement, in the hand of God and man, to work out the redemption of the world from the thralldom of ignorance?

For one, I believe there is more religion, more morality, more virtue on the farm than elsewhere in the world; more happy homes in the country than in the city.

We read of the “Sacred Mountains,” but, sir, I believe the farm lies nearest heaven, and that the better it is cultivated the nearer it approaches the home of the angels. The invigorating air, the sunshine and the shower, the wide-spreading landscape of forest, field and farm, where the ceaseless prayer, “Give us our daily bread,” is being forever answered in ripening crops; where there is a blending of the music of lowing herds and bleating flocks, the songs of birds and bee and babbling brooks, more melodies than the music of the spheres—these, with a thousand other attractions, combine to lift the farm, by power Divine, nearest heaven. They constitute the farm, the table land, where the educated farmer, men learned in philosophy and science, philanthropists, men who believe in the fatherhood of God and the brotherhood of man, love to meet and in high converse devise plans for the disenthralment of man from the curse of animalism, ignorance and superstition, until he shall expand to the fullest measure of his intellectual endowments.

Mr. President, I believe that the man who holds the plow grasps a scepter of power and empire such as no potentate ever wielded, from Cyrus to Caesar. Destroy the plow and you rend the earth back to a wilderness. You may break the scepters of kings, tumble down their thrones and trample their crowns and diadems in the dust, and the world will grow better as the work proceeds, but the plow must hold its place and grow in favor if seed-time and harvest are not to cease, and the prayer for daily bread is to be answered. Without the plow, it were useless for Jehovah to “set his bow in the clouds,” for, though “cold and heat, and summer and winter, and day and night shall not cease,” though the sun may warm and the rain refresh the earth, if the plow stands still the deserts shall bloom no more, nor gladness, with harvest-home songs, baptize the waste places of the earth.

O, man of the plow, and man of the farm,
You may proudly hold up your head,
For, O man of the farm, and man of the plow,
To you the world must look for bread.

O, man of the plow, and man of the farm,
To you the State may bow its head,
For the State must have the farm and plow,
Or the State must perish for want of bread.

O, man of the plow, and man of the farm,
When men devout the prayer hath said,
That bushes to silence the world's alarm—
"Give us this day our daily bread."

Then, O man of the farm, and man of the plow,
In alliance with God, be it reverently said,
That the man of the plow, and the man of the farm,
Must answer the prayer, "Give us this day our daily bread."
THE FOOD FISHES OF INDIANA.

BY DAVID S. JORDAN AND BARTON W. EVERMANN.

There are about 150 different species of fishes known in the waters of Indiana. Of these, about fifty kinds are found in the markets more or less frequently, and may be regarded as food fishes. Of the others, about ninety species are little fishes, chiefly minnows, chubs, darters, sculpins, and stone cats, too small to be used as food, and valuable only as food for the larger fishes. In this respect the many species of minnows have a considerable importance. The remaining ten species comprise fishes which are large enough for food, but which for one reason or another are not used for this purpose. Among these are the paddle fish and the shovel-nosed sturgeon, whose flesh is poor and tough; the gar pikes and the dog fish, whose flesh is not eatable at all; the hickory shad and the skip-jack, whose dry, thin flesh is full of small bones, and other species, which have no market value. If selected for the table once, these are carefully avoided ever afterward.

In the present paper is given a systematic list of the fifty species which are properly food fishes, with some account of the habits and value of each. Descriptions of each of these species can be found in each of the following works:

4. Excellent plates representing most of these fishes will be found in the volumes on the "Natural History of Aquatic Animals," by G. Brown Goode, David S. Jordan, Tarleton H. Bean, Charles H. Gilbert and others, lately published by the U. S. Census Bureau.

Family I. Acipenseride. The Sturgeons.


The Lake Sturgeon occurs in Lake Michigan and its large tributaries, likewise in the Ohio and lower Wabash. This sturgeon attains the largest size of any fish of the lakes, according to Prof. Milner.* They are taken only within comparatively shoal waters, and in some of the bays and among some of the islands they are very abundant. The largest specimen it has been our good fortune to see did not quite attain the length of six feet, though there are traditions in localities on

*Report Commr. Fish and Fisheries, 1872-73.
the lakes of nine-foot sturgeons. The average length of the mature ones taken is less than five feet. In numbers they will not compare favorably with any of the staple food fishes.

We have seen this sturgeon in the Louisville market, and are informed that it is occasionally handled by the dealers at Terre Haute.

Their spawning season is in June, when they ascend the streams, as far as the depth of the water and the various obstructions will permit, in large schools. They may sometimes be seen then in the evening, leaping from the surface, throwing their bulky forms entirely out of the water.

Regarding the game qualities of this species, Mr. Hallock says (Sportsman's Gazetteer, 4th Ed., 339): "The long projecting sucker mouth, situated almost under the center of the head, will sometimes suck in from the bottom the angler's baited hook, in which case, one may as well try to snub an old log. It is possible, however, to coax him to move occasionally, and then you may, or you may not, succeed in bringing him to gaff. As a game fish, the sturgeon is not a success."

**Family II. Siluridae. The Catfishes.**


This species abounds in the Ohio River and its larger tributaries. It reaches a larger size than any other catfish except *Ameiurus nigerius*, and is used for food. It is one of the best of the catfishes, although its unattractive exterior causes it to be less valued than some other species. It reaches a length of 2 to 3 feet.


This small species, which does not reach a length much greater than a foot, abounds in the ponds and bayous of Southern Indiana. The only objection to it as a food fish is its small size.


The common Bull-head may be known by the presence of 21 or 22 anal rays, a projecting upper jaw, and a truncate or a very slightly emarginate caudal fin.

This is the commonest of the catfishes in the great lakes and their tributaries, and abounds in nearly every stream and pond of our State. In the Ohio River it is less common. It does not reach a large size, but is a very fair food fish.

Thoreau speaks of the Horned-prout as a "dull, blundering fellow 'ike the eel, vespertinal in its habits, and fond of the mud. It bites deliberately, as if about its business. They are extremely tenacious of life, opening and shutting their mouths for half an hour after their heads have been cut off. A bloodthirsty and bullying race of rangers, inhabiting the river bottoms, with ever a lance in rest, ready to do battle with their nearest neighbor. I have observed them in the summer, when every other one had a scar upon his back, where the skin was gone, the mark of some fierce encounter. Sometimes the fry, not an inch long, are seen darkening the shore with their myriads."

This species is found in the southern part of the State, in the Ohio and Wabash. In its habits it differs chiefly from the bull-head in preferring grassy bottoms, where its mottled greenish coloration causes it to be not easily seen by the small fishes on which it feeds.


This is the only species of *Ameiurus* in which the lower jaw is the longer. From *Leptope olivaris* it may be known by the longer anal fin, as well as by the very different form and coloration.

This species is taken in the lakes, Ohio and Wabash, and sold as a food fish with the ordinary bull-head.

7. *Ameiurus natalis* Le Sueur. *Yellow Cat.*

This is an extremely variable species as regards color and form. It is the only Indiana catfish having the caudal fin not forked and with more than twenty-three anal rays. Specimens from different waters vary much from each other. A very fat, chubby form is occasionally seen, which looks very unlike the ordinary form.

This is perhaps the most abundant species of the lakes, ponds and bayous of Indiana, being tolerably common throughout the State. It ranks well as a food fish, but does not reach a very large size.


This species may be known from the other *Ameinri* by the forked tail. This species is the common catfish of the lake fisherman in contradistinction to the bull-head, as *A. nebulosus* is usually called. In the Ohio and Lower Wabash it is known as the *Mississippi cat.* It is found only or chiefly in the larger bodies of water, and reaches a very great size. It is a very important food fish in our larger cities, though its flesh is rather coarse and flavorless. We have seen specimens of nearly a hundred pounds' weight, and have heard of catfish weighing two or three hundred pounds, but they were probably weighed by guess.

9. *Ictalurus punctatus* Rafinesque. *Channel Cat, Blue Cat, White Cat, Silver Cat.*

This common species may be known from the other white catfishes by the position of the eye, which is not wholly in advance of the middle of the head. It is very abundant in the Ohio and its larger tributaries, but does not usually ascend the smaller streams. It probably ranks first among our catfishes as a food fish, its flesh possessing a peculiarly delicious flavor.

The species prefers clear water, being averse to mud, and is much less tenacious of life than the *Ameiuri* are. Its singular form and silvery colors render it an attractive aquarium fish.
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The idea is prevalent that this is our largest catfish. The largest specimen we have ever seen would hardly weigh over five or six pounds; and all the large "blue cats" which have been shown us belong to *Ameiurus nigricans*. I have seen the adult of *I. pumilus* put on the hook as "live bait" to attract *Ameiurus nigricans* at Cumberland Falls, in Kentucky. (Jordan.)

10. *Ictalurus furcatus* Cuv. and Val. *Chuckie-headed Channel Cat.*

This is the only catfish in Indiana having more than thirty rays in the anal fin. It is found in the larger streams from the Ohio Valley to Texas, but does not appear to be common. As a food fish it is not to be distinguished from the common channel cat.

FAMILY III. CATOSTOMIDE. THE SUCKERS.


This species, which is generally abundant in the larger streams of the Mississippi Valley, is readily distinguished from the other buffalo fishes by the large terminal mouth and very thin, smooth lips.

It abounds in the Ohio River and its larger tributaries, where it reaches a considerable size, a well-grown specimen weighing 15 to 25 pounds. It is used everywhere as food, and sells readily, but its flesh is full of small bones, and scarcely worth the picking. We have seen good-sized specimens in the markets at Louisville, Terre Haute and Lafayette.

12. *Ictiobusurus* Agassiz. *Big-mouthed Buffalo, Black Buffalo.*

From the other species of the genus, this species may be known by the larger mouth, and the less elevated and compressed body. Its colors are also darker than those of any other of the buffalo fishes.

This fish occurs in the Ohio River and its larger tributaries, but is rather less abundant than either *I. cyprinella* or *I. bubalus*. It reaches a considerable size, and is of some value as a food fish.


This species, which is abundant in the larger streams of the Mississippi Valley, may be distinguished from the other buffalo fishes by its higher back and smaller mouth. It reaches about the same size as the others and is of about the same value as a food fish.

Besides these large species of buffalo, three other kinds smaller in size, paler in color and with higher dorsal fin, occasionally come into the markets and are known as "Quill-backs," "Skim-backs" or "Carp-suckers." These are *Ictiobus carpio, Ictiobus velifer* and *Ictiobus deformis*. All of these are poor food fishes.
14. *Cycleptus elongatus* Le Sueur. **Black Horse, Gourd-seed Sucker, Missouri Sucker.**

The black horse may be known by its small head and long dorsal fin. It is not rare in the Ohio and Lower Wabash, but does not often ascend the smaller streams. At the falls of the Ohio it is frequently but irregularly taken, and is known in the Louisville market as the "gourd-seed sucker."

According to Dr. Kirtland, it migrates down the river at the approach of winter. As a food fish it is esteemed more highly than any other of the family.


This Sucker may be known by the great number of scales in the lateral line, no other Indiana species having as many as 65 to 70, except the northern sucker (*Catostomus*), found in Lake Michigan, which has upward of 100.

It reaches a length of 1 to 1½ feet, and is, perhaps, the most abundant of our suckers. It swarms in every pond and stream, and is the species to which the name "sucker" primarily belongs. It varies greatly in form, size and color in different streams. While its flesh is soft, poor and not of much value as food, yet great numbers are caught throughout the State, thus making it a fish of considerable importance. It is one of the numerous tribe of fishes which tempt the small boy, and may be found on every urchin's string when he comes home from the millpond.

16. *Erinnyson sucetta* Lacépède. **Chub Sucker, Creek Fish, Sweet Sucker.**

This is the only sucker of Indiana without a lateral line which has not a series of black spots along the rows of scales on the sides of the body.

It is found generally distributed in all the waters of the United States east of the Rocky Mountains, and is common in almost every stream of Indiana. It is one of the smallest suckers, rarely reaching a length of a foot. It is more than usually tenacious of life, and bites readily at a small hook, but, owing to its small size, is not of much value as a food fish.

17. *Minotrema melanops* Rafinesque. **Striped Sucker, Spotted Sucker.**

This species may be best known by the coloration, each scale along the sides having a conspicuous dark spot, which forms dark stripes along the series of scales.

The striped sucker is abundant in the lake region and grassy ponds throughout the State. It is fond of clear, sluggish waters. It is a handsome fish, and the young, being very tenacious of life, are attractive aquarium fishes.

It may be used as food, but as a food fish it is more salable than edible.

This species may be known by the presence of a rather large mouth, and a moderate dorsal fin.

The common red horse reaches a large size, and is used as food, although its value is not great. The species is found in all clear waters in the West, and ascends the small streams in May for the purpose of spawning. It is not very tenacious of life, and in the aquarium dies on the least suspicion of impure water.

Two or three other kinds of red horse are found in the State, but as food fishes all are alike.


This large, coarse species, whose habitat is the Mississippi Valley and the Upper Lake Region, can be *certainly* known only by the examination of its pharyngeal teeth.

It is larger than the common red horse, but as a food fish it is not to be distinguished from it.

**Family IV. Cyprinidae.**

The only member of this family which is of any importance as a food fish is:


The common carp is a native of China, where it has long been kept in a semi-domesticated condition. From China it has been introduced into the waters of Europe, and from Germany into those of America. It grows more rapidly than most of our native fishes, and being chiefly a vegetable feeder, loving sluggish waters, it is especially adapted for cultivation in grassy ponds. It is not necessary, in the limits of the present paper, to enter into the details of carp culture. It is sufficient to say that the carp is a fair food fish, best when reared in clean water, and that it bears much the same relation to the best native fishes that chickens do to game birds or pigs to game animals. The carp is a half-domesticated fish, and ten times as much fish meat can be obtained by raising carp, as will result from filling a pond with the best of our native fishes. The carp is not a game fish, however, and there is no more “sport” connected with catching it than is connected with catching chickens in a barn yard.

**Family V. Salmonidae. The Salmons.**


This fish inhabits the deep, cold lakes from New Hampshire to Alaska. Little distinctive is known of its habits. It is never taken in great numbers, and is mostly found in deep water. In this State it occurs only in Lake Michigan.

The average white fish weighs from two to three pounds, a large one from six to seven. Rare specimens are caught, however, of much greater weight, sometimes turning the scales at twenty pounds. (Dr. G. A. Stockwell.)

The white fish very rarely takes the hook, and is in no sense a game fish. It is taken in all the great lakes in very great numbers, formerly with seine, but now chiefly by means of gill nets and pound nets. Among the fishes of Indiana, it is the most important, both as to quantity taken and quality as food. Attempts at artificial propagation have been very successful. The fullest and best account of the habits of this fish is to be found in the Report of the U.S. Commissioner of Fish and Fisheries, 1872-3, pp. 43-64, written by the late Prof. J. W. Milner. To this report the reader is referred for details.


Habitat, Lake Michigan, Lake Superior; one specimen in the U.S. National Museum from Lake Ontario. Said to occur in small lakes in the interior of Michigan. Little is known of the habits of this Cisco. Prof. Milner observes: “The Cisco of Lake Michigan, not to be confounded with the Cisco of Lake Ontario, is a fish frequenting the deep water. It is taken in considerable quantities at depths of from thirty to seventy fathoms, and is the principal food of the salmon, or ‘Mackinaw trout.'” Prof. Milner further remarks that the depth of fifty fathoms “may be considered in the deeper lakes the zone of the Mackinaw trout and of the Cisco throughout the spring, summer and fall, with the exception, in the case of the trout, of the spawning season.”


The lake herring, which is no herring at all, but a kind of white fish, ranges through the great lakes and northward to Alaska and Labrador. It is very abundant, usually frequenting shallow waters.

From other white fish this species may be known by its slender, herring-like form and projecting lower jaw.

The lake herring is found throughout the lake region in enormous quantities. It inhabits comparatively shoal waters, and goes about in vast schools, “crowding into the pound nets in masses until the cribs are filled to the surface of the water. In Lake Erie frequently a corner of the net is lowered and a large proportion of them allowed to escape before the remainder are thrown into the boat. Although they have been taken in this way for years, there is no apparent diminution in their numbers. Perhaps the little disposition on the part of the fishermen to catch them in some measure accounts for this fact, though there must be as well some
natural advantages in their prolificity and in the tenacity of life of the egg. They are little sought after, because they are not a favorite fish in the market, being rather deficient in qualities as a fresh or salt fish, though having no objectionable flavor. They are small and thin when opened, and become shrunken when pickled. The profit on them to the fishermen is less than on any other fish handled from the lakes, because of the low price they command in the markets, and the expense of dressing and packing is much greater than in white fish, trout or pike, because of their small size. Differing from the white fish in the construction of the mouth, it being terminal, they more readily take a bait, and may be fished for with hook and line with a suitable bait. Insects are the best for this purpose, though they are frequently taken with a minnow. The contents of the stomach have been obtained in but a few instances, the fish being taken almost exclusively in the pound nets, and in these they have generally remained long enough to digest the stomach contents. They are found, by an examination of their stomachs during the spawning season, to be spawn eaters of the worst character, their stomachs being crammed with white fish ova, and considering the great number of the herring, and their vicinity to the spawning grounds, the destruction they effect must be very great.” (Milner.)

The spawning season is about the last of November. It is thought that the species does not migrate for the purpose of spawning, but remains in the shoal waters, where it is commonly taken.

In the deep lakes of Northern Indiana (Tippecanoe, Eagle, Maxinkuckee, etc.), and in similar lakes in Wisconsin (Geneva, Oconomowoc, Chain, etc.) a fish is found, known as the Cisco, which is generally thought to be a different species from the lake herring. This opinion was formerly held by the senior author of this paper, who introduced it into nomenclature, giving the name Argyrosomus sioco to the fish. He finds no structural differences, however, and now believes them to be specifically identical, the cisco being a local variety, modified in its habits by its residence in the smaller lakes.

The following account of the habits of the cisco of Lake Tippecanoe is furnished by the late Judge J. H. Carpenter, of Warsaw, Indiana:

"Some years ago, probably about 1870, these fish were discovered on the north side of Tippecanoe Lake by Isaac Johnson, and at each return of their spawning season, which is the last of November, they have appeared in large numbers. They are not seen at any other season of the year, keeping themselves in the deep water of the lakes. The general opinion is that they will not bite at a hook, but Mr. Johnson says that he has, on one or two occasions, caught them with a hook.

"The spawning season lasts about two weeks, and they come in myriads into the streams which enter the lakes. There are large numbers of persons who are engaged night and day taking them with small dip-nets. They are caught in quantities that would surprise you could you witness it. Those who live in the neighborhood put up large quantities of them, they being the only fish caught in the lakes which will bear salting. Some gentlemen who have been fishing to-day (December 8, 1874) inform me that the run is abating, and that in a few days the fish will have taken their departure for the deep water of the lakes, and will be seen no more until next November."

This species inhabits deep waters of Lake Michigan, especially abundant in Grand Traverse Bay.

From the lake herring, the larger size, stouter form, and especially the deep blue-black color of the lower fins readily distinguish it.

This species is as yet known only from the deep waters of Lake Michigan, where it is found in company with Coregonus hoyi. It is occasionally seen in the markets of Chicago, sometimes in considerable numbers. It reaches a length of 12 to 18 inches, and an average weight of more than a pound. Its qualities as a food fish do not differ materially from those of the white fish.


Little is known of the habits of this handsome white fish, which is very rare as far south as Lake Michigan.

27. Coregonus labradoricus Richardson. Sault White Fish.

This species is found in some abundance in Lake Michigan. At the Sault Ste. Marie it runs in great numbers in August from the lower lakes into Lake Superior. As a food fish it is very similar to the common white fish, although somewhat inferior to the latter.


The Great Lake Trout is found from the great lake region and lakes of Northern New York, New Hampshire and Maine to Montana and northward. It is very abundant in the larger bodies of water, varying somewhat in size, form and color in different lakes. It reaches a length of two to four feet, and an average weight of about four pounds. Specimens weighing fifty to eighty pounds are not infrequently taken.

* When adult the lake trout may be distinguished very readily by its large size and gray spots. The young very closely resembles the brook trout, and has equally small scales. It can always be known (a) by the presence of teeth on the median line of the vomer, behind the front patch, and (b) by the presence of a patch of distinct, stout teeth on the hyoid bone or root of the tongue. The brook trout has teeth only on the front of the vomer and on the margin of the tongue.

The wide range of this species and the great variety in the waters which it inhabits, and the food on which it lives, render it more than usually subject to variations in size, color and general appearance. It is stated that similar variations occur in its habits.
According to Prof. Milner, of whose writings pertaining to our food fishes we have made free use, the trout of the great lakes is one of our three most numerous fishes (trout, white fish and lake herring), and, except the sturgeon, it attains the greatest weight of any of the lake fishes. It is captured almost exclusively by gill nets, though the pound nets in some portions of the lakes take them during the spawning season, and in the winter a great many are caught in the bays through holes cut in the ice.

As compared with the white fish, their merits as a fresh fish are relative to taste, though most people prefer the latter. Salted trout are inferior to salted white fish, and bring a lower price in the market.

Their migrations, so far as known, are confined to the spawning season. They do not ascend the rivers, and although they occur in inland lakes connected by the main lake by rapids, there seems to be no evidence of their ever having been taken or seen in the outlets. Except during the spawning season, they remain chiefly in deep water, a depth of thirty fathoms being the most favorable ground for their capture.

The lake trout is a ravenous feeder. The fishermen say of him that "he always bites best when he is fullest."

In Lake Michigan the food of the trout was ascertained to consist chiefly of the Cisco (Coregonus hoyi). The prevailing notion that they feed largely on white fish has not yet been confirmed by observations. During most of the year they live in deeper water than that in which the young white fish are found. Their exceeding voracity induces them to fill their maws with singular articles. When steamers pass the refuse from the table is eagerly seized by the trout. A raw peeled potato, a piece of sliced liver, pieces of corn cobs in the green season and a piece of ham bone are some of the articles which have been found in their stomachs.

They are readily taken with a hook baited with pieces of fish. They are a sluggish fish to pull in, taking hold of the bait with a tug at the line, and then allowing themselves to be pulled to the surface, with no more vibration in the line than if a heavy sinker were the weight at the end.

The spawning season is toward the last of October, about a month earlier than that of the white fish. The localities usually selected for spawning are rock bottoms in seven to ninety feet of depth.

The decrease in the number of the lake trout is not as apparent as in the white fish. The pound nets have not made the extensive inroads upon their numbers, and none but mature fishes are taken. The larger ones are less numerous, and it is claimed the average weight of the trout is less than in former years.

Like all other Salmonoids, the lake trout has proved to be well adapted to artificial culture. The one drawback with them is the difficulty of obtaining the spawn in October, when the rough weather renders a visit to the spawning grounds one of difficulty and danger.

The common brook trout (Salvelinus fontinalis) is not native anywhere in Indiana. We are informed, however, that they are reared by Baker Brothers in a pond at Rome City, Ind., where they are said to do well.
FAMILY V. ESOCIDAE. THE PIKES.


This little pike is found throughout the entire Ohio Valley, and in streams tributary to the Great Lakes from the south; also in the Upper Mississippi Valley.

From the other pikes of this region this species may at once be distinguished by its entirely scaly opercles, and its small size and slender form.

This little pike is especially abundant in the streams tributary to the Ohio. In the spring it is found in great numbers in the ponds formed by the overflow of the streams. Vast numbers of them are destroyed every year by the drying up of these ponds. In the spring it ascends all small streams, and it is often found in temporary brooks in cornfields and other unexpected places, remote from its native waters. People finding pickerel thus stranded often stoutly affirm that they "rained down." This species does not often reach a length of more than a foot, and thus, although its flesh is very palatable, it is not of much importance as a food-fish.


The lake pickerel reaches a length of two to four feet and is found in the waters of Northern North America, from the Great Lake region to Alaska, and in all waters of Northern Asia and Europe, it being one of the most widely diffused of fresh-water fishes. It is occasionally taken in tributaries of the Ohio River, but it is common only in the northern part of the State.

This pike may be known at once by its spots, which are pale or yellowish on a darker ground, and by its scaly cheeks and half-bare opercle.

The common pike is rather abundant in all the streams and ponds tributary to Lakes Erie and Michigan, as well as in the lakes themselves.

It is an important food-fish in the markets, and is readily sold, although it can hardly be said to be a fish of the very first grade.

This species has long served as the emblem of rapacity among fishes. "They are mere machines for the assimilation of other organisms," feeding freely upon any animate thing which they can catch, and fortunately they can sometimes catch each other.

It is stated that Dr. E. T. Sturdevant once "put two young pickerel about five inches long in a trough with a great quantity of little *Cyprinoids* of about one inch in length. These two pickerels ate 122 minnows the first day, 130 the second day, 150 the third day, and increased one inch in length in forty-eight hours." In this statement the rate of growth is, of course, exaggerated, but they will unquestionably devour minnows until the tail of the last one hangs out of the mouth, there being no room to swallow it.

The pike is a gamy fish, taking the hook readily. Fishing for it through the ice, when the skating is good, is considered an exhilarating pastime.

Prof. Cope says: "For ourselves we do not join in the condemnation visited on the pike by some, and have a liking for its flesh. If its increase can be restrained instead of favored, in waters which produce the best species, it will cease
to inflict much injury by its voracious habits, for it naturally haunts still or grassy waters, where it devours fishes inferior to itself, as eels, catfish and frogs. On the other hand, we do not think the pike needs any protection, as he has many natural advantages in the struggle for existence, but he should not be destroyed except for the table.” (Rept. Fish Commr. Penn. for 1879–80, 107.)


The muskallonge is found throughout the entire great lake region and lakes of British America, seldom ascending rivers except to spawn. It is also found in the Upper Mississippi and in the Ohio Valley.

This great pike reaches a length of 3 to 6 feet or even more, and is by far the largest of the pikes, and the largest game fish of American fresh waters.

It may be at once known by the absence of pale spots, it being either dark-spotted on a lighter ground color, or else nearly plain dark olive green. Most writers who have mentioned it have confounded it with the common pike, although Dr. J. P. Kirtland long since well pointed out the difference.

“The ground color on the sides of the muskallonge is always light, a mixture of golden and silvery luster, maculated with dark oblong or roundish spots, while on the other the ground coloring consists of dark reticulations, relieved with irregular, yellowish spots, not placed in rows. Our fishermen say that the muskallonge is spotted with black and the pike with yellow.”

The muskallonge is much less common than the pike, and is found almost exclusively in the deep waters of the lakes, “except for a few days in spring, when it runs into the mouths of rivers to spawn.” It reaches an immense size. Dr. Kirtland mentions one that was more than five feet in length, and weighed over sixty pounds. The largest one of which we have a record was six feet long and weighed eighty pounds.

Dr. Kirtland informs us that “epicures consider it one of the best of fishes of the West,” and Mr. J. L. Beaman affirms that, “as a food fish there is nothing superior to this. He ranks with the salmon and the speckled trout, and surpasses the black and striped bass. The meat is almost as white as snow, fine grained, nicely laminated, and the flavor is perfect.”

The muskallonge is as voracious as the pike, and 80 pounds of muskallonge represent several tons of minnows, white fish and the like. It is not a common fish. Its great size and voracity account for this. “It is a long, slim, strong and swift fish, in every way formed for the life it leads, that of a fierce and dauntless marauder.” (Hallock.)

“Angling for mascalonge,” says Thaddeus Norris, “is the same as for the pickerel, the spoon being almost universally used. They are active and have more pluck than the large pickerel; though any angler who holds a stout trolling-rod, with a good multiplying reel, and a hundred yards of good line, if he is cool and waits assiduously on his enemy, is sure of him. I had rather trust to a good grip on the nape of the neck, than to gaff-hook in getting one into the boat.”
I know of old anglers who have experienced better things who make long excursions in pursuit of *muskallonge*, who will sit on a cushioned seat with a cushioned back in the stern of a boat, and suffer themselves to be pulled about all day, with a trolling rod extended from each side. I never could appreciate this inactive mode of taking fish, which is little better than cockney punt-fishing, and does not require one-tenth the skill. If spoon-fishing had been practiced in Maelzel's day, and that ingenious man had been an angler, no doubt he would have constructed an automatic pickerel fisher."

Several anglers recently have taken the view that the unspotted muskallonge is a species different from the black-spotted form, and the former has been lately distinguished as a "new species," under the name of *Esox immaculatus*, Garrard.

We regard the two as identical, the variations in color being apparently of minor importance, due to differences in the water or other matters of environment.

**Family VII. Anguillidae. The Eels.**


The common eel is found in all the larger streams of Indiana, into which it comes from the sea. It is an excellent food-fish, but it is nowhere in the State very abundant, and therefore has little economic value.

**Family VIII. Centracchidae. The Sun Fishes.**


The large-finned bass may be known at once by the presence of 7 to 9 anal spines, and 11 to 13 spines in the dorsal fin.

The species is found from Southern Indiana southward in the deep and sluggish streams of the lowlands. Prof. S. A. Forbes reports it as being abundant in Southern Illinois, near Cairo. It reaches a length of half a foot, and is of some value as a food fish.


This species attains a length of about a foot. From all other species, except *P. sparooides*, it may be known by the presence of about six spines, both in the anal and dorsal fins.

The species is abundant in the Ohio River and its larger tributaries, and is of much value as a food fish. It possesses some of the "gamy" qualities of the black bass, but to a less extent. It prefers still waters and ponds, and seldom ascends small streams. It is to be preferred to most of our other sun fishes as a fish for stocking ponds.

This is a widely distributed species, occurring in abundance in the Great Lake Region, in the Upper Mississippi Valley, and in the Missouri. In the great lakes it is taken in great numbers, and in the small lakes of Northern Indiana it is also abundant. It ranks very high as a food-fish. In most respects it agrees with the crappie, from which most anglers do not distinguish it.


The rock bass is abundant in all the streams and ponds of the State. It reaches a length of about a foot, and is an excellent pan fish. It possesses some gamy qualities and is deservedly popular as a food-fish.

37. Chaenobryttus gulosus Cuv. and Val. War-mouth.

This species is found from Lake Michigan West and Northwest. It is a stout, voracious species, greatly resembling the rock bass. It is a "gamy" fish, and, where common, is a valuable food fish. It lives chiefly in sluggish, grassy waters over a muck bottom.

38. Lepomis cyanellus Rafinesque. Green Sunfish.

The green sunfish abounds throughout the entire Mississippi Valley. Throughout the Ohio Valley it is one of our most abundant fishes, occurring in every stream and pond. Its flesh has a delicious flavor, and the only objection to it as a food-fish is its small size.


This species occurs in great abundance throughout the Ohio Valley, and rather more sparingly in tributaries of Lake Erie, Michigan and the Upper Mississippi. It reaches a length of six or eight inches, takes the hook readily, and is of little value as a pan-fish, its size being too small.


This sunfish, which reaches a length of six to ten inches, is a widely distributed species, being abundant in the streams and ponds of Indiana and Ohio. It may be readily known from others of the genus by the dusky blotch on the last rays of the dorsal, and the absence of blue stripes on the cheeks. In the lakes, where it reaches its greatest size, it is valued as a pan-fish, ranking with Ambloplites rupestris and Lepomis gibbosus.


This is one of our most abundant sunfishes and is found generally distributed throughout the northern third of the State, but is rarely seen southward. It takes the hook readily and ranks well as a pan-fish.
42. Micropterus salmoides Lacépède. Large-mouthed Black Bass.

Habitat—Manitoba to Florida and Mexico, and all intermediate waters.

This species may be known from the one following by the larger mouth, larger scales, of which there are less than seventy in the lateral line. The young may be known at once by the color, the ground here being much paler than in the other, and there being a broad blackish band along the sides.

This species is more sluggish than the small-mouthed, and is more frequently found in still waters and ponds. It reaches a length of one to two and one-half feet, and a weight of six to eight pounds.


The small-mouthed black bass may always be certainly distinguished from the other species by the smaller scales, there being seventy to eighty scales in the lateral line.

This species is usually placed first among the game fishes of the State. It frequents clear waters, especially those with some current, and is averse to mud. It is much less frequently found in ponds than the large-mouthed bass. Dr. Henshall, the champion of black bass fishing, places the two species higher as game fishes than the trout. In Indiana, where we can have no trout, and where the black bass has of necessity pre-eminence, we can well afford to accept his verdict. As table fishes, however, the trout, as well as the white fishes, and perhaps the pike and the channel cat also, are certainly superior to the black bass.

As to the relative merits of the two species, Dr. Henshall remarks: "The small-mouthed black bass is thought by some to be a gamier fish than the large-mouthed variety; indeed, I have sometimes thought so myself. But this notion, like the gustatory superiority of the canvas-back among ducks or the exquisite ambrosial flavor of Veuve Cliquot among wines, exists more in imagination than in reality. Both varieties of the black bass are equally good as game fish, and equally good for the table."

For further discussion of the merits of the black bass the reader is referred to Dr. Henshall’s admirable “Book of the Black Bass” (Cincinnati, Robert Clarke & Co., 1881.)

Family IX. Percidæ. The Perches.


The perch is found throughout the entire Great Lake Region and upper portion of the Mississippi Valley, and in all streams east of the Allegheny Mountains south to Georgia. West of the Alleghenies it does not occur except in the lake region and the upper waters of such streams as the Wabash, Illinois, Rock, etc., rising in the same water-shed with streams flowing into the Great Lakes. In the upper courses of the Wabash it is very abundant, but in the valley proper of this and other Indiana rivers it is not found. It is very abundant in Lake Max-
inkuckee and the other small lakes in Northern Indiana. The perch is a voracious and gamey fish, readily taking the hook, and being a handsome fish it readily finds sale in the markets. Its flesh is, however, inferior to that of the bass or pike perches.

"The common perch, *Perca flavescens*, which name describes well the gleaming, golden reflections of its scales as it is drawn out of the water, its red gills standing out in vain in the thin element, is one of the handsomest of our fishes, and at such a moment as this reminds us of the fish in the picture, which wished to be restored to its native element until it had grown larger.

"The perch is a tough and heedless fish, biting from impulse, without nibbling, and from impulse refraining to bite, and sculling indifferently past. It is a true fish, such as the angler loves to put into his basket or hang on the top of his willow twig on shady afternoons along the banks of the streams. So many unquestionable fish he counts, and so many shiners which he counts then throws away"—Thoreau.


The wall-eyed pike, which reaches a length of two to three feet and a weight of twenty to forty pounds, is found in the Mississippi and Ohio Valleys, the Great Lake Region, the streams of the Atlantic Slope south of New England, and north to the fur countries.

"It possesses great activity and strength, and is a ravenous destroyer of perch and other species. Were it not so superior in every way to all others, this habit might condemn it; as it is, we regard it as one of the best species we possess. In the South it is easily caught, and forms the principal table fish for the various places of resort, where it can be obtained."—Cope.

In our State this is one of our most important food-fishes. Great numbers are annually taken in Lakes Erie, Huron and Michigan, and shipped to various parts of the country East and South.


The sauger is found in the St. Lawrence River, Great Lake Region, Upper Mississippi and Missouri rivers; also in the Ohio, where it is somewhat abundant. From *Stizostedion vitreum*; this species may be distinguished by the different form and coloration, particularly the markings of the dorsal fin. This species has, moreover, always fewer dorsal rays, more scaly cheeks and permanent armature of the operculum.

The gray pike never reaches a large size—never, perhaps, exceeding fifteen to twenty inches in length. It is abundant everywhere in the Great Lakes, and is of considerable value as a food fish, though less so than the larger species, *S. vitreum*. It is common in the Ohio River, where it is probably indigenous, although the fishermen claim it has been introduced there through the canals from the Great Lakes.
BOARD OF AGRICULTURE.

FAMILY X. SERRANIDÆ. THE SEA BASS.


The white bass is generally abundant in the lakes. Its flesh is very like that of the black bass, and is similarly well-flavored. In the Ohio River it seems to be less common, but it is frequently taken there. The species frequents deep or still waters, seldom ascending small streams. It is said to thrive well in ponds, and possesses some of the elements of a game fish.


This large fish abounds in all the large streams and lakes of Indiana, where it reaches a considerable size—ten to twenty pounds' weight or upward.

In the great lakes it is known as "sheepshead," and it has there the reputation of being "the most worthless fish that swims." The flesh has a peculiar sharp-like odor, which is often very offensive. In the Ohio River the species is known as white perch. It is there a marketable fish, though of rather indifferent quality. Further south its quality seems to improve, and in Louisiana and Texas, the "gasperegou" seems to rank with the best of the fresh water fishes.

FAMILY XI. GADIDÆ. THE CODFISHES.


The burbot abounds in the great lakes, and has been occasionally taken in the Ohio River. It is usually rejected by the fishermen, although there are worse fishes in the sea. Its flesh is rather dry and tough, but there are few bones. In Europe, the burbot is often boiled and eaten cold, with vinegar and pepper. Thus prepared it is tough and tasteless.

RECAPITULATION

The fishes of Indiana belong to families as follows:

1. Lamprey Family (*Petromyzontidae*)—3 species, all too small to be used as food. They ascend the brooks in spring, and are often parasitic on larger fishes.
2. Paddle-fish Family (*Polyodontidae*)—1 species; a large fish of no value as food.
3. Sturgeon Family (*Acipenseridae*)—2 species; large fishes of moderate value.
4. Gar Pike Family (*Lepisosteidae*)—3 species; large fishes, the flesh rank, tough, and not edible.
5. Bow-fin Family (*Amiatidae*)—1 species, the "Dog fish," a large, voracious fish, the flesh soft and rank-flavored.
6. Eel Family (*Anguillidae*)—1 species, ascending the rivers from the sea.
7. Cat-fish Family (*Siluridae*)—13 species, the larger ones mostly excellent food fishes; a few (stone cats) too small for the market.

8. Sucker Family (*Catostomidae*)—17 species, most of them large enough for food, but all poor and full of small bones.

9. Carp Family (*Cyprinidae*)—37 species (chubs, dace, shiners, minnows); all the native species too small to be of any value as food; valuable as bait and as food for bass, pike and other predatory fish. The "carp," a large "chub" from Asia, the only one having economic value. The "gold-fish," another Asiatic chub, often kept for ornament.

10. Gizzard Shad Family (*Dorosomatidae*)—1 species, a lean, dry, exceedingly bony fish, found in sluggish waters, coming up from the sea.

11. Herring-Family (*Clupeidae*)—1 species, the "skip-jack," a rather large herring, which comes up the rivers from the Gulf; lean, bony, and nearly worthless in fresh water.

12. Moon-eye Family (*Hiodontidae*)—2 species; handsome fishes, often sold in the markets; the flesh poor and full of bones; a very gamy fish.

13. Salmon Family (*Salmonidae*)—7 species; the best of fishes, all found in Lake Michigan; one, also, in the lakes of Northern Indiana.

14. Trout-perch Family (*Percopsidae*)—1 species, a small, minnow-like fish, found in Lake Michigan.

15. Blind-fish Family (*Amblyopsidae*)—2 species; small fishes found in the caves of Southern Indiana.

16. Killifish Family (*Cyprinodontidae*)—3 species; little fishes found in swamps and canals.

17. Mud Minnow Family (*Umbridae*)—1 species; a small fish found in the brooks and swamps, especially northward.

18. Pike Family (*Esocidae*)—3 species; very voracious fishes; excellent as food.

19. Silverside Family (*Atherinidae*)—1 species; a small, very slender fish, found in quiet waters.

20. Stickleback Family (*Gasterosteidae*)—2 species; very voracious little fishes, found only northward in Indiana.

21. Pirate Perch Family (*Aphredoderidae*)—1 species; a little fish found in sluggish waters.

22. Sunfish Family (*Centrarchidae*)—14 species; gamy fish; all good for food if large enough.

23. Sea Bass Family (*Serranidae*)—2 species; game fishes, used for food.

24. Perch Family (*Percidae*)—21 species; 3 of them large, gamy food fishes; the rest quite small (known as darters), little fishes living among stones in swift, clear waters.

25. Drum Family (*Sciaenidae*)—1 species; a large, coarse fish of little value.

26. Sculpin Family (*Cottidae*)—6 species; small fishes found in cold, clear waters; 1 in springs throughout the State; the others only in Lake Michigan.

27. Cod Family (*Gadidae*)—1 species, found chiefly in large lakes.

Total, 27 families; 150 species.
THE PLACE OF WOMAN AMONG THE WORLD'S WORKERS.

MRS. L. G. HUFFORD, OF INDIANAPOLIS.

In estimating the progress made by civilized nations during the past century, nowhere does the wonderful advance appear more notable than in the place occupied by woman among the world's workers. The century which will be known in history as the era of steam, of telegraphy, of constitutional reform, and of the abolition of human slavery in three nations, is no less distinguished as the period in which woman has first been freely admitted to share with man in the activities and responsibilities of social, industrial and religious life.

Within the past fifty years the general sentiment of both men and women in regard to the rights and duties, and even the capacities of woman, has undergone a radical change. The prejudice of even the most conservative to-day experiences no shock in finding the names of women upon the list of speakers at a public gathering, or upon a lecture course ticket. With undisturbed serenity, they purchase from women the family supplies in a grocery or at market. It is indifferent to them whether the clerk who measures off their muslin or lace, or who sells them shirts or gloves, be man or woman, provided only he or she be courteous and attentive. The letter or telegram is just as acceptable (or the reverse) from the hand of a lady as from that of a gentleman. Debts and subscriptions are paid as willingly or as grudgingly, as the case may be, to a female as to a male collector. Woman is no longer conspicuous by her presence in business pursuits, but were it possible to restore for one month the status of mercantile and industrial life in America, as it existed in the first quarter of the present century, the absence of women would be no less noticeable than the loss of all those mechanical inventions by which applied science has, within the past fifty years, revolutionized the agricultural and mechanical industries of the world. The most remarkable feature of this bloodless revolution is the fact that it is no longer necessary for woman to push herself into recognition, but that her presence and her aid are now sought by the wise men to whom is intrusted the conduct of educational, benevolent and industrial affairs.

To raise the question then to-day whether woman has a "place among the world's workers" would be an anachronism.

To review the steps by which this place has been won in the face of prejudice and opposition, would be a task too long for the limits of this paper. Let us rather inquire what are some of the conditions of the nineteenth century civilization which have necessitated, and, in their turn, have been served by this enlarging of the sphere of woman's activity, while we also attempt to discover whether
WOMEN AMONG THE WORLD'S WORKERS.

woman herself has lost any of that modesty and refinement of manner which the croaking prognosticators have always declared to be the inevitable consequence of her mingling with the conduct of affairs outside the walls of home.

If we find that the home itself has suffered in any wise from this new attitude of woman toward the outside world, then women, no less than men, must deprecate the change.

The theme naturally divides itself into two parts; first, woman working for the supply of her own individual wants; and, second, in society at large, as she participates in the furtherance of all measures, civic, philanthropic, or educational, whose object is the purifying of the social state through the gradual elevation of the race.

If self-preservation is the first law of being, self-support, or the provision for the wants of the body, under that law, becomes of necessity the first consideration in adult life. To say that women should not seek to maintain an independent, self-supporting existence, but should, one and all, cling to some masculine arm, would not have been an unreasonable command in those early times, when the custom of sacrificing all but a few girl babies rendered "superfluous women" an impossibility. Christianity, however, has taught the nations to hold all human life sacred. In the castles of feudal chivalry, the fair ladies, whose lords wrung from the toiling peasantry the means by which their extravagant household life was maintained, had no difficulty in gracefully acting the part of vine to the ever-ready, protecting oak. In the riper development of Christian civilization in this nineteenth century, however, war is no longer the business of life. The arts and industries of peace are practiced, and the individual, while feeling the value of his life to himself and to the State as never before, yet finds that very exaggerated individual importance a force compelling him to action. Woman shares this feeling. The spirit of independence with which the century is ripe stirs her to revolt against a position of servile dependence upon an overburdened father or brother. For it is a fact that in civilized countries, either from force of circumstances or from choice, there is a large number of unmarried women. Hence, in the desire and the need for independent self-support, we may find the first condition of the times impelling woman to find a place among the world's workers. And yet, at first, it required some moral courage for women to face the critical stare of the world's Mr. and Mrs. Grundys, who, with elevated eyebrows, have looked askance at the woman who works for a living. The American born girl, whom necessity has compelled to earn money for her own support, has often done so with an apologetic air, and even sometimes with a denial of its necessity in her case. The really brave spirits, the women of strong minds and positive character, have opened a way for their more cowardly sisters, and, by their honest, capable, persistent labor, have made it honorable for women to work for a living.

Formerly, it was the boy alone who was trained to some trade or profession with a view to self-support. Now there are few girls in moderate circumstances who, upon leaving school, seat themselves to wait for the coming man. The exigencies of life and the rapidly changing circumstances of the present age have compelled parents to see that it is the part of true wisdom to furnish daughters, as well as sons, with such a practical knowledge of some pursuit as shall fortify them.
against the shocks of adverse fortune. The girl who has been thus trained usually prefers to put this acquired skill to a practical use without waiting for the compulsion of adversity. To this independent spirit, no bread is so sweet as that earned by her own labor.

Formerly, when woman's hand upon the spinning-wheel and loom was needed at home to supply the clothing and the linen for all household uses, the domestic sphere was wide enough to furnish her with remunerative labor. But with the invention of machinery in its manifold forms all that has been changed, and herein is another new condition to which woman has been compelled to adapt herself. The minute division of labor attendant upon the introduction of machinery has brought large numbers of women into the mechanical pursuits as wage earners. Because of her feminine delicacy of touch, and her quickness, both in perception and execution, her labor has been welcomed in performing those processes in which these qualities are of advantage. This has brought her, as a laborer, into competition with men. With what result? At first this new, unskilled labor, supplementing the natural working of the law of competition, tended to lower the rate of wages, to the serious disadvantage of all laborers. Society joined with the jealous male workers in the denial of the right of woman to become a wage earner in any other occupation than that of domestic service. Woman was told to stay at home and cling to her oak, which, in some cases was found too weak for support, in others to have been cut down by the hand of death. The simple instinct of self-preservation forced the many unsupported superfluous women to say: "We must have bread; you shall not deny it to our honest labor." The cry of fatherless children could not go unheeded by the mother whose industry would supply their wants. Greed for gain, stifling the sense of justice, together with all natural sympathies, has led capitalists to take advantage of these necessities to compel thousands of poor women to work at literally starvation prices. Nor is all the guilt upon the head of the capitalist. The average men and women are also responsible, for they seek cheap bargains, and congratulate themselves upon the purchase of garments at prices far lower than they themselves would be willing to make them. The present aspect of the labor question seems to indicate that there must be a readjustment of this whole matter of wages on a basis of justice to all concerned.

It is pertinent to our present theme to consider this question only as it has affected the position of woman. The same causes which have operated to force women to accept lower wages than were paid to men in mechanical pursuits have also contributed to keep her brain labor underpaid as well. At the beginning of the century the number of women employed as teachers was very small. In the older States, however, where the number of women soon was largely in excess, before the middle of the century many women were found at the teacher's desk. The Civil War was fought, and one may venture to assert within bounds that it worked almost as radical a change in the character of labor in the North as in the South.

From field and shop and store and school men and boys marched away. Their vacant places were filled often by women and girls, and their services having been found valuable from that time, the number of avocations open to women has been steadily increasing. The Civil War, then, has been a powerful agent in widening
the sphere of woman's activity in this country, by giving her the opportunity to prove her ability to perform much of the work which had previously been regarded as belonging to man's peculiar province.

What are specially designated as the industrial arts, those by which useful things are beautified, and whereby numberless small comforts and luxuries are brought into our homes, have, within the last twenty-five years, so increased and multiplied that many new avenues to industry have been opened. There is nothing to prevent woman from entering any of these industrial avocations, provided only she acquire that skill which will enable her to hold her position against competitors. The uneducated, unskilled worker, whether man or woman, must always be at a disadvantage. So long as woman's wages were lower than those of man, because of her inferior skill and training, she could not reasonably ask for an equalization of wages. Feeling keenly her lack of suitable training, she was led to claim the privilege of such an education in the arts and sciences as should give her an equal equipment with her brothers. The history of her successful efforts to secure for herself such equal educational opportunities, in spite of repeated rebuffs and denials, is well known.

Door after door has been opened to her, until now, although some still continue closed, it is possible for woman in this country to obtain an education in any department of knowledge or art. In the business colleges, schools of technology and industrial art, she may obtain that special training which shall develop her mechanical skill or business tact; in the universities and normal schools she may receive that instruction which will enable her to enter the profession of her choice, for it is certainly true that there is no longer any bar in custom to prevent woman's developing whatever natural gifts she may possess, or choosing any occupation by which she may, if she desires, take an honorable place among the world's workers.

Women are at length learning that to compete successfully in the lists as workers, they must be able to do something which has a money value in the world, and to do that work so well that it is worth the price paid. The business of the world is not conducted on philanthropic principles, and no self-respecting woman can wish to receive the wages of pity or courtesy.

Both men and women have been slow to believe that woman is to hold a permanent place among the world's workers. It has been thought that the cause was merely temporary; that few women could or would long continue any self-supporting occupation.

At last, however, the fact is recognized that woman's attitude toward the world and the world's attitude toward her have both undergone a complete change. As a producer, however, woman no longer holds only subordinate positions. Her ability in many cases to manage large business interests has been fully demonstrated, as in the case of Mrs. Frank Leslie, who, since her husband's death, has successfully edited the Leslie publications. Many a farm and store and other business is now wholly owned and controlled by women.

Her ability as an organizer has been discovered, and to-day, in several States of this Union, the higher school offices are ably filled by women. As yet, however, the wages of women can not be said to be generally on a par with those of men,
although there are gratifying exceptions, and we believe that the sentiment of justice will in the end prevail, whereby work will be paid for on the basis of equity, not of sex.

It is a law of justice, as well as of political economy, that the producer shall have a right to his own earnings. The effect of the entrance of women upon the field of industry as a producer, has been to remove from the statute books of many States the unjust laws which denied to married women the right to control their own earnings or to hold property. Yet there are still those who look with disfavor upon every change in the position of women, the tendency of which is to make her an equal factor with man in the social equation. Within a month I have seen in an educational paper an article written by a woman, the writer of which contends that to give to woman the higher education tends to the decrease of home life, on the ground that the woman who seeks this higher education does so for the sake of supporting herself alone, while the man uses his education for the maintenance of home and family. Granting the assumption, for the sake of the argument, to what does it lead us? To the conclusion that, for the sake of a home and a support, woman should become a party to the multiplication of homes founded on mercenary bargaining, rather than upon a holy love which alone makes home sacred, and the family a benediction. What constitutes a home? Not four walls, or lofty rooms; not even a man and a woman joined in the bonds of matrimony, but love, mutual devotion, self-sacrifice, and an equality of interest and labor.

The husband who knows that his wife is competent for her own self-support will respect the value of her labor in the home. He will not think that his work is the only remunerative agent in the maintenance of the family. He will not feel that every dollar which she receives from him for her own clothing or the family needs is a gift to one who has earned nothing. I dare assert, from positive knowledge, that there are no homes in our land more attractive or more wisely managed than those of the now large class of married women who can and who do earn money.

Time and again has been demonstrated the truth of Sydney Smith's witty saying: "A woman's love for her offspring hardly depends upon her ignorance of Greek, nor need we apprehend that she will forsake an infant for a quadratic equation."

We have seen how the limitations which have bound woman and hedged her in have been cast aside to permit her freedom of choice and of action, as it concerns her own individual life. In that broader sphere of the world's work, organized effort for the uplifting and purifying of society, in which woman had always been forbidden to participate actively, she has, in these later years, found a place.

To all the great moral reforms of the age she has given an earnest support. The vast army of temperance workers enrolls thousands of women in its ranks, whose united, single-hearted efforts are waging a valiant warfare against the evils of intemperance and social impurity. In every philanthropic and humane effort for the amelioration of want, the prevention of crime, and the reformation of the criminal, woman has a share. Within the last thirty years thousands of societies
for educational or charitable purposes have been organized, officered and conducted wholly by women. In our own State and in Massachusetts are woman's prisons controlled and managed entirely by women.

In some States they serve upon Boards of Charities, where their work is regarded as highly efficient.

In three of the larger, and in some of the smaller cities of this country, they have been appointed to serve upon Boards of School Commissioners. The executive ability of woman is now coming to be recognized, and one of the most significant signs of the times is that she is no longer reproached with going out of her sphere when she executes these public trusts. Even in religious bodies—the stronghold of conservative prejudice against admitting woman to places of influence or authority—the barriers have been broken down; and now in all the prominent sects of Protestantism, women are organized for missionary work, and are allowed a voice in the church management. In this larger work for the diffusion of intelligence and good morals in society, women of all social grades are engaged. The women of wealth and leisure find here an abundant opportunity for the exercise of their latent abilities for organization and labor, so that in one field or another all classes of women are engaged, save only those butterflies of fashion who have no thought for anything but their own pleasures.

A recent letter of Henry Ward Beecher's, in which he discusses the advancement of women, says:

"In looking back over fifty years, the sphere of woman, her rights and duties, has been enlarging. Her development has not been at the expense of her womanly instincts; she is none the less a refined woman, and fitted for the duties of home, because her enlarged sympathies take in the interests of the whole community. In participating in rights and duties which, at one time, were exclusively committed to men, she has not become masculine."

Never before was mother-love so tender and at the same time so wisely thoughtful, never were homes made so bright and attractive for son and daughter and husband.

Even in this age of divorces, I dare assert my belief that happy marriages are on the increase. Hence woman's going outside of home for business, and for work among the poor and the friendless has not led to the neglect of her own home duties. The Mrs. Jellybys, who, while devoted to the cause of missions in Borrioboola Gha, leave their own children to grow up in an untidy home, untaught and neglected, passing by the Poor Joes of their neighborhood, with not so much as a glance of sympathy, are few indeed.

One evening recently, as I stepped into a grocery in this city, a little, hunch-backed young woman, with a bright face and a musical voice, came forward to serve me. With deft fingers she tied the purchases, and her evident pride in her work, crippled as she was, told her pleasure in being able to earn her own living.

In a small town, in one of the eastern counties of this State, there is a little postoffice which is in marked contrast to the usual character of the village lounging-place. On its walls pictures are hung, the window is draped with white curtains, from whose folds peep blooming plants. The presiding genius of this sunny
little bower is a woman whose form reveals the trace of years of suffering from a spinal disease. Behind a screen stands an easel, and in the intervals of attending to the mails she divides her time between the artist's brush and the needle.

As I connect these two women in my thought, they seem typical of the present position of their sex. Crippled by law and by custom, bent under the weight of prejudice and social bonds, in spite of all these depressing burdens, woman has asserted her individuality, has proved herself competent for the efficient discharge of the duties of business life.

The place which has thus been won by woman among the world's workers can not be surrendered. Women who assume such a part in the industries and in public business must recognize the fact that not self-support nor even self-culture includes all their duty, but that they owe their best services to the State. To the thoughtful mind, this wonderful revolution in the position of woman indicates a preparation for full cooperation with man in political as well as in industrial and social affairs. Whether woman shall go on to enter into a full share of the world's work, rests entirely with herself to decide.

INSECTS AFFECTING THE SMALLER CEREAL GRAINS.

PROF. F. M. WEBSTER, OF PURDUE UNIVERSITY.

Mr. President and Gentlemen:

In common parlance, the two great enemies of the wheat crop are (1) "The Fly" and (2) "The Weevil." As each of these terms may include ten or twenty different varieties of insects, the "fly" of one locality sometimes being the "weevil" of another, one would occasionally be at a loss to understand which was intended, when either was reported as having committed depredations, were it not that the true weevil is seldom found outside of elevators and vehicles for storing or transporting grain.

But of the twenty or thirty insects which every season, to a greater or less extent, affect the wheat in field, one only can by any possibility be the Hessian fly. And hence whenever this insect is reported, it is somewhat of a riddle to determine whether the depredator is really the Hessian fly or some other insect, unless the report comes from strictly reliable sources. This is especially true of the reports frequently originating in the columns of the daily press of the city, and the weekly press of the country. If the editors of these periodicals would follow the example of the agricultural press, and refer such matters to those who make a special study of them, and in return receive some reliable information, they would not only
INSECTS AFFECTING SMALLER CEREAL GRAINS.

strengthen their relations with their readers, but fill a position as educators of the people, in this direction, which no other institution on the face of the earth could so admirably and effectually fill. Instead of this, however, there will frequently appear an array of information that would even astound the ashes of Linnaeus, not because the author has any knowledge of its value, but because there is just so much space to fill, and the public must be entertained. Now, we have no desire to criticise these men unjustly. We have invariably found them to be kind, gentlemanly and obliging, and it is for their own good, as well as that of the public, that we protest against the manner in which entomological matters are handled. It is of the quality and not of the quantity of information given that we complain.

During the last few months there have been very many reports in circulation regarding the serious damage to the young wheat from attacks of the "fly." Now, I have been over the State considerably during the autumn, and am well aware that many fields are badly injured. Some of this trouble is due to the Hessian fly and much of it is not. It has been stated that on account of the "fly" many fields of wheat were turning yellow, and so much of the statement as refers to the color is true, and there were, without doubt, some Hessian flies in these fields, but they did not discolor the leaves, except to a deeper green than usual. The insects affecting the leaves are as different from flies of any sort as sheep are from swine. Had the young wheat which was being discolored been examined, there would have been found many little, brownish-green, or perhaps wholly brown, wingless insects clustered upon these leaves below ground, or even on the roots. These insects closely resemble the aphid of the apple leaf, and another species that affects the plum and causes the leaves to curl up. Four species of these aphids affect wheat in this State, but the one now under consideration is the only one which affects the plants below ground to any extent.

Returning again to the Hessian fly (Plates I and II), concerning whose habits I gave you some facts at your annual meeting two years ago, our best authorities at that time concurred in the opinion that the insect was double brooded, the first brood of flies appearing in spring and another in summer, the latter depositing their eggs on the young wheat, chiefly prior to the 20th of September. It was this opinion that led to the recommendation of late sowing as a preventive measure.

Adult flies had already been reared in Michigan from volunteer wheat,† it is true, but the general opinion was that this was due to an exceptional season, and that the adults originating in this manner did not constitute a true brood. In some experiments made by Prof. Forbes in Illinois, during last season, flies were reared in plots of wheat sown for the purpose soon after harvest, the adults coming forth in time to oviposit on wheat in the field. While in Pike and Gibbon counties of this State, about the Middle of last November, I was surprised to find wheat sown as late as the 1st of October seriously infested by the pest.**

*-As an illustration, that part of this address relating to the habits of *Hesperis* has since appeared in several newspapers as being my observations upon the habits of the Hessian fly.
**See Notes.—Gen. R. Hammond, of Monroe County, N. Y., as long ago as 1860, stated that "if sowing wheat be delayed until October the fly will eat it all up, or rather, that was the case. I have not lately seen the Hessian fly." See Trans. N. Y. St. Agl. Society, Vol. XX, 1860, p. 64.
While all of this information, brought together, is very suggestive, it can not be considered as settling the matter, conclusively, until similar results have been obtained for a number of consecutive seasons. At present it does not seem clear as to whether a farmer should sow wheat at a certain time, to avoid the Hessian fly, or whenever he is ready to do so, or whether the experience of a farmer in the extreme southern part of the State, is to be of any practical service to one in the northern part. In fact, these seem to be questions requiring a series of systematic experiments, which shall be carried on for several years at various places throughout the entire length of the State.

There is another very different fly which affects wheat, but to a less degree, and in a different manner. This is known as the Wheat Stem-maggot, *Meroomyza Americana*, Fitch. (Plate III.)

The eggs are deposited on the young wheat plants in the fall, and the maggots destroy the tender stem, by cutting off the central portion just above the bulb. The larvae pass the winter in the plant, pupating in spring, and emerging as adults about two weeks later, or during the latter part of May. These adults soon after deposit eggs upon the plants, the larvae from them working in the straw just above the upper joint, thereby causing the upper portion of the stem, including the head, to wither and dry up, just prior to harvest. This brood of larvae pass through the same transformations as their progenitors, the adults flies emerging this time during July; and it has heretofore been supposed that it was these flies that deposited their eggs on the young grain, in the field. But we find that this supposition was incorrect. Last summer we reared adults in abundance from volunteer wheat, and a careful study of all observations made by others during the last thirty years, reveals the fact, that, had they carried their observations a little farther, they would have reached the same conclusion that we did, and found that there was an intervening brood, which originates largely, at least, in volunteer wheat. In support of these conclusions, Prof. Forbes writes me that he reared these flies, in abundance, from his plots of wheat, sown for his Hessian fly experiments, and I found adults depositing their eggs in wheat sown at the University after the 20th of September, in preference to that in adjoining fields sown much earlier.

While this matter of the number of broods may, at first blush, appear of small moment to the wheat grower, you will at once see that if these insects do originate in volunteer wheat, it is a good plan for you to sow a small strip, some where on your farms, and let them deposit their eggs therein, plowing it up before the flies emerge. Apropos to this, a valuable, but rather costly bit of experience, comes to me from Mr. W. A. Oliphant, of Union, Pike County, whose three hundred acres of wheat were several years ago seriously injured by the Hessian fly. Two hundred acres of this he plowed under and resowed, the other hundred he resowed without plowing. Although the soil was the same in both cases, the replowed portion yielded him twenty-seven and one-half bushels of wheat per acre, while that sown without plowing yielded but eleven bushels per acre, when, from the difference in culture, the results should have been the reverse.

The same measure will apply equally well to both the Hessian fly and the Wheat Stem-maggot, and if these two pests can be induced to deposit their eggs
just where the farmer wishes them to, he certainly can afford to furnish them some inducement, and with a good plow and a few hours' time, place these eggs where they will cause him no further trouble.

In the Wheat Straw Worms we have insects of quite different habits, as compared with those previously mentioned. The two forms, *Isosoma tritici* and *I. grande* (Plate IV), being small, ant-like insects, black, with yellow spots on the shoulders, and rings of the same color on the limbs. The females push their ovipositors into the stems of growing wheat and deposit their eggs singly, but often several in each straw. This is done during early spring, and again during June, in the latitude of Lafayette, the young larvae feeding upon the substance of the stem; but, being secure from ordinary observation, they are seldom noticed. We have found five of these larvae at work in a single straw, and a less number in at least eighty per cent. of the straws growing within a certain area in a field of wheat in Benton County. These worms do not usually wither the straw, and the effect of their work is only to be observed in the shorter and more slender stem, shorter heads and smaller and less plump kernels.

Although the adult insects are very inconspicuous, and the larvae and pupæ secreted within the straws, I wonder that they are not more frequently noticed, as the damage to the wheat crop throughout the State must be considerable.

The larvae are almost invariably found below the upper joint, and hence, by cutting the grain a little high, they can be left in the field, and as they pass the winter as pupæ in the same situation, by burning the stubble any time between harvest and the following March, they can be destroyed. As the adults emerging from the old straws in spring are almost invariably wingless, they can not travel about very rapidly, and hence changing the grain from one field to another, or rotating the crop, is often quite effectual in keeping them in check. Those adults appearing in June, from the growing plants, are provided with well developed wings, and can travel about from field to field with the utmost freedom.

In dealing with the Wheat Midge, *Diplosis tritici*, Kirby (Plate V, Fig. 3), it is difficult to say, with our present knowledge of its habits, how far any of the preceding remedies will affect either the adult insect or its larva.

The adults emerge about the middle of June and deposit their eggs on the young kernels, and the larvae burrow into them, causing them to become aborted. It has been supposed that these larvae, when full-fed, either entered the ground and remained until the following June, or remained ensconced in the heads; in any case not further attacking the grain, although the latter might remain unthreshed until winter. But since I came to Indiana I have not only reared the adults from volunteer wheat until in November, but have found the larvae on and about young wheat plants growing in a field, sown among growing corn.

Furthermore, it is known that the insect affects the seeds of grasses also. In her eighth report upon injurious insects, Miss Eleanor A. Ormerod, Consulting Entomologist to the Royal Agricultural Society of England, states that in 1882 twenty-five per cent. of some seed of meadow foxtail grass grown in Germany, and also some grown in Russia, was destroyed by an insect not clearly distinguishable from the Wheat Midge.
Hence, it will be seen that we have much to learn regarding the habits of the pest, before we can confidently expect to successfully combat them. Fortunately, their appearance in destructive numbers is not of common occurrence, and for the present, deep plowing and perhaps burning the stubble, is about all that can be recommended.

With the Chinch Bug, Blissus leucopterus, Say, (Plate V, figs. 4, 5), we will close our list of the principal insect enemies of the smaller cereal grains, although those enumerated constitute but a small portion of the number which annually exact tribute from the farmer.

The chinch bug passes the winter in the adult stage under dried leaves or grasses, and, in fact, anywhere about the fields where it can find protection from the elements. They come forth from their winter quarters from March until the middle of May, according to locality, and deposit their eggs to the number of about 500 per each female. These eggs are not all deposited at one time, but are scattered throughout a space of two or three weeks, and it requires about two months for the insect to pass from the egg through its incomplete transformations to the adult. These adults almost immediately pair and deposit eggs for a second brood, which appears later in the season.

The relative abundance of these insects, each season, is almost wholly due to meteorological conditions; dry summers, and winters of an even temperature, are exceedingly favorable for them, while wet springs and summers, with mild open winters, are the reverse. While you can freeze an adult bug and thaw it out almost as good as ever, it can not withstand many repetitions of such treatment, and a few drenching rains about the time the eggs are hatching is terribly fatal to the young bugs. Hence it is that these insects are seldom extremely abundant two years in succession.

As to practical remedies for this pest, except in cases of a migration of the young from one field to another, there are really none. Burning all grass, leaves, or other rubbish about the fields, during winter or early spring, is probably the best preventive measure. In case of a migration of the young, plowing furrows about the infested field, or placing tarred boards on edge across their path, is about all that can be done.

In has not been my aim in this paper to boast of how much we know of these insect pests, but rather to show you how much there is that we do not know. You may possibly wonder at the limited amount of exact information we possess in regard to these insects which have been pestering us for years. You perhaps do not know, that, until a comparatively recent date, you could enumerate on the fingers of one hand all of the men engaged in the study of these insects, employed by, either State or General Government.

There was Dr. Fitch in New York working on a salary of $1,000 per annum, but not a dollar was given him for expenses or experimentation. The State Entomologists of Illinois were given a salary of $2,000 per year, and not a penny for office or field expenses. Prof. Riley in Missouri was given, I believe, $2,500 per year, from which he paid office rent, expenses, assistants, and also for the illustrating of his reports. Mr. Glover, Entomologist of the Department of Agriculture, received a salary, how much I do not know, but no funds were given for investi-
gating these insects in the field. Others, like Harris, Packard, Walsh, and a few more, did what they could gratuitously, and during spare moments, from their every day duties. When we consider these matters, the wonder is how these men came to accomplish so much, and do it so well, particularly as the facilities for correct work, twenty-five years ago, were far inferior to what they are at the present time. Besides, we must recollect that these men had no books treating of American insects, except as they themselves made them.

*Mr. Walsh was State Entomologist of Illinois for one year only, he holding the office at the time of his death.
EXPLANATION OF PLATES.

PLATE I.

The Hessian Fly, Cecidomyia destructor, Say. a, egg of fly (greatly enlarged); b, larva; c, flax seed, or puparium; d, pupa; e, Hessian fly, natural size, laying its eggs in creases of the leaf; f, female fly, much enlarged; g, male fly, also enlarged; h, flax seed between leaves and stock; i, Ichnumun parasite.
PLATE II.

Fig. A. Side view of female Hessian fly, greatly enlarged; a, three joints taken from middle of antenna of female; a', three terminal joints of same; a'', four basal joints of same; a''', two terminal joints of antenna of male; b, maxillary palp; c, scales from the body and wings; d, e, vertical view of the last joint of the foot.

Fig. B. Larva magnified, with breast-bone in second ring next to head; Bα, breast-bone highly magnified; Bβ, head from beneath, enlarged; Bε, larval spiracle and its tubercle and trachea leading from the spiracle.

Fig. C. Side and front view of pupa, or chrysalis.
PLATE III.

Fig. 1. The Wheat-Stem Maggot, *Meromysa Americana*. Adult. (Redrawn from Garman by Windle.)

Fig. 2. Egg of same, greatly enlarged. (Redrawn from Garman by Windle.)

Fig. 3. Larva or maggot of same. (Redrawn from Garman by Windle.)

Fig. 4. Puparium of same. (Redrawn from Garman by Windle.)

Fig. 5. Showing position of maggot in full-grown straw. (Drawn from nature by W. S. Windle.)

Fig. 6. Effect of maggot on young wheat. *a*, Location of maggot. (Drawn from nature by W. S. Windle.)
PLATE IV.

Fig. 1. The Larger Wheat-Straw Worm, *Isosoma grande*. Adult. (After Riley.)

Fig. 2. *d*, Larva of same; *g*, pupa of same; *f*, mandible of larva; *e*, two-jointed feeler of same. (After Riley.)

Fig. 3. *b*, Female insect ovipositing in straw (*a*). (After Riley.)

Fig. 4. *c*, Showing ovipositor of same in straw. (After Riley.)

Fig. 5. Wheat-Straw Worm, *Isosoma tritici*. *a*, Larva, ventral view; *b*, ditto, lateral view; *c*, antennae; *d*, mandible; *e*, anal end; *f*, imago; *g* and *h*, front and hind wings. (After Riley.)

Fig. 6. Pupa of same. (Redrawn from Garman by Windle.)
PLATE V.

Fig. 1. Effect of joint worm, *Isosoma hordei*, on straw. (Redrawn from Glover by Windle.)

Fig. 2. Parallel section of same.

Fig. 3. Wheat Midge, *Diplosis tritici*. a, Male; b, female; a', natural size; c, wing, greatly enlarged; d, antenal joints of male; e, ditto of female; f, ovipositor; g, eggs, greatly magnified; h, flower of wheat, showing larvae on kernel; i, larva in repose; j, ditto, crawling; j', natural size; k, enlarged view of anterior end when moving; l, posterior end, with teeth protruding to aid in motion. (After Fitch.)

Fig. 4. Chinch Bug, *Blissus leucopterus*. a and b, eggs; c, young larva; d, tarsus of same; e, larva after first moult; f, larva after second moult; g, pupa; h, leg of same; i, beak. (After Riley.)

Fig. 5. Adult of same. (After Riley.)
We are told that to secure the highest productiveness of the soil we must make the land dry, clean and rich. The first and fundamental operation in the improvement of the land is drainage, because, until the surplus water is removed, it is impossible to either clean or properly enrich the soil. It, therefore, follows that if nature has not drained the land, man must, in order to get from the soil the highest possible returns.

**Drained and Undrained Soils Compared.**

A comparison of drained and undrained soils demonstrates the necessity and importance of drainage. In spring and fall, and frequently in wet summers, the undrained soil is not only saturated with water, but actually covered with the same to a greater or less extent. The removal of this great excess of water by natural means is an exceedingly slow process. Even after the removal of the surface water the soil remains cold and clammy, delaying the preparation of the ground often beyond the proper time for putting in the crop. As a result the preparation and planting are often hurriedly done while the soil is yet in a putty-like condition, which results in making the ground even more cold and tenacious than before. It is not a serious exaggeration to say of the worst undrained soils that the transitions are from mud to clod and from clod to mud. Indeed, I have seen such fields, in which there was at corn-planting not enough mellow earth to properly cover the seed. Under such circumstances the seed germinates with difficulty, and the tender plant prevented by the underlying water from sending its roots deep into the earth, is compelled to seek solely in the surface soil which, as the season advances, gradually dries to a brick-like consistence, and thus defies the efforts of the husbandman to effectually mellow it. During the winter months the undrained soil is again filed, if not covered, with water and, owing to the alternations of freezing and thawing, undergoes repeated heavings and settleings. As a result the crop—if there be one—is seriously damaged, if not destroyed. In short, cultivated crops, where grown on undrained land, are subject to adverse conditions throughout the year. At the mercy alike of flood and drought and frost, the crop frequently fails, and a full yield is the rare exception. Drain the heavy soil which is surcharged with waters and a change, gradual—almost imperceptible—in its transitions, but most radical in its results, takes place. The soil which before was so cold and sodden is soon freed of its excess of water, and becomes warm and active, permitting an early and thorough preparation for the crop. The seed is deposited under conditions favorable to germination and growth. The plant develops rapidly,
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pushing its roots deep into the warm porous ground and thus firmly establishing itself in the lower and permanently moist subsoil. It is chiefly the deep rooting of the plant in the drained soil which enables it to withstand so well the mid-summer drought. The prompt removal, by the drains, of the excess of rain water permits frequent cultivation of the soil so that the farmer can wage successful warfare on the weeds and give the crop undisputed possession. The greater warmth of the soil produced by drainage either prevents entirely, or mitigates, the severity of autumn frost, and as a result the crop continues to develop until it is properly matured. But the advantages of drainage are not confined to the growing season. Land well-drained does not suffer serious injury from "heaving," for the reason that the cause—excess of water—has been removed.

Like the thoughtful farmer, who in winter prepares for summer, the drain (underground) does its good work in the deeper soil, while the upper layer of earth is locked in the icy grasp of winter. All are familiar with the adage, "Forewarned is forearmed," which may be construed to mean that one is better able to meet adversity, or what not, if prepared for it? Herein lies the great advantage of drained over undrained land. The former is constantly prepared for an emergency, whether it be flood, or drought, or frost. The drained soil is constantly in readiness to drink down an immense rainfall without any tears—in the shape of ponds on the surface—to attest the struggle. And immediately after swallowing the first huge draught, preparation is made for a second potation, and so on. In view of the fact that crops grown on drained land have from seed-time to harvest a constant advantage over those produced on undrained soil, is it any wonder that drainage often doubles and triples, and even quadruples the yield? Do these statements exaggerate the truth? I answer that they find ample confirmation in the experience of hundreds and thousands of farmers who have thoroughly drained their heavy lands.

But enough has been said in a general way in favor of drainage. Let us now consider more specifically the desirable soil conditions and the relation of drainage to these conditions.

First. The water of each rainfall should be gradually removed (in 24 to 48 hours) by percolation through the soil. Each square foot of surface should absorb the rain that it receives from the clouds, neither borrowing of its neighbor above nor lending to its neighbor below. That is, the ideal condition would permit no lateral movement of water on the surface, and thus prevent any transfer of fertile matter from one point to another. Of course this condition of things can not be fully secured in the case of a dashing rain on hilly land. There will be some washing of soil from the higher to the lower levels; but this washing should be reduced to the minimum. Natural drainage, which is chiefly at the surface, signally fails to secure this condition, and the open drain only increases the difficulty. The water is not gradually, but hastily removed—removed with a rush—carrying along not only plant food, but the soil itself. On the other hand, under-drainage renders the soil so open, so absorbent, so sponge-like in texture, that the water, which naturally tends vertically downward, finds a ready passage to the underlying drain. The water thus carries into the soil whatever plant food it contains. It is true that, in its passage, it also removes some plant food—a minimum
amount, however—which, in accordance with chemical and physical laws, is of a kind that can be best spared.

Second. During the growing season the soil should be constantly in a condition of chemical activity. The soil is not merely a storehouse of plant food but a vast laboratory in which the elements of plant growth are being prepared—manufactured, if you please. Three things are necessary to secure this chemical activity of the soil, viz.: warmth, air and moisture. By moisture I mean such a degree of wetness as the soil will retain after the removal of the free water: Thorough under drainage secures all these prerequisites of a chemically active soil in an admirable degree by lowering the line of free water to the level of the drain. It is therefore evident that drainage not only dries the land, but also in a very important degree enriches it by making possible the elaboration of available plant food from the crude materials of the soil.

Third. The soil should be constantly moist during the growing season, that is, exempt alike from excess or deficiency of water. This state of constant moisture is essential to constant chemical activity of the soil; it is necessary as a means of conveying the elaborated plant food of the soil to the plant, and it is required to meet the constant and heavy demands of the growing crop, which, during almost the entire period of growth, is 75 to 90 per cent. water. Can under-drainage secure this desirable condition of the soil? It would seem at first that it can not, as the function of the drain is to remove an excess of water and not to supply a deficiency of that element. Let us see. The deficiency of water during drouth is principally in the upper layers of soil. There is generally enough water in the lower strata, and the plant has only to push its roots deeper into the soil to obtain an adequate supply. The plant grown on undrained land is shallow-rooted, and hence suffers during drouth, because unable to reach the receding water below. The plant on drained land has a firm hold on the lower and moister soil, and hence passes through a drouth with little or no injury. In other words, if drainage can not carry water to the plant in a dry time it can lead the plant to the water by enabling it to send its roots deep into the earth to the more abiding supply of moisture. In addition to this, drainage permits more frequent and thorough cultivation, which acts as a mulch, and thus conserves the moisture of the lower soil. There is and will be difference of opinion as to the manner in which drainage mitigates the severity of drouths. But the fact remains, however we may account for it, that drained lands have an immense advantage over the undrained in dry as well as in wet seasons.

Fourth. The soil should be able to furnish an abundant supply of plant food, at all times fully adequate to the demands of the rapidly growing crop. A shallow soil of six to twelve inches, however fertile and chemically active it may be, is not sufficient. As well undertake to drive a 10-horse power engine with a 5-horse power boiler as to expect a maximum crop from a shallow soil. When we remember that about 90 per cent. of the soil is clay and sand, which are not plant food at all, and that only an exceedingly minute fraction of the soil is available for plant food, the importance of a large volume of earth, in which the plant roots may ramify and feed, is apparent. Here again the drain comes to our aid, as it is one of the prime functions of drainage to deepen the soil. Indeed, thorough drainage
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frequently doubles and even triples the depth of aerated and nourishing soil. It is drainage, therefore, that will enable one to make two blades of grass grow where but one grew before, since it gives feeding room for two roots where but one fed of yore. Instead of heeding Horace Greeley’s advice to “go west,” many a farmer would do well to go deeper into his soil and thus increase his acres and his yields without adding to his taxes.

Fifth. Our lowlands, covered with the stagnant waters of surface drainage from the higher levels, and our marshes, miry with the ooze water from higher ground, should be reclaimed from their watery thralldom and made productive of something more valuable and wholesome than frogs and malaria. Systematic drainage has converted thousands of acres of such soil into good arable land, and given us salubrious air instead of the poisonous miasm. By all means, therefore, let the work of draining the wet lands go on, and when it becomes too great for local enterprise the State should take it up. It should be borne in mind, however, that the thorough draining of the heavy uplands will greatly reduce the excess of water on the lowlands.

Without dwelling longer on the desirable conditions of the soil, let us consider the kind of drainage that will best secure these conditions.

OPEN AND COVERED DRAINS COMPARED.

The open ditch, as a means of draining the uplands, is exceedingly defective. It is wasteful alike of the land and of fertilizing matter; works imperfectly at best and not at all in winter, when it becomes frozen; is very liable to obstructions; is a source of danger to stock and a constant annoyance to the tiller of the soil; harbors weeds and vermin, and is very expensive to properly construct and keep in repair. Still, there is a place for the open drain. It must be the forerunner of the covered drain in very soft ground, but must give place to the latter when the soil acquires sufficient firmness. It serves, and must continue to serve, as the outlet to the covered drain, thus connecting the latter with the natural water-courses. Even in the relation of outlet to the covered drain, the open ditch is not the best thing possible, though it is probably the best thing practicable. I believe, however, that as communities become better acquainted with the merits of the covered drain, and learn to unite more fully in securing outlets, they will substitute more and more the underground for the open drain.

For the effectual and permanent drainage of the heavy lands, whether high or low, we must look to the covered drain, which in its most perfect form works throughout the year, and from year to year, with unfailing efficiency. Four kinds only will be referred to here, viz.: Stone, mole, tile and concrete drains. The first two deserve but a passing notice, as they are imperfect at best, and of only temporary duration. The stone drain is so expensive and laborious to make, and so liable to obstruction that its use, even in stony land, can not be justified when tile can be had. The mole drain is adapted only to uniform, tenacious subsoils which are free from stones. In soils which contain pockets of quicksand and gravel, the mole drain will soon fill up, and their complete obliteration in the most favorable soils is only a matter of time. The method of constructing the mole drain ren-
orders the grade very inaccurate, and makes silt deposits inevitable. The fact that
the mole drain is only suited to a small class of heavy soils, that it gives but tem-
porary relief at best, and that it must be frequently renewed, makes it evident
that this kind of drain can occupy but a very limited sphere in drainage im-
provement.

THE BEST DRAIN.

The only covered drains really worthy the name are those made of tile or
concrete. When properly laid—and they should always be so laid—these drains
secure to perfection all the desirable conditions of the soil before mentioned, and
are not open to any of the objections that have been urged against the working of
the open ditch and the other forms of covered drain. In efficiency and constancy
of working; in the saving of land; in the conservation of soil fertility; in the
ameliorating and vitalizing effect on the soil; in freedom from obstructions; in
durability, and in economy of results obtained, the underground pipe drain far
surpasses all other forms of drainage. I believe, however, that we have not ex-
hausted the possibilities of this kind of drainage—that we shall increase the effi-
ciency by increasing the frequency of the drains; that, in other words, our farmers
have as yet only laid the mains and sub-mains of a system of drainage which must
be completed before the full benefits of thorough drainage will be realized. The
work so well begun should go on to completion. No other farm improvement will
pay so high a return; no other is so safe; none so durable. The last statement
will apply to tile drainage at least, which will last while the years roll.

CLAY VS. CONCRETE TILE.

Of the relative merits of clay and concrete tile, I am hardly prepared to speak
advisedly, for the reason that I am not sufficiently familiar with the nature of
concrete tile to pronounce either for or against it. The clay tile has been employed
many years, and in its glazed and unglazed forms has been put to a variety of uses.
It has stood the test of time, and is more popular to-day than ever before in the
history of this country. The concrete tile is yet an experiment with us. It may
prove highly valuable and enduring; it may not. From my own limited observa-
tion I believe it will be difficult to make concrete tile as uniform in quality as clay
tile. If this be true, it is a serious objection to the former. If it be granted, how-
ever, that the concrete is equal to the clay tile in strength, durability, etc., the
latter possesses at least one advantage, in that it can be successfully laid true to
the grade line in water and quicksand.

While I hope that the concrete tile will receive a full and impartial trial, I
should feel loth to use it extensively until its success has been fully demonstrated.
In the working world the crucial test of merit is performance. The clay tile has
been most thoroughly subjected to this test, and with exceedingly gratifying re-
sults. The good work done by clay tile needs but to be known to be appreciated.
I would, therefore, advise the farmers of Indiana, who are not familiar with the
benefits of clay tile, to post themselves as to what it has done for others and can
do for them.
AMPHIBIANS AND REPTILES OF INDIANA.

Let me admonish you, gentlemen of this delegate convention, that you can not do a better service for agriculture in general, and for your neighbors in particular, than by striving to educate your fellow-farmers to a just appreciation of the merits and benefits of thorough drainage. The theme may be trite enough to you, but rest assured that there is yet a vast deal of ignorance as to both the merits and methods of thorough drainage. The proof of this ignorance is found in the large areas of undrained land in every direction from Indianapolis, and almost in all parts of the State. Convince your fellow-farmers by the good results of drainage on your own farms, that they can not afford to let their heavy lands remain undrained. Demonstrate to their entire satisfaction that drainage will pay—pay well, pay in dollars and cents, pay better than any other farm improvement; that it is the very foundation of improvement, as it paves the way to larger crops, finer stock, better buildings and greater prosperity.

It is fitting that you, the members of this Delegate Board of Agriculture, should take the initiative in drainage improvement in your respective localities. Your presence here is proof that are already acknowledged leaders. Do not stand back for others, but take the lead yourselves, and by your earnest efforts in drainage improvement continue to merit the confidence of your fellow-farmers, who have chosen you to represent them in this convention.

THE AMPHIBIANS AND REPTILES OF INDIANA.

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It is the purpose of the writer to give, in the following pages, a brief account of all the AMPHIBIANS and REPTILES, which are either known to have been found, or which, from their occurrence in neighboring States, are thought likely hereafter to be found within the limits of the State of Indiana. This is done with the view partly of imparting to farmers and others some useful information concerning these animals, and partly of indicating to those interested just what species and varieties are known to occur within our territory and what ones need yet to be looked for. At the end of the paper I have added a "key" that will enable the collector to determine the species.

Briefly, let us consider some of the reasons why these animals should receive our attention. "Reptiles" are to most people objects of supreme disgust, and such persons can not conceive why any one should study them, or do anything else with them except destroy them from the face of the earth. There are, of course, reasons for this sentiment. Some are dangerous, and these are not well distinguished from the harmless species, which have thus to suffer for being found in bad company. The useful qualities of many kinds are not known or sufficiently valued. Preju-
dices instilled into our minds from our earliest childhood have much to do, especially with our hatred of snakes. They are made responsible for certain unfortunate occurrences far back in the early history of our race, and every man and boy regards himself as divinely commissioned to execute the sentence that was pronounced on the offender and his supposed descendants.

We should study the phenomena of nature out of pure love for them; out of reverence for the Maker of all things, showing it by our reverence for the works of his hands; and out of a desire to aid science in determining the relations that obtain among existing things and what relations these have with the things of times long past. Further, we should study natural objects in order that we may discover what ones we may make useful for our own purposes, and what ones may be useless or even dangerous to us. Nor is the study of natural things, and the making of discoveries, the exclusive privilege of those who have received a scientific training. There is not a farmer boy in Indiana who may not make solid contributions to science if he will but use his opportunities. Persons who live in the country are in direct contact with nature. They see a thousand things that the naturalist would delight to see, and yet may never be permitted to behold. The times of coming and going of the various species of birds; their curious habits, as shown in nest-building and obtaining food; and the occurrence here and there of rare species of various animals, are examples of matters which all may observe and report and which science needs to know.

Many amphibians and reptiles are of direct value to man. Many, as various kinds of turtles and frogs, are used as food, and such might even profitably be bred for that purpose. Many others are useful because of their propensity for devouring insects, mice and rats, that are the pest of the farmers. A few, indeed, are dangerous; but it is worth any person's efforts to study our reptiles, if for no other reason than to be freed from constant fear of them. Of nearly a hundred species of amphibians and reptiles to be found within Indiana not more than three or four are poisonous, and these are of rare occurrence. The banded or timber rattlesnake, the prairie rattlesnake, and the copperhead comprise the number, unless, perhaps, the deadly water moccasin of the South may be found in the southwestern corner of the State. Some others may strike, or bite a little, or constrict, as they have a right to do, but they are not venomous and can do little hurt. Snakes that roll along like hoops, snakes that blow poison, snakes that sting with their tongues or the tips of their tails, and snakes that live for weeks in people's stomachs, are creatures of the imagination. Therefore, considering their usefulness as destroyers of vermin, no amphibian or reptile ought to be killed, unless it is to be employed for practical uses or preserved as a specimen for scientific purposes. The poisonous species named above ought, whenever found, to be killed and preserved for scientific collections. If the boys of the country are to be allowed to shoot all the birds and stone to death all the reptiles, we may yet be compelled to surrender to the vermin.

In order to study the reptiles and amphibians of our State advantageously, the student ought to have some means of determining, first of all, the species he meets with. To this end I recommend Prof. Jordan's "Manual of the Vertebrates," which contains descriptions likewise of our mammals, birds and fishes. Then the
student ought to begin observations on the habits of such reptiles as he meets with, and to keep accurate notes of these observations. Among other things, he should note the kinds of localities each inhabits; when it appears in the spring, disappears in the fall, how it passes the winter; what it eats, and how it gets it and how it eats it; when, where and how it lays its eggs; how many, how large, and when they hatch; what the young look like, what changes they pass through, what they eat, and how they are cared for by the parent; what enemies the animal has, and how it defends itself; what sounds it utters and the purpose of these sounds; what means are employed to bring the sexes together, and the time and manner of courtship. If anyone will tell us all these things, and such others as may be observed in the case of any one amphibian or reptile in Indiana, he will be certain to tell scientific men something that they do not yet know. But what is told, must be that which has been seen, and not what has been imagined.

Specimens should be preserved in alcohol. They may at first be placed for a few days in rather weak alcohol, some that has been used once. Afterward they should be submerged in strong alcohol; the strongest will keep them best. Bottles containing specimens should be closed tightly. Fruit-jars with rubber bands are excellent for almost everything. Above all things, have each specimen labeled with the locality where it was captured. Other interesting facts may be put on the label or be recorded in a note-book. Turtles are usually too large to enter ordinary jars. The shells may be cleaned and dried, or the whole turtle may be dried after extracting the entrails through a hole in one side. If, after drying, the whole body is painted with turpentine in which a little rosin has been dissolved, no insects will attack it. The specimen may not be a specially handsome one, but it can at least be identified, and this is the main thing.

It seems desirable that we should at as early a day as possible discover what species of amphibians and reptiles are found in our State, and what we can of their habits. To that end the writer invites the presentation or loan of specimens, and the communication of interesting observations; and for all such favors due credit will be given.

In order to facilitate the study and description of animals, zoologists have found it necessary to classify them; and they have therefore arranged them according to their resemblances into various groups, known as classes, orders, families, genera and species. Animals that we recognize as being of the same kinds, we say are of the same species. Thus the copperheads all belong to one species, the banded rattlesnakes to another. Species that are much alike belong to the same genus. The several kinds of frogs belong to the genus Rana. The copperheads and the rattlesnakes belong to different genera, being distinguished by the presence or absence of the rattle. Families, orders and classes are successively higher groups.

The Amphibians are such animals as the newts, salamanders, toads and frogs; and they form a class distinct from the class of reptiles, under which are arranged the snakes, lizards and turtles. The amphibians are most closely allied to the fishes; the reptiles to the birds, though differing so greatly in outward form. Amphibians usually lay their eggs in the water; their young are, with few exceptions, water-breathing tadpoles; the skin never is developed into overlapping scales.
or into plates, but is smooth and usually moist. Reptiles, on the contrary, breathe air by means of lungs at all times of life, never lay their eggs in the water, and have the skin formed into scales like those of snakes, or plates like those of turtles. Some of our salamanders resemble in form the lizards, but may readily be distinguished from them by having a smooth instead of a scaly skin.

THE AMPHIBIA.

Our amphibians are divided into two orders, the URODELA and the ANURA. The Urodela possess well-developed tails at all periods of life; the Anura have tails while in the tadpole stage, but when adults are tailless. To the Urodela belong the mud-puppies, newts and salamanders; to the Anura belong the tree-toads, toads and the frogs.

The lowest urodele that is found in our State is the siren (Siren lacertina), a very strange and interesting creature. It lives in the Ohio and Lower Wabash rivers, but it will probably yet be found further north. It grows to a length of three feet, although it is usually smaller. Its body is slender, its tail long, the fore legs are present, but weak, while the hind ones are entirely absent. There are large, external gills, and the upper and lower jaws are furnished with a horny covering. Little is known about its habits. In the large streams of probably the whole state there lives another somewhat similar animal, the mudpuppy, or water dog (Necturus maculatus). It has, however, both fore and hind limbs, and both jaws are well armed with teeth. Its gills are external, large and bushy. It uses its large flat tail in swimming. It appears to be nocturnal in its habits, and to eat worms and insects. Doubtless it will be found to eat many other small aquatic animals. It may reach a length of two feet, and is of a reddish color, with darker spots. Very often along the Ohio River fishermen catch on their hooks another large amphibian, the "hellbender" (Cryptobranchus alleganiensis). It is a creature of a coarse and disgusting appearance, and may well inspire fear in persons not acquainted with it. It is, however, not poisonous, nor could it probably produce much pain even if it should bite one. It has no gills, but there is on each side of the neck a small opening into the throat. Its head is flat, its mouth large, and its tail broad and compressed. Its color is nearly black, and its skin much wrinkled. It may occur from a foot to two feet in length. It is said to lay its eggs in August and September. It would be interesting to procure its tadpoles before the gills have been absorbed.

Next above these exclusively aquatic animals come the members of the family known as the Amblystomidae. They greatly resemble lizards and are often called such; but they differ from the true lizards, as has been already stated, in having a smooth, moist skin instead of a covering of scales. They are also quite sluggish in their motions, while lizards are very active. These amblystomes may be distinguished from other families by having a row of teeth running across, and no band running lengthwise, the roof of the mouth. Often when these animals are irritated the skin will emit a milky fluid, which may be disagreeable to some of their enemies. They are all entirely harmless and probably can not be made to bite, and if they did their feeble teeth could do no harm. Nevertheless many people greatly
fear them. They are frequently found in cellars, open wells, under boards and logs, and in the mud and water of ponds. They all doubtless live principally on insects and worms. Many, but not all of them, appear to pass the winter in ponds. During the summer they appear to burrow in the soil or hide away in damp places. Early in the spring they lay their eggs in the water in small bunches. The tadpoles are slenderer than those of frogs. We have in Indiana at least six species which have until now been all included under the genus Amblystoma. The small-mouthed salamander (A. microstomum, Fig. 4) is of a deep brown or black color, with a few minute grayish patches and markings. There are 14 costal grooves running down the sides between the fore and the hind legs. Its body is long compared with that of the other species, the distance from its snout to the armpit being contained in the distance from the armpit to the groin about twice. Jefferson's salamander (A. jeffersonianum) resembles somewhat the last, but has a shorter body, a broader head and a larger mouth. Its fingers and toes are long and slender, and it has 12 costal grooves. Its usual color is from ash to nearly black, with or without bluish blotches. Besides the typical form described above we may look for two varieties. One of these, fuscum, was originally described from Hanover. It differs in being of a dark brown color and has an especially dark band along the sides. The other variety, called platineum, has been found in Ohio and Illinois. It is distinguished by being of a leaden color, with numerous indistinct whitish blotches.

The tiger salamander (A. tigrinum, Fig. 7) is our largest species of salamander, and is easily distinguished by its numerous bright yellow spots on the back and sides. There are 12 costal grooves. Many individuals of this species spend the winter in ponds. Their eggs are laid early in March. The tadpoles may become 3 or 4 inches long before losing their gills. The spotted salamander (A. punctatum) resembles the tiger salamander, but its yellow spots are in a row on each side of the back and there are none along the sides; costal grooves usually 11. It is not uncommon. The marbled salamander (A. opacum, Fig. 6) is a short-bodied species, dark in color, with several silvery gray bands running across its back. It does not get to be so large as the species mentioned above, not exceeding, perhaps, 4 inches. It probably occurs throughout the State, but is recorded only from the southwestern portion. This species has been said to lay in tunnels under dead leaves its eggs to the number of 100 or more, and there to incubate them, both male and female coming up over them. When hatched the young betake themselves to the water. These observations are doubtless erroneous.

The short-bodied, or Cope's, salamander (A. copeanum) is known from a single specimen that was found near Indianapolis. It is of a dark color above, yellowish below. The distance from the snout to the armpit equals the distance from the armpit to the groin; costal grooves, 11; head, broad; tail, flattened; habits, unknown.

In the family of Salamandridae the form is still lizard-like. The members of this group are to be distinguished from the Amblystomidae by having a single or double band of teeth running lengthwise along the roof of the mouth. These may readily be detected by scraping gently in the roof of the mouth with the head of a pin. In front of this band there is usually also a row of teeth running across
the roof just inside the internal nostrils. There are, of course, also teeth on both upper and lower jaws. In the genus Sperlerpes the tongue is small and stands on a slender stalk like a little mushroom. The tongue may be thrust out of the mouth for a considerable distance, no doubt for the purpose of capturing their prey. Green’s triton (Sperlerpes bilineatus) has been found only in the southern part of the State. Its color is yellowish along the back and on the belly, while there is on each side a band of brown. There may also be a very narrow brown band along the middle of the back. The tail is about one half the total length. It lives under stones and the like, usually not far away from the water. Its length is about three inches.

Baird’s triton (S. guttolineatus) has not yet been found in the State, but is known to occur as far west as Central Ohio. It resembles Green’s triton, but has three distinct bands, the dorsal band broad, and its tail is considerably more than one-half the whole length. Its size is also greater, becoming six inches. The long-tailed triton (S. longicaudus, Fig. 3) is wholly aquatic, living especially in the streams of caves. It has been found at a few points in Southern Indiana, but will doubtless be discovered wherever there are rocky streams. It is our most beautiful species. The color is a lemon yellow, while scattered over the back and sides, and on the limbs and tail are numerous black spots. The tail is flattened and much longer than the rest of the body. The red triton (S. ruber) has not been recorded from Indiana, but is found in both Ohio and Illinois. It is of a bright red color and ornamented with numerous small black spots. It is found in marshes and along shallow streams, apparently leaving the water at night; length, about five inches. The purple salamander (Gyrinophilus porphyriticus) is common in Pennsylvania, and has been found as far west as Central Ohio. It is, therefore, among our possibilities. The color above is grayish or purplish; below, white. The sides are of a salmon color or yellow. There are no spots. The head is large and flat. It may become nearly six inches long. It is said to live in still water or on the land under logs and stones. It snaps fiercely when disturbed, but is harmless. It eats insects.

The Plethodons have a broad band of teeth running along the roof of the mouth. The tongue is large and attached by a narrow median band, leaving a broad free margin at each side and behind but none in front. The red-backed salamander (Plethodon erythromutus, Fig. 2) is small, usually attaining a size of three or four inches. It is said never to enter the water, but to hide under stones in moist places. Its young do not pass through the tadpole stage, but early lose their rudimentary gills. It would appear that the parents care for their young. The adults are of an ashy color along the sides, paler below. Along the back there is usually a broad red or cream-colored stripe from the head to the tip of the tail. This dorsal stripe is sometimes missing, in which case we have the variety cinereus. Costal grooves, 16 to 19. This species and its variety just named have been found in Southern Indiana. The slimy salamander (P. glutinosus, Fig. 5) has recently been taken near Bloomington, Monroe County. It is much larger than the preceding species, and is of a black color, with numerous small white spots. The tail is round, and there are 14 costal grooves. It hides under logs and in similar places, but lays its eggs in the water. The scaly salamander (Hemidactylium scutatum) is a rare animal, but
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it has been reported from Franklin County. It should be looked for all over the State. It may be known from any of our other salamanders by having but four toes on its hinder feet. It is to be found under logs in open woods, and is of a brown color above and paler below, with black spots on the sides and belly. It is said to be very active in its movements.

The brown triton (Desmognathus fuscus, Figs. 1, 1a,) is supposed to live wholly in the water, hiding under the stones of shallow brooks. It is brownish or ashly above, often with mottlings of pink; below, pale, marbled with brown. Its teeth are arranged much as they are in the Plethodons. Tail compressed from near the base to the pointed extremity. It has been said to lay its eggs in a string, which one of the sexes winds around its body. This curious habit needs confirmation, and it should be determined which of the sexes, if either, thus takes charge of the fillet of eggs. The eared triton (D. fuscus auricularis) is merely a variety of the preceding, distinguished by having a reddish spot below and behind the eye, and minute spots of red over the body. It has been taken at Cincinnati, O. The black triton (D. nigra) is another species that we may yet claim for Indiana. It belongs especially to the Southern States, but has been sent to the National Museum from about Chicago. It is uniform black, costal folds 12. The "triton" (D. ochrophorus) closely resembles the brown triton described above. It is of a brownish-yellow above, sides with a dusky band, belly pale without mottlings of brown. The male has no teeth on the posterior half of the lower jaw. It is said to live, partly at least, under stones away from the water. It is not known to occur in the State.

The green triton, or newt, (Diemycytius viridescentus, Figs. 8, 8a,) has been taken only in the southern half of the State, but doubtless occurs everywhere. It is a beautiful and interesting little animal, of a greenish color, and ornamented with numerous red spots, which are surrounded by a ring of black. Its tail is broad and fitted for swimming. It lives in quiet pools, and grows to be three inches or more long. A variety of this species, called minitus, lives under stones away from the water. It is red instead of green, but has similar spots. I have no record of its occurrence in Indiana, but it has been found at Cincinnati and near Chicago.

We are now to consider the tailless amphibians (Anura). The frogs and toads are all voracious eaters of insects and wholly harmless, and should, therefore, receive the protection of every farmer and gardener. The first to be noted is the common tree-frog (Hyla versicolor). Its loud voice, heard especially in damp weather, its changeable colors, and its ability to creep up perpendicular surfaces by means of the disks on its fingers and toes, are its most striking characteristics. It resorts to ponds in the spring, sometimes in great numbers, for the purpose of laying its eggs. Pickering's tree-frog (Hyla pickeringi) is a much rarer animal, and, so far as I know, has not been found in Indiana, except near Bloomington. It is smaller than the common tree-frog, is white below, fawn color above, with a dusky X across its back. It should be looked for. The cricket frog (Acris grilus, variety crepitans) is a little species that lives along most of our streams. It has on its toes and fingers small disks and is hence called a "tree-frog," although it does not climb. When pursued it springs into the water, but hastens to get out again. Its voice is shrill and noisy. Its body is about one inch long, is of a brown-
ish color above with more or less green, and pale below. There is some white about the lips. The typical form, grilus, may yet be found with us. It is distinguished by being slenderer and having a longer head. When the hind leg is laid along the side, the joint between the leg and foot reach to the snout or beyond. Another "tree-frog" (Chorophillus triseriatus, Fig. 9), occurs occasionally within our territory, though I know of but a single specimen having been found. Its digital disks are small and there is little or no webbing on either fingers or toes. Its body is but an inch long and slender. Its color is ash, with from three to five longitudinal dusky stripes on its back.

The American toad (Bufo lentiginosus) is well-known. Cruel boys ought to be taught to respect it, because its appetite for insects can scarcely be satisfied. The toad's full-grown tadpoles are much smaller than those of frogs. The genus Rana includes all our other frogs. Our common large spotted frog is known as the leopard frog (R. balecina). Its spots are surrounded by a ring of pale color. A variety of the species having spots without the pale ring should be looked for in Indiana. Another frog closely related to the leopard frog is known as Rana areolata; and a frog found in Benton County has, by Prof. Cope, been assigned to it as a variety called cirrulosa. Its size is medium. The head is larger than that of the leopard frog, and the spots smaller and more numerous. The males are stated to have vocal sacs opening externally behind each angle of the mouth. Additional specimens should be sought. The marsh, or pickerel, frog (R. palustris) is also much like the leopard frog, but is smaller, and has on it back four rows of squarish spots. The male has two internal vocal sacs. It is said to occur in Indiana, but I have not obtained it. The green frog (R. clamata) is one of our largest frogs, and is found probably in all our streams. Its spots are not so distinct as in the species named above. It is much like the bull frog (R. catesbiana), but differs especially in having, along each side of the back, an elevated fold of the skin. The bull frog does not have this fold. The latter species is our largest frog, sometimes attaining a total length of eighteen inches. Its loud, sonorous voice is well-known. Its tadpoles attain a large size before transforming, and must pass at least one winter in ponds. This species is the one usually eaten. The wood frog (R. sylvatica) is a beautiful species, not so large as the leopard frog. Its color is a silvery gray, with often a tinge of pink. It may be readily known from other species by a dusky band on each side of the head, running from the snout to the ear. It lives in damp woods, hiding about logs and in leaves; but if near the water when pursued, it takes itself thither and hides alongside of stones, from which it is distinguished with difficulty. It is moderately common.

REPTILES.

These, as already said, have the skin furnished with overlapping scales like those of snakes, or with large, thin plates, as in the case of turtles. The soft-shelled turtles form the only exception.

The snakes form an order (Ophidia), and we have in Indiana about thirty-five species. Of these, all except the three or four already mentioned are non-venomous. Several species are small in size, feeble of body, and of mild disposi-
tion. The larger species are strong, active, and given to exercising their natural right of defending themselves. When irritated or suddenly attacked, some of them may strike fiercely, and in so doing may cause injury in two ways. By means of their short, sharp teeth they may scratch the skin a little and even draw blood, and they may give the aggressor a sudden and tremendous fright. This last is the most serious part of the affair.

Snakes possess many curious and interesting habits, and there is no doubt that much remains to be learned concerning them. The food they eat depends somewhat on the size of the snake; but it consists usually of living animals. Sometimes, however, they will eat things which they have found dead—"cold victuals." They are ready to eat one another. Their means of capturing their food varies. It would be interesting to know just how a house snake can capture a living rat and swallow it. Some lay their eggs in the earth, while others bring forth their young alive. Do those which lay eggs guard them and care for the young? It appears so, in some cases. The females of many species afford the young a refuge from danger by permitting them to pass down the maternal throat. Well-authenticated cases of this are yet desirable.

The principal characters here used in distinguishing our snakes are found in the number of the large plates covering the belly, ventral scutes, counting from the head to the vent; the structure of the anal plate, the ventral scute just in front of the vent, which is sometimes entire, sometimes divided by an oblique cut; the number of rows of small scales counting from one side over the back to the other side; the smooth or keeled condition of the scales; and the coloration. The garter snakes are examples of snakes that have keeled scales and an entire anal plate; the water snake and racers of those that have divided anal plates.

The worm snakes furnish us with two species, known as the ground-snake (Carphophis amoenus) and Helen's snake (C. helena, Fig. 13). They are small, rather flattened snakes, with small heads. Their color is a rich chestnut brown above and red or pink below. They have thirteen rows of smooth scales and a divided anal plate. They are harmless, and live among dead leaves and in soft earth. So far they have been found only in the southern half of the State. The genus Virginia contains two species of small, plainly colored snakes, known as "brown snakes." They have smooth scales, in fifteen or seventeen rows, a divided anal plate, and are grayish brown above and reddish or yellow below. Kennicott's brown snake (V. elegans) has been found in Brown County. It has seventeen rows of scales. Valeria's snake (V. valeria) has but fifteen rows of scales. It lives in the Southern States, but may be looked for in Indiana. The striated brown snake (Haldea striatula) closely resembles Virginia elegans, but has keeled scales. It is reddish gray above and more or less red beneath. It is not yet known in Indiana.

The red-bellied horn snake (Farancia abacura) has been found only in Knox County. Scales smooth, in nineteen rows, and anal plate divided. The color is a bluish black above, while below there are square spots of red and black. On each side there is a series of nearly square red spots. The horn, or "hoop" snake (Abastror erythrogrammus) differs from the preceding in having three red lines along the sides. It has been found in Southern Illinois, and should be sought for in
Southern Indiana. It is not the "hoop snake" of the newspapers. The scarlet snake (*Cemophora coccinea*) is another Southern snake, but it has been sent to the National Museum from Ohio. Its color is a bright scarlet, broken by about twenty double rings of black, inclosing each a yellow one. Its scales are smooth, in nineteen rows, and the anal plate is divided. The head is small and pointed. This will be a rarity for the finder. In the genus *Ophiophagus*, to which belong several of our larger snakes, the scales are smooth, in twenty-one or more rows, and the anal plate is entire. The scarlet king snake (*O. dolius*, var. *doliatus*) is rare in the State, but does occur in the southern portion. It is red, with twenty or more pairs of black rings, each pair inclosing a yellow ring. It thus resembles the scarlet snake described above, but differs in having twenty-one rows of scales and an entire anal plate. The milk, or house, snake (*O. dolius*, var. *triangulus*) is very common everywhere. It differs wholly from the preceding variety in its coloration, but agrees with it in other respects. Its ground color is gray, and there are three series of brown spots above. It devours mice and sometimes rats, and for this reason, probably, it is sometimes found about houses. Most people, however, would prefer that it should not make itself too familiar. The female appears to lay her eggs in a nest, which she guards, and to rescue her young from danger by letting them pass down her throat. The king snake (*O. getulus*) is also found in Southern Indiana. It has twenty-one rows of scales; the color is black, and across the back there run about thirty narrow yellow lines which fork on the sides. In the Southern States this snake is highly regarded and protected on account of the warfare it makes on rattlesnakes. By suddenly springing upon and encircling the rattlesnake with its coils, the king snake soon squeezes the venomous reptile to death. Then, commencing at the head, the victor swallows the rattler whole. It treats other snakes in the same fashion. In the variety called *sayi*, the yellow transverse lines are broken up into dots, and nearly every scale may have a white dot. It has been found at Mt. Carmel, III., on the Wabash River. Still another variety called *niger* has been found in Knox County. It is entirely black. It may be known from the common black snake by having twenty-one rows of scales instead of seventeen. Evan’s king snake (*O. calligaster*) has been found at Mt. Carmel, III., and doubtless will yet be taken in Indiana. Its smooth scales are in twenty-five rows, and it has chestnut-colored blotches along the back and smaller spots along the sides.

The ring-necked snake (*Diadophis punctatus*) is one of our smallest and most beautiful serpents. It may be readily distinguished from any other of our species by its coloration, being-blue black above, yellowish beneath, and having a white or yellow ring around the neck. There is sometimes a row of black dots along the middle of the belly. The variety *amabilis* will doubtless also be found within our limits. It may be known from the other form by having its belly thickly covered with black dots.

We have in Indiana two species of green-snakes, both of which are slender, graceful animals of a bright green color. The smooth green-snake (*Cylophis vermalis*) has smooth scales in 15 rows. It will be found throughout the State. Its eggs, hid about under bark, etc., hatch probably during August. The young are
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about 5 inches long. The keeled green snake (*Phyllophtophis ornatus*) may be known from the preceding by having keeled scales in 17 rows. It is southern in its range, but has been found at New Harmony and in Dearborn County.

The genus *Caluber* contains some of our largest and most active snakes. They are known as “Racers” and “Pilot Snakes.” They may all be known by having keeled scales in from 25 to 29 rows, the keels often wanting on the outer rows, a divided anal plate, and from 200 to 235 ventral scutes. They are all doubtless very efficient in keeping down the numbers of vermin of various kinds, although they are equally ready to devour young birds. Emory’s racer (*C. emoryi*) belongs especially to the States southwest of us, but it is said to have been taken at Mt. Carmel, Ill., and in Franklin County, Ind. The scales are in 29 rows, only 6 or 8 rows on the back keeled, and there are 210 or more ventral scutes. The general color is ash gray, with many brown blotches. The fox snake (*C. vulpinus*) has 25 rows of scales, from 200 to 210 ventral scutes, and many chocolate colored spots across the back. It probably occurs throughout the State. The pilot snake, or black racer (*C. obsoletus*), has 27 rows of scales and 230 or more ventral scutes. The color above is lustrous black, some of the scales with white edges; below, slate black, with some white about the throat and chin. The common black snake has but 17 or 19 rows of scales, and the black variety of the king snake but 21 rows, and the scales of both the latter are smooth. The black racer has been found in Knox and Franklin counties. It is said to be much given to climbing trees to get young birds. The young are said to run down the mother’s throat for safety. This snake may reach a length of 6 feet. The spotted racer (*C. guttatus*) has also been found in Franklin County, Ind., and Mt. Carmel, Ill. Its scales are in 27 rows, its ventral scutes 210 to 235. It is a reddish snake, with many brick red blotches along the back.

The bull, or pine, snakes belong to the genus *Pityophis*. They grow to be large snakes, have the keeled scales in from 29 to 37 rows, the ventral scutes from 200 to 240 in number, and the anal plate entire. Whether or not any of the species live in Indiana is not certainly ascertained, but it is quite probable that at least one does. The pine snake (*P. melanoleucus*) probably does not come so far west, and yet it has been found in Ohio. It, as well as the next species, has a habit of puffing and hissing and even of making a low roaring sound, whence its name. Holbrook mentions one 9 feet long. It is white, with chestnut brown blotches, scales in 29 rows, and about 225 ventral plates. The Western pine snake, or bull snake (*P. sayi*), is also much spotted. Scales usually in 25 rows and about 225 scutes. It is Western in its distribution, but has been found at several points along Eastern Illinois, and will doubtless be found within our borders. The black snake (*Bacchusimus constrictor*) is well-known everywhere. The “blue racer” is a variety, or stage of growth, of the same species. The very young is much different from the adult. The scales are smooth, in 17 (or 19) rows, the anal plate bifid, and there are 170 or more ventral scutes. They climb trees and ravage birds’ nests and probably destroy rats and mice. They are accused of stealing eggs and milk from milk houses, but that they suck cows, as has been said, is highly improbable. The rasping of their teeth on the cow’s teats would hardly contribute to the tranquility of the rural scenery. They will, no doubt, sometimes squeeze
human beings a little, as their name indicates, but usually they are only too glad to escape. In such a case relief may be sought by unwrapping the tail.

The striped, or garter, snakes are well-known to everybody. They are perfectly harmless, although they may strike spitefully. The genus *Eumenes* may be recognized by the keeled scales in 19 to 21 rows, the entire anal plate, and the longitudinal stripes. The ribbon snake, or swift garter snake (*E. saurita*), is very long and slender, the tail forming fully one-third the total length. Its color is brown, with three yellowish stripes. This is one of the snakes that is reputed to "swallow its young." It has been said that they sometimes produce as many as 30 young at once. Fairie's garter snake (*E. faireyi*) closely resembles the preceding, of which it may be only a variety. Its ground color is almost black, and its tail is usually a little less than one-third of the total length. The Racine garter snake (*E. radix*) is probably rare in the State, but it has been found. It may be known from our other garter snakes by having the stripe along the sides on the second and third rows of scales instead of the third and fourth. Its ground color is also darker than usual in the rest. Its tail forms but about one-fifth the total length. The garter snake (*E. sirtalis*) is our commonest snake. It has a tail only about one-fifth the total length. They sometimes collect together in great numbers to hibernate. They produce an almost incredible number of young. The young are so far developed when the eggs are laid, that they soon hatch. Mr. F. W. Putnam states that he found 42 nearly-developed young in one snake 35 inches long. Mr. F. S. Thrall, of New Harmony, who has had much experience with snakes, tells me that he has in alcohol 64 young ones that left the mouth of their mother after she was killed, and several others escaped. Of this species we have several varieties. One, *parietalis*, has more or less bright red between the spots along the sides. Another, *ordinata*, has the stripes indistinct.

The genus *Storeria* includes two small harmless snakes that will probably be found throughout the State. They may be known by their keeled scales in 15 or 17 rows, their divided anal plate, and yellowish-brown color. Storer's brown snake (*Storeria occipitomaculata*) has a pale band along the back, sometimes indistinct, and some minute dots. The belly is yellow or red. There are three pale spots on the back of the head; scales in 15 rows. Dekay's brown snake (*S. dekayi*) is apparently more common in Indiana than the last. It has also a pale dorsal band and is grayish below. It has 17 rows of scales. Its characters are closely those of the striated brown snake (*Haldea striatula*) already described. The latter is, however, without any indications of stripes. Kirtland's snake (*Tropidoclonium kirtlandi*) has scales and anal plate like the two preceding species, but the scales are disposed in 19 rows and the snake is spotted with black. Its belly is usually salmon-red. It is quite common about Indianapolis. The lined snake (*T. lineatum*) has not yet been found in Indiana. It is southern in its distribution but has been reported from Ohio; consequently we may expect it in Indiana. The scales are keeled, in 17 rows, the anal plate entire. Color, grayish-brown with a light line along the back. Belly pale, with two rows of black spots.

Of the water snakes we have in Indiana some five or six species. The genus to which they belong is known as *Tropidonotus*. The scales are keeled and arranged in from 19 to as high as 33 rows, and the anal plate is divided. When
there are 19 or 21 rows of scales the coloration consists of five or more dark bands running lengthwise and lying on a lighter ground. When there is a greater number of rows of scales, the darker colors are disposed in spots and blotches, or the color may be almost uniform brown or black. The species are all aquatic and some of them attain a large size. The water snake (T. sipedon), sometimes called the "water moccasin," but quite a different thing from the venomous water moccasin of the Southern States, is our commonest species, and may be seen swimming in the waters or hiding among the stones of any of our streams. It is not poisonous, but a large one, if caught, might make a lively fight. They produce a large number of young and many persons have observed them, when alarmed, seek a safe retreat down the throat of the mother. The scales are in 23 (rarely 25) rows and the body is variously spotted and cross-banded with brown margined with black. Specimens are sometimes found that are quite uniform brown or black. Woodhouse's water snake (T. sipedon var. woodhousei), a variety of the common water snake, belongs to the Southwest, but has been found at St. Louis and about Chicago. We may, therefore, seek for it here. Its scales are in 25 rows and there is a row of black blotches, about 40 in number, along the middle of the back and another similar row on each side. Another variety of sipedon, called erythrogaster, is of a dull black above, the belly dull yellow or copper color. It has been found at Mt. Carmel, and, being a water snake, it can hardly be excluded from forming a part of our fauna. Holbrook's water snake (T. rhombifer) has the scales in 27 rows and is light brown with three series, a dorsal and two lateral, of dark, squarish blotches. Mr. Robert Ridgway, of the National Museum, found this snake to be excessively abundant at Wheatland, Knox County. The banded water snake (T. fuscatus) resembles T. sipedon. Scales in 23 or 25 rows. Ground color brown to black, with a series of black blotches along the back and about 30 triangular or oblong spots of red along each side. Belly reddish white. This species has been found in Knox County by Mr. Ridgway. Another water snake (T. cyclopium) has been found in Florida and Southern Illinois, and may, therefore, extend its range into Indiana. Its scales are in from 27 to 33 rows. There is a row of little scales lying between the lower border of the eye and the large scales covering the upper lip, an unusual thing. Color above brown, with many narrow, sometimes indistinct, dark bands running up the sides and meeting or alternating above. Abdomen yellow anteriorly, brown behind; more or less spotted. Graham's queen snake (T. grahamii) has not been found in the State, but since it extends from Michigan to Louisiana, we may confidently look for it. The scales are in 19 or 21 rows and there are about 160 ventral scutes. The ground color is brown, and there is, along the back, a broad band of yellow, and another on each side. Each of these bands is margined with black. The brown queen snake, or leather snake (T. leberis), has been found in Franklin and Parke counties and may, therefore, be sought for throughout the State. Scales in 19 rows. There is, on each side, a yellow band; on the back three narrow black stripes, and four dusky bands on the belly. One of these snakes, in the London Zoological Gardens, produced, in August, five young and several eggs at the same time.

The hog-nosed snakes are very peculiar in many respects, and are very abundant in some parts of the State. They are serpents with a heavy body and large
head. They have the power of flattening the head and body and thus showing their displeasure. The scales are keeled and in from 23 to 27 rows, and the anal plate is divided. They may be known from all others of our snakes by having the snout brought to an edge along the sides and to a point in front, and then turned up somewhat, so as to resemble a pointed dirt shovel. When attacked, these snakes make very threatening movements, flatten themselves and sometimes hiss violently, as if they were very dangerous. They are so regarded by many people, and the bite of these "spreading adders" is as much feared as that of the rattlesnake. On the other hand, herpetologists and people who have collected these snakes pronounce them perfectly harmless. Some of their back teeth are much larger than the others, and look like fangs, but they have no connection with poison glands. It is barely possible that the saliva has poisonous qualities. But, while they make violent threats, it is said that they never even strike. When persons have been snake-bitten, the snake ought always, if possible, to be preserved for identification. The hog-nosed snake, blowing viper, or spreading adder (H. platyrhinus), is likely to be found anywhere, perhaps, in the State, but is most abundant in the southern portion. It is of a yellowish brown color with a number of dark blotches along the back and spots along the side. Scales in 25 rows. To illustrate the stories that have been told of this snake, I quote the following, taken by Miss Hopley from an old writer: "When approached, it becomes flat, appears of different colors and opens its mouth, hissing. Great caution is necessary not to enter the atmosphere which surrounds it. It decomposes the air, which, imprudently inhaled, induces languor. The person wastes away, the lungs are affected, and in the course of four months he dies of consumption." This snake has been said also to "swallow the young." More observations are needed on its habits. A variety of this species, the black viper, niger, differs in being of a uniform black above, slate color below. It is common in some localities, perhaps more common than the spotted variety. The sand viper (H. simus, Figs. 14, 14a) resembles the spotted variety of the preceding species. It is to be distinguished from it by an examination of the upper surface of the head just behind the snout. In both species the sharp-edged plate that covers the snout has, just behind it, in the middle line, another quite small plate, and at the sides of, and behind the latter, other quite large plates. In H. platyrhinus this little median plate comes into direct contact with the large plates; in H. simus, it is surrounded by five or more little scales, which thus separate it from the larger plates. The sand viper is apparently not common in the State.

By far the most interesting of all our reptiles are the rattlesnakes and copperheads, and this is true principally because of the dangerous nature of their bites. In these snakes the maxillary bone has in it but a single functional tooth, and this is developed into a large fang. This fang has in it a canal which begins near the base of the tooth and opens near the tip, in front. The duct of the poison gland is connected with the upper end of the canal, so that when the snake strikes, the poison is injected through the tooth into the wound. Under ordinary circumstances the fang lies against the roof of the mouth, with the tip backward and entirely concealed by a loose sheath of mucous membrane. When the snake delivers its blow, the bone carrying the fang is rotated in such a manner as to erect the
fangled and make it point downward and forward. The poison is chemically and physically much like the white of egg. Its virulence is not destroyed by drying, freezing, boiling, or treatment with alcohol. It appears that no chemical reagent will neutralize it which will not at the same time destroy the tissues of the body. When thrown into the blood in proper quantity, it causes great nervous prostration, interferes with the action of the heart, and produces something akin to blood-poisoning. The remedies for snake bites are, sucking out the poison, excising immediately the wounded portion, and the drinking of considerable quantities of alcoholic liquors. Alcohol acts, not as a chemical antidote, but as a powerful stimulant, which enables the system to resist the depressing effects of the poison. Large quantities of whisky or brandy are sometimes needed to accomplish this result, but not enough ought to be taken to produce stupefaction, since then the alcohol will lend its aid to the deadly poison.

Of the rattlesnakes we have probably no more than two species. Of these, the banded, or timber rattlesnake (Crotalus horridus, Fig. 16), is the largest, most powerful and most dangerous. It is, happily, becoming far less abundant than it formerly was. Of course, every specimen of this snake that is found ought to be killed, but killed in such a manner as to injure it as little as possible, and then it should be preserved for scientific purposes. The rattlesnakes have many enemies. Black snakes attack them successfully and either choke them to death or pull them in two; and they probably sometimes eat them. The king snake is known to kill and swallow the rattlesnake. Hogs devour them and are usually little injured by being bitten. This immunity from being poisoned is due to their thick layer of fat. When the hog is bitten in some part that is full of blood vessels, it fares as badly as any other animal. Deer are said to destroy them by jumping on them and trampling them with their hoofs. But civilized man is their most implacable enemy, and before him they soon disappear. The banded rattlesnake may be distinguished by having the greater part of the upper surface of the head covered with small scales.

The massasauga, or prairie rattlesnake (Caudisona tergmina, Fig. 15), is smaller than the preceding species, but sometimes reaches a length of three feet. It may be known from its having the upper surface of the head covered with a few large plates, instead of small scales. It has also, usually, about seven rows of spots on the back and sides. There is, however, a variety that is entirely black and without spots. The spotted, pale-colored variety appears to be found on open prairies; the black variety in swampy lands that are covered with brush and trees. This species appears to belong rather to the northern half of the State. Notices of its occurrence south of Indianapolis are desired. Both the banded rattlesnake and the massasauga are known to afford, in their stomachs, a refuge to the young in time of danger.

The copperhead (Ancistrodon contortrix) is a well-known and widely-distributed snake, being found from Massachusetts to Texas. It may occur in the northern half of Indiana, but I know of no records to that effect. In some portions of the southern part of the State it is only too common. Its broad, flattened head, its fange, and its yellowish or chestnut color, will distinguish it sufficiently from any of our other snakes. There is at least one case on record of its having been swallowed by the black snake. It has been said that neither the rattlesnakes nor the
copperheads are ever found about tobacco plants. This is an error, I think. Persons living in the tobacco-producing regions can give some information on this subject. The water moccasin (Ancestrodon piscivorus) is a venomous serpent that lives abundantly in the streams of the Southern States. It occurs also in Southern Illinois, and instances are reported of its being found in Southern Indiana. It resembles somewhat the water snake (Tropidonotus sipedon), which also is sometimes called "water moccasin," but its stouter body, broad, flat head, its fangs, and the white lines about the mouth will distinguish it. Dwellers along the Lower Wabash and Ohio rivers should be on the lookout for this snake, and when it is found report should be made, accompanied by the snake as final proof.

Of the order of Lizards, we have in Indiana probably not more than five species, and only three of these are known with certainty to occur. As has before been stated, the lizards are to be distinguished from the salamanders by the possession of scales like those of snakes. They are, besides, wholly terrestrial, while the salamanders are usually more or less addicted to the water. The brown-backed ground lizard (Oligosoma laterale) has hitherto been found only at Wheatland, in Knox County. It is a slender lizard with very smooth scales and a tail about twice the length of the body. Its general color above is bronzv-green, and there is on each side a dark stripe; below, white; tail, bluish. The blue-tailed lizard (Eumeces fasciatus) will probably be found throughout the State. It lives about stumps, old logs, and under the bark of dead trees. It is very active and difficult to catch. The smaller specimens are of a blue-black color, with five yellow or whitish streaks running lengthwise the body, and the tail is bright blue. Older and larger specimens lose the stripes and the blue of the tail, more or less, and the general color becomes more faded, but often, also, more or less red. The head is likely to become quite red. Old specimens may become a foot or more in length. The six-lined lizard (Oenophilorus sex-lineatus) is not known to have been found in the State, but since it occurs in Connecticut, Maryland and in Western Illinois, well toward the north of that State, we can scarcely doubt that it will yet be taken in Indiana. It is covered with small scales, is of a yellowish-green or brownish color, and has on each side of its body three or four stripes of yellow. The abdomen is silvery. Search should be made for it. The alligator lizard (Sceloporus undulatus) has been found abundantly in Franklin County, and occasionally in Monroe, but nowhere else, so far as I know. It may be readily recognized. It is covered above with rather large keeled scales, which give it a rough appearance, while below they are smooth. Above, the color is brownish, with some irregular bands of black. The throat and sides are greenish-blue, or even indigo-blue. It is very active and lives in dry, sunny situations. It will probably be found in various localities in Southern Indiana. One of the most remarkable reptiles in our country is that known as the glass snake, or "joint snake" (Ophisaurus centralis), although it is, after all, no snake at all, but a lizard. It is long, slender and snake-like in form and has no legs, but it differs from any of our snakes in having the belly covered with small scales instead of scutes. The tail portion of the body is very long, and, like that of other lizards, quite brittle; so that, when the animal is struck, it appears sometimes almost entirely to fly into pieces. It is a common notion, where this animal occurs, that these pieces will
AMPHIBIANS AND REPTILES OF INDIANA.

Come together again in the right order and the animal be in as good shape as ever, but of course this is absurd. Prof. John Collett reports having seen this reptile some years ago in Warren County, and it has been taken at Mt. Carmel, Ill.; so that in all probability it may yet be found on the eastern side of the Wabash River. It should be looked for all along the western border of the State. It is sometimes yellow, sometimes dusky, always with black and yellow stripes running lengthwise on the back and sides. It is entirely harmless, and to kill it without the intention of preserving it is a piece of cruelty.

The order of Turtles is so well known that it does not need here to be characterized. We have in Indiana about a dozen and a half species. Their habits vary a good deal, but by far the greater part of them are aquatic and carnivorous. In most turtles, both the upper portion of the shell (carapace) and the lower portion (plastron) are covered with large, thin plates which differ somewhat in form and number in the various families, and thus serve to characterize them. In the soft-shelled turtles, however, the cuticle is soft, and not modified into plates. The turtles are of economic importance, principally because of the excellent food furnished by the flesh of some species. They are not utilized to the extent that is possible, and probably most of the species that attain a sufficient size might be eaten. Of the soft-shelled turtles we have three species. They are entirely aquatic, seldom leaving the water except for the purpose of depositing their eggs in the sand of the river shores. They are said by Agassiz to live principally on shell-bearing mollusks, but they will, no doubt, eat almost any small animal. Their habits need more study. The leathery turtle (Amyda mutica) will probably be found in all the larger streams of the State, since it has been obtained at Madison and in the Wabash at Delphi. This species may be distinguished from the two following by the fact that the partition wall between the nostrils has no little ridge standing out from it on each side into the nasal passage. It has also a depression along the middle of the back instead of a low ridge, and there are no spines on the front edge of the carapace. Dusky spots on the back, but none on the lower surface of the body, neck and feet. The fierce soft-shelled turtle (Aspidomectes ferox) is on record only from Madison. It is common in the Southern States, but may be expected anywhere along the Ohio River. It may be known from the preceding species by the ridge projecting into each nasal passage from the nasal septum, and by the low ridge along the middle of the back. When young, too, there are usually two dark lines, or two rows of black spots around the edge of the carapace. In the leathery turtle and in the next species named, there is only one such line; under surface of body, feet and neck, white. This may be sought for as a rare species in our State. The spiny soft-shelled turtle (Aspidomectes spinifer) is common in all of our streams. It is one of the best of the turtles for food. It has the ridges on the nasal septum, like the preceding species, but it differs from both the just-described species in having the lower surface of the feet and neck mottled with black. The snapping turtle (Chelydra serpentina) is too well known to everybody to require description. Both the eggs and the animal are often eaten, but the flesh may become musky in advanced age. It is a very strong, fierce and voracious animal, which lives principally on crustaceans, fishes and young ducks, but will also eat vegetable food. There is, living in our region, an-
other turtle, related to the snapping turtle, but which grows to be much larger and stronger, and is much more ferocious than the latter, and is also far rarer. This is the alligator snapping turtle (*Macrochelys lacertina*). Agassiz mentions one whose skull measured nine inches between the eyes and which was estimated to weigh more than 100 pounds. This interesting animal has been found most abundant in the streams of the Southern States, but Mr. Harry Garman, of Champaign, Ill., informs me that it has been taken in the Wabash a short distance below Mt. Carmel. It has also been reported from Wisconsin, and in the National Museum, at Washington, there is a specimen from Northville, Mich. Persons living along the Lower Wabash ought to look for this turtle and, if possible, send specimens of it to some of the museums of the State. It differs from the common snapping turtle in having a larger head, which is covered with smooth, symmetrical plates; a more pointed snout; jaws more hooked; the carapace with three prominent ridges, which do not disappear with age, and the under surface of the tail with many small, overlapping scales, instead of two rows of large scales.

The musk turtle (*Aromochelys odorata*, Fig. 9) is apparently rare in the State, but yet likely to be found everywhere. It has been taken in Franklin County and at Mt. Carmel, Ill. It is one of the smaller turtles, the shell not usually becoming more than about four inches long. It lives in quiet streams and ponds and is quite active and ready to defend itself. It gives forth a strong odor. The head is large and strong, the snout much projecting beyond the lower jaw; the carapace is usually more or less keeled; the plastron with the anterior lobe movable on a sort of hinge, the posterior lobe not movable. The mud turtle (*Cinosternum pennsylvanicum*, Fig. 12) is much like the preceding in size and general appearance, but differs in having the shell more rounded above and without a keel, except when young; and the plastron has both the anterior and the posterior lobes movable on the middle portion, so that the animal can pretty effectually close its shell. The male has a curious claw at the tip of the tail. The mud turtle lives in the same situations as the musk turtle, and is also odoriferous. It is probably even rarer with us than the musk turtle. I have been told that it occurs at Mt. Carmel, Ill. It may be expected to occur anywhere in the State.

In the genus *Pseudemys* are contained three species of our turtles which are entirely aquatic and which attain to a considerable size. They are characterized by the moderately depressed shell, the broadly webbed feet, the upper jaw with a small notch in front, and especially by having just inside the cutting-edge of both lower and upper jaws, a broad flat surface along which runs a distinct ridge. They have twelve plates on the plastron. The hieroglyphic turtle, or Holbrook's terrapin (*P. hieroglyphica*), appears to be exceedingly rare, but there is a specimen in the State Geologist's office that was sent from Mt. Carmel, Ill. The shell is very flat, deeply serrated behind and the head unusually small. The shell above is greenish-brown, with irregular yellow lines; below, dingy yellow. Troost's terrapin (*P. troostii*) is also rather rare, but it has been obtained at Wheatland by Mr. Ridgway. The carapace is dark green, with yellow stripes running downward on the sides, and many spots. The plastron is yellow, with a large black blotch on each of the twelve plates. There are several yellowish stripes on the lower side of the neck; carapace somewhat notched behind. The elegant terrapin (*P. elegans*) appears to
be quite common in the Lower Wabash. It is brown above, with yellow lines and spots, and the plastron is yellow with a dark blotch on each plate. It is especially characterized by the presence of a blood-red band on each side of the neck. The map turtles have a flatter carapace than those just described, which flares outward more, has a distinct keel along the back and is deeply notched behind. There is no notch in the upper jaw and the flat surface inside the cutting-edge of the jaws is not provided with a ridge. The map, or geographical turtle (Malaclemmys geographica), is common everywhere in our rivers. The color is usually greenish-brown, with irregular and interlacing yellow lines. Plastron yellowish with some black. Many yellowish stripes on legs, tail and neck. The young are broadly rounded, with the carapace keeled and furnished nearly all around with shallow notches. The neck is striped and there is a spot behind each eye. Le Sueur’s map turtle (M. leuconot, Fig. 10, young) resembles the preceding but is grayer and has each of the plates along the back furnished with a black process which overlaps the plate next behind. The young have a very high keel with large processes on the plates, and the carapace is deeply notched behind and on the sides; so that, on the whole, they have rather a grotesque appearance.

The “painted turtles” are the most beautifully colored and the most graceful that we have. They are much flattened, never at any time have a trace of a dorsal keel, and have no ridge on the flattened, grinding surface of the jaws. The upper jaw is slightly notched in front, and on each side of this notch there projects downward a little process of the horny jaw, forming a tooth. The three rows of large plates of the carapace, the middle and the two lateral, are rather plain, but the little plates around the margin are beautifully colored with bright red, yellow and black stripes. Head, neck, feet and tail, spotted and striped with red and yellow. The plastron is sometimes bright yellow, sometimes orange. They live in quiet waters and are very shy. The painted turtle (Chrysemys picta) has the plates of the middle row of the carapace lying exactly between the corresponding plates of the lateral rows, so that that there are rows of plates running directly across the back. The margined painted turtle (Chrysemys marginata) has the middle row of plates alternating with those of the lateral rows. Both species are found in the State, probably in almost every locality. C. marginata is, however, the most common form. It is desirable to learn to what extent C. picta is represented with us. The spotted turtle (Chelopus guttatus) is with us a very rare animal, having been found only a few times in the northern part of the State. It is a small turtle, the carapace reaching a length of five inches. In this species the feet are not so much webbed as in those previously mentioned, and they live less exclusively in the water. The carapace is without a keel, while the plastron is broad and notched behind. It is wholly immovable on the carapace, and its parts are not movable on one another. The upper jaw is notched in front and the lower jaw ends in a sharp point, directed upward. The carapace is black, with numerous yellow dots larger than pinheads. Top of the head black, with similar yellow dots. Blandings box tortoise (Emys melacograxis) is also very rare, and is found in Northern Indiana. It seems, however, to live in fields, away from the water. Its upper jaw is broadly notched in front, and the lower jaw rises upward to a point. The plastron is capable of moving on the carapace, and it is itself divided by a transverse suture,
so that the front and hinder parts can close up against the upper shell. It is jet-black above, with numerous yellow spots and blotches. The yellow sometimes covers a considerable part of the surface, but is sometimes entirely lacking. Specimens of this species that may be secured are worthy of careful preservation.

The box turtle (*Cistudo clausa*) is wholly terrestrial in its habits, never going about the water. Indeed, it is said that they can not even endure rain. Their feet are almost without a web, the carapace high and vaulted, and the plastron has a transverse hinge on which the front and hinder portions can move and thus completely close up the shell. The colors of this turtle vary a good deal. The ground color is black and this is variegated with yellow in spots, bands and blotches, in smaller or greater amounts. Sometimes the yellow occupies the greater portion of the surface. The young always have a keel along the carapace, and traces of this often remain. This box turtle will probably be found sparingly all over the State, but in the south-western portion it is quite common. The three-toed box-turtle (*C. clausa* var. *triunguis*), a variety of the species just named, is remarkable for having only three toes to its hinder feet. It belongs to the Southern States, but has been found as far north as St. Louis. It may, therefore, be looked for in Southern Indiana. The painted box tortoise (*Cistudo ornata*) is quite common in Kansas, but it has been found as far east as Wayne County, Illinois. It is therefore to be looked for in Western Indiana. It differs from *C. clausa* in having a broader, flatter shell, and at no time of life a dorsal keel.

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**KEY TO THE GENERA OF INDIANA AMPHIBIANS AND REPTILES.**

**Body covered with a smooth or warty skin; no scales. AMPHIBIANS. A.**

**Body covered with scales or plates (except soft-shelled turtles, REPTILES. B.**

A. AMPHIBIANS.

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<td>Adults without tails (frogs), 10</td>
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<tr>
<td>1. Adults with external gills, 2</td>
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<td>1. Adults without gills, 3</td>
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<tr>
<td>2. No hinder limbs, beak horny. SIREN 204</td>
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<tr>
<td>2. Hinder limbs present. NECTURUS 204</td>
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<tr>
<td>3. With a small slit on each side of neck into throat; size large. CRYPTOBIRANCS 204</td>
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<tr>
<td>3. No slits along the neck; smaller, 4</td>
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<tr>
<td>4. No band of teeth running lengthwise in roof of mouth. AMBLYSTOMA 205</td>
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<tr>
<td>4. A single or double band of teeth running back in roof of mouth, 5</td>
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### Amphibians and Reptiles of Indiana.

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#### B. Reptiles.

1. Elongated animals, no limbs, belly covered with large scutes (snakes)...
2. Moderately elongated animals with limbs (except Ophiodaurus), belly covered with small scales...
3. Short bodied, broad animals, with a carapace (turtles)...
4. Without poison fangs or a pit between eye and nostril...
5. With poison fangs and a pit between eye and nostril...
6. With smooth scales...
7. With keeled scales...
8. Anal plate entire, scales in 21 to 25 rows...
9. Anal plate divided...
10. Scales in 23 rows, color brown or chestnut...
11. Scales in 15 to 17 rows, color grayish brown, with a few dots...
12. Scales in 19 rows, color bluish black, with red spots...
13. Color yellowish brown, ventral scutes 115 to 123...
14. Color black, with a yellowish collar...
15. Color bright green...
16. Anal plate divided...
17. Anal plate entire...
8. Scales in 15 to 17 rows, 9
9. Scales in 19 to 33 rows, 10
9. Color, green. PHYLLOPHILOPHIS.
9. Color, yellowish-brown or reddish. STORERIA, p. 212, and HALDEA p
10. Snout with a sharp, turned-up edge. HETERODON
10. Snout not as above, 11
11. Ventral scutes 200 or more. COLUBER.
11. Ventral scutes 125 to 160, 12
12. Belly usually pink or salmon, with two rows of black small spots. TROPIDOCOLONIUM.
12. Belly not as above, colors in bands lengthwise, or in blotches (watersnakes). TROPIDONOTUS.
13. Scales in 17 rows. TROPIDOCOLONIUM.
13. Scales in 19 to 21 rows, stripes lengthwise. EUTENIA
13. Scales in 29 to 37 rows, speckled and blotched. PITYOPHIS
14. Tail without rattle. ANISTRODON.
14. Tail with rattle, top of head with large plates. CAUDISONA.
14. Tail with rattle, top of head with small scales. CROTALUS.
15. Without limbs, snake-like, but belly with small scales. OPHISARUS
15. With well-developed limbs, 16.
16. With keeled scales, throat and sides deep blue or green. SCLEPORUS
16. With smooth scales, bronzey or grayish above, sides dusky. OEGOSOMA.
16. With smooth scales, blackish, gray or reddish, with five stripes and blue tail, or stripes indistinct and red head. EUMECES
16. With smooth scales, color dark or gray, with 6 or 8 stripes. CNEMIDOPHORUS.
17. Carapace and plastron without plates (soft-shell), 18.
17. Carapace and plastron with distinct plates, 19.
18. With a projecting ridge on nasal septum. ASPIDONECTES.
18. Without projecting ridge on nasal septum. AMYDA.
19. Plastron with 12 plates, shell flaring more or less outward, highest in front or at the middle, 20.
19. Plastron with 7, 9 or eleven plates, not flaring, highest behind, 26.
20. Shell highest in front, jaws stout and hooked (snapping turtle), 21.
20. Shell highest in the middle (box and pond turtles), 22.
21. Head with soft skin and no plates; tail with two rows of large plates below, in the middle line; common. CHELYDRA.
21. Head with symmetrical plates above; tail below, with many small overlapping scales; rare. MACROCHELY.
22. Toes without a web, shell high and capable of being closely shut.
22. Toes with a narrow web; color black, with yellow dots. CHELOPUS.
22. Toes broadly webbed, 23.
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<tr>
<td>23. Plastron with its lobes movable on transverse hinge; color jet black, with more or less yellow (Northern Ind.). Emys.</td>
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<tr>
<td>23. Plastron large, lobes not movable, hind legs largest, 24.</td>
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<td>24. Upper jaw not notched; carapace with a keel. Malacoclemmys</td>
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<tr>
<td>25. No ridge on grinding surface of the jaws; neck, legs and shell with more or less red. Chrysemys</td>
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<tr>
<td>25. A conspicuous ridge on grinding surface of the jaws, stripes and spots on neck, legs and shell yellow and green. Pseudemys</td>
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<tr>
<td>26. Both lobes of plastron movable on transverse hinge. Cinosternum</td>
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<tr>
<td>26. Lobes of plastron little or not at all movable. Aromochelys.</td>
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Butler University, June 16, 1887.
EXPLANATION OF PLATE I.

Fig. 1. The Brown Triton, *Desmognathus fuscus*. P. 207.
1a. Open mouth of same species, showing teeth and tongue.

Fig. 2. Red-backed Salamander, *Plethodon erythronotus*, seen from above. P. 206.

Fig. 3. The Long-tailed Triton, *Spelerpes longicaudus*. P. 206.

Fig. 4. The Small-mouthed Salamander, *Amblystoma microstomum*, showing the vomerine teeth and the tongue with a median furrow. P. 205.

Fig. 5. The Slimy Lizard, *Plethodon glutinosus*, showing the open mouth with tongue and teeth. P. 206.

Fig. 6. The Marbled Salamander, *Amblystoma opacum*. P. 205.

Fig. 7. The Tiger Salamander, *Amblystoma tigrinum*. P. 205.

Fig. 8. The Green Triton, *Diemyctylus viridescens*. P. 207.

8a. Open mouth of same, showing small tongue and two rows of teeth.

All the figures were drawn from alcoholic specimens and represent the natural size.
AMPHIBIANS AND REPTILES OF INDIANA.

PLATE I.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4a.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

15—Bd. of Agr.
EXPLANATION OF PLATE II.

Fig. 9. The Striped Tree-Frog, *Chorophilus triseriatus*, natural size. P. 208.

Fig. 10. Le Sueur's Terrapin, *Malacocemmys le sueurii*, natural size of the very young. P. 219.

Fig. 11. The Musk Turtle, *Aromochelys odoratus*, shell seen from below, one-half natural size. P. 218.

Fig. 12. The Mud Turtle, *Cinosternum pennsylvanicum*, from below, one-half natural size. P. 218.


Fig. 15. Upper view of head of Prairie Rattlesnake, *Causisoma tergmina*, natural size. P. 215.

Fig. 16. Upper view of head of Banded Rattlesnake, *Crotalus horridus*, natural size. P. 215.

Fig. 10 has been re-drawn from Agassiz; Fig. 16 has been adapted from a figure by S. Garman; all the others were drawn from nature.
REPORTS

OF

County and District Agricultural Societies,

EMBRACING THE

CONDITION OF AGRICULTURE

FOR THE YEAR 1886,

FOLLOWED BY A CONDENSED FINANCIAL EXHIBIT, NUMBER OF ENTRIES AND PREMIUMS PAID, IN TABULAR FORM, OF ALL SOCIETIES REPORTED, WITH A LIST OF THE NAMES OF PRINCIPAL OFFICERS, AND POST-OFFICE ADDRESS OF EACH.

The following reports are such as are required by statute law, and a certificate from the Secretary of the Board of Agriculture, showing that such report has been filed, entitles such agricultural society to the show license fund that may have accumulated in such county treasury. See R. S., secs. 2631, 5269 and 5270.

The general improvement in these reports from year to year is very gratifying, and in accord with the general prosperity and improved condition of the country. No failure in fairs reported, but a higher tone in morals as a standard of excellence. A thorough local description of each county is given in our annual report for 1883; hence, we here avoid any such repetition.

SECRETARY.

BOONE COUNTY.

The twenty-seventh annual exhibition of the Boone County Society was held on their grounds, near the city of Lebanon, from the sixteenth to the twentieth of August, 1886.

The entries were five hundred in excess of former fairs, the total number being 1,977; the horses numbering 380; jacks and mules, 20; cattle, 46; sheep, 70; hogs, 141; poultry, 100; with 500 in the Ladies' Department. The bee-keepers excelled all their previous shows.
The management, as is their usual custom, carefully excluded all gaming devices and intoxicants from the grounds.

On Friday morning, December 31, 1886, the society lost its vegetable hall by fire, supposed to be the work of an incendiary. Fortunately, there was a policy of $300 insurance on the building.

We were honored by the presence of Mrs. Josie Swift, a representative of the Women's Department of the State Fair, one day at our fair. She did us much good in cheering on our ladies in their good work, and occasionally dropping a good word for the Woman's Department of the State Fair.

The condition of agriculture in Boone County was never better than during the past year. There was nothing to discourage the farmers, except in one or two localities, where there was some hog cholera.

Our society is well organized, and is now looking forward to the time of the coming fair, next August, when it hopes to do even better than ever before.

JOHN W. KISE,
Secretary.

BLACKFORD COUNTY.

The Blackford County Fair Association held its first fair at Hartford City, August 24 to 27, inclusive. The weather was fine the first three days, but on the evening of the fourth it rained hard, which materially interfered with the racing and the comfort of the people.

We had by far the best show of thoroughbred and graded horses and cattle ever made in the county, and a fair showing of sheep, hogs and poultry. The agricultural department was not as well represented as it would have been later in the season. All other departments were as well, if not better, represented than heretofore. The attendance was not as large as was desirable, but, taking all things into consideration, it was all that could be expected.

In less than thirty hours after the fair closed, the premiums and all the expenses of the fair were paid in full, something that was never done here before, which, we think, will greatly help us at our next fair.

Probably no county in the State is improving in agriculture and stock-raising faster than Blackford. She is fully awake to the benefits of drainage, has eleven tile factories in the county, and the entire output of tile is used by the farmers. Consequently, wheat, oats, corn and grass are raised in great abundance. The amount of thoroughbred stock owned in the county is increasing rapidly.

A. T. KI\NIGHT,
Vice President.
For several years past Carroll County has had no agricultural society, and about five years ago some of her citizens living at Camden concluded that they would try and get up something to take the place of a county fair, and so organized a Harvest Home Exhibition, where the farmers of the county met in the fall and brought in specimens of their farm products, their stock, etc., and made a display of them without any reward, no premiums being offered.

These exhibitions were very popular with the farmers, as the attendance from the beginning and its large increase each year showed.

In the fall of 1886 steps were taken looking to the permanent organization and incorporation of an agricultural society. And though the organization was not completed previous to the time of holding the last exhibition, yet it was completed immediately afterward. The Association has leased a tract of land, a very beautiful grove one-half mile north of the town of Camden, for a term of years, and has already erected thereon some buildings and put in two good wells. They hope during the coming season to make considerable improvements, and hope to hold one of the most successful exhibitions during the coming fall that they have ever held.

Z. Hunt,
President.

CASS COUNTY.

The fourteenth annual fair of the Cass County Agricultural Association was held at their fair grounds, at Logansport, September 14 to 18, inclusive. The weather during a portion of the time was bad for fairs, having rained several days, making it very unpleasant for exhibitors and visitors, which, together with the prevalence of sickness, caused the attendance to be much smaller than usual. The result was that the receipts were not equal to the expenses and premiums awarded. Therefore, having no surplus from former fairs, the Board of Directors ordered the premiums awarded to be paid at the rate of fifty cents on the dollar. While some few exhibitors complained at not getting the full amount of premiums awarded, a large majority took the matter in good part and were well satisfied.

The exhibition, taking all the departments into consideration, was equal to any former exhibit and in many respects far superior.

The condition of agriculture in this county is still on the advance, our farmers are getting to the front very fast, and with the present advancement will soon be equal to any county in the State.

We now raise as good grain and as much of it to the acre as any other county in the State.

The wheat crop of last year was the largest and of the best quality ever produced.

The corn and oat crop was up to the average and of good quality.

D. W. Tomlinson,
Secretary.
CLARK COUNTY.

Clark County, one of the extreme southern counties in the State, borders about 50 miles on the Ohio River, affording good facilities for shipping the large amount of stock and grain raised to the markets either at Louisville or Cincinnati. Leaving the river and going toward the center of the county, we find the turnpikes and public roads in excellent condition. The Charlestown and Jeffersonville turnpike runs through the best portion of the county to Louisville, New Albany and Jeffersonville. We have also the Utica turnpike, leading from Charlestown to Louisville. As to railroads, we have the O. & M., running from Louisville north through the whole length of the county; also the J., M. & I. and the N. A. & C., running through the eastern portion of the county.

The twenty-eighth annual fair was held on the grounds of the Association, at Charlestown, from the 27th of September to the 1st of October. The property owned by the Association consists of grounds, valued at $1,000; improvements, $2,000; making a total of $3,000.

The fair last year was a decided success; in fact, excelled any former fair held in this county.

The Association has reorganized and sold new stock to the amount of $1,400, and will enlarge the grounds and otherwise make many costly and excellent improvements. Hereafter the fair will be run by a Board of Directors elected by the stockholders.

This county is favorably located for holding the fair, and, under the new management, in the future, will be as good, and certainly will not be excelled, by any in southern Indiana.

W. C. McMillin,
President.

CLINTON COUNTY.

The fifteenth annual exhibition of the Clinton County Board of Agriculture was held from August 30 to September 3, under very favorable circumstances.

Crops were good. The general health of the community was never better, and that other factor, the weather, was perfect. No rain, no dust, the heat not oppressive, every one came in good spirits and determined to enjoy a holiday.

The entries were not so numerous as last year, but in point of excellence the exhibits could hardly be surpassed. In horses the different classes were well represented, each class showing some superb specimens. In heavy draft; Normans, Shires and Clydes competed, and each carried off a share of the ribbons.

The cattle show was rather a tame affair. Shorthorns, Jerseys and Holsteins, with a single specimen of the white faces, competing.

Our society pays, perhaps, as large or larger herd premiums than any like association in the State, yet we fail to have anything like adequate competition. In
this our experience is somewhat similar to that of the speed ring. We offer liberal purses for all classes, but when the race comes off, three or four old ringsters come in, give us a "whack up and divide race," and pocket our money. Such things demand a remedy.

In hogs the leading breeds were represented, and of sheep there were just about enough to fill the entries and take the premiums with very little room for competition. The poultry exhibit was fairly good for an autumn show. I. N. Barker, of Thorntown, apportioned the money among the exhibitors to the satisfaction of all parties concerned.

Of implements and machinery there was no end. Power Hall—one of the features of our fair—was filled from end to end. Most first-class manufactories were represented. We pay no premiums in this class, but try to afford every facility for the display of all articles by furnishing power to operate machinery.

Agricultural Hall was well filled with every conceivable article grown on the farm, or in the garden. The exhibitors of cereals were busy taking orders, showing our farmers to be alive to the importance of securing the best for planting.

Floral Hall was bewildering in its multitude of objects of utility, ornament and refinement, a credit to the taste and skill of the ladies of this and our sister counties.

All the other departments were well filled with a superior class of exhibits, a history of which would be a repetition of the stereotyped phrases already worn bare by repetition. In most respects the fair was a gratifying success. By dint of hard work and rigid economy on the part of the management we have a very creditable balance in bank after paying expenses and premiums, which will be expended the coming season in needed repairs on the grounds and buildings. This is a very comforting circumstance in itself, yet I take it, an agricultural society may have, possibly, a higher mission than simply paying its premiums.

In these stirring times, while busy brains are thinking out the knotty problems that surround the bread winners in the world's great work-shops, the same spirit of unrest has entered the modern practice of agriculture. The first symptom of improvement in this direction is to become dissatisfied with our present surroundings.

It is always the dissatisfied man who is on the alert to improve his condition. We are improving not only our methods of farm management, but the tastes of the agricultural classes are becoming rapidly elevated and refined. That the farmers of Clinton County have learned to become dissatisfied with their former environments and are fully imbued with the spirit of progress, and are abreast of the times, is abundantly proved by the herds of improved breeds of all classes of live stock to be seen on every hand. It is clearly demonstrated in the improved machines for planting, cultivating and harvesting the various farm crops by the many cooperative measures entered into by our farmers to improve themselves materially and mentally, and not only to improve the standard of intelligence in their class, but to secure the increased comfort such an elevated intelligence always insists upon. The legitimate fruits of all this is comfortable, commodious farm-houses, tastefully laid out grounds, well cultivated fields, thoroughly drained, and abundant crops. How much of this is to be accredited to the Agricultural Society, with its annual fair, I do not care to say. Neither do I wish it understood that there is
COUNTY AND DISTRICT REPORTS.

not yet room for vast improvement in this same field. There are yet many waste places to improve, many herds of cattle whose only shelter in a blinding blizzard is the lee side of a fence or straw-stack, but the rapid strides in improvement in the past gives bright promise for the future, and I expect to be able to report commendable progress during the coming year in my next annual report.

M. H. BELKNAP,
Secretary.

DAVIESS COUNTY.

The third annual fair of the Daviess County Agricultural, Mineral, Mechanical and Industrial Association was held at Washington, commencing October 4 and ending October 9, on their grounds, two squares from the Court House and only a few squares from two railroads, making it very convenient for passengers and shippers of stock who attend our fair. We do not know of any fair grounds so convenient and accessible as ours, being located so centrally and convenient that anyone can easily reach it without being compelled to hire a conveyance, or paying fare to be conveyed to and from the grounds, an advantage which has added greatly to our receipts and increased the attendance very considerably each day, making us every year more successful in our undertaking of building up a permanent organization, which will rank Daviess County among the foremost counties of the State as a pushing and energetic section that is determined to stand at the head of the list in the way of achievements. The weather during the entire week was all that could have been desired, excepting the absence of a few showers to lay the dust, which the latter part of the week was almost unbearable, but in all far more acceptable than rain, and for which we offered no complaint but accepted with grateful thanks. Each year we have made a desperate effort to outdo the previous years, and so far we have been entirely successful, the last fair being a glorious success in every way. The immense crowds of people, the mammoth display of stock and the general and agreeable amusement furnished the visitors was all that could have been wished for, while hardly a single complaint was heard, something very remarkable in the management of fairs, and which will stimulate us with renewed vigor for next season. The show in every department was exceedingly good, the horse department being in the lead, the entries running up so high that we were compelled to erect seventy-five new stalls, and then the accommodation was insufficient, many being obliged to stable outside of the grounds. The draft class was not so largely represented as the general-purpose, but those that were exhibited were of a superior class and breed, and would have done credit to any exhibition.

The cattle show excelled that of any previous year both in the pedigree and grade classes, some very fine herds being exhibited.

The hog department was finely represented, and contained as fine looking breeds as were ever seen on any county fair ground, the greater portion being owned in our county and only a short distance from town.
The Sheep Department was represented with Cotswold and fine wool, and although not so largely represented as some of the other departments, it was a very creditable show for a county that does not cater very much to this industry.

The display of agricultural implements was very fine, and furnished constant entertainment for the many people that visited our fair. Very few county fairs could boast of a larger and better display of machinery than was exhibited on our grounds. We provided well for the accommodation of the machinery men, having a building especially for this purpose, with a line of shafting fitted up to keep machinery in motion, that is might be displayed to good advantage and seen in perfect working order.

The Floral Hall, or Ladies' Department of Fine Arts, was the most creditable and fine display of all, being well represented in all classes of artistic handiwork, and of a very superior character. This department was confined strictly to our own county, and the ladies of Daivies County are entitled to all the credit due this department, for the most excellent display made at our fair.

I came near forgetting to make mention of the poultry show, which excelled anything of the kind ever witnessed in our county. Twenty-seven different breeds were on exhibition, and the display far exceeded our most sanguine expectations. The people of our county in the last three or four years have taken much more interest in the raising of poultry, which accounts for the large and attractive show made at our fair, and competition has stimulated our people to breed and raise a superior class of fowls, heretofore unknown in this section, and it has proven to those who have given it their attention to be profitable and compensating for their trouble.

Our speed ring did not possess the attractions heretofore witnessed on the grounds, owing to the small number of entries and the slow time made by those competing for the purses. The races were not hotly contested, nor were they calculated to excite the people to any great degree of interest.

Taking everything as a whole, our fair was a grand success, and the directors can well feel proud of the results obtained. The Executive Committee worked faithfully and did everything in their power to make the fair an exhibition that would in every way satisfy the people of our county, and please all those who visited us from the adjoining counties. We are under many obligations to our sister counties for the liberal patronage they extended to us and we shall endeavor to merit their friendly relation by reciprocating.

We came out ahead of the general running expenses of the fair about fifteen hundred dollars, a greater portion of which we spent in improvements.

A few more successful fairs will enable us to make all the improvements necessary, and our grounds, when entirely completed and equipped with proper buildings, will present a beautiful appearance, and something of which our citizens may well be proud. Our county is a great coal-producing county, a very superior quality being now shipped daily to Chicago, a business which has only come into existence since the completion of the I. & E. R. R., which furnishes cheap transportation and gives us an outlet for a commodity which, when fully developed, will be of great interest and benefit.

While I write the Machine Shop Committee are in Cincinnati closing a
contract with the O. & M. Railway for the consolidation of their entire shops at our town. We have donated seventy-five thousand dollars and sixty acres of land, with the understanding that they make this (Washington) the center of the division between Cincinnati and St. Louis and build new shops and car works at this point, removing the shops at Seymour, Vincennes and Cochran here. As soon as the matter is settled beyond a doubt, which is expected to be completed on the return of the committee, the Railroad Company will commence work at once, and in such event our town will boom with such rapidity as is seldom witnessed in dull times like the present. Already property is advancing on the strength of the encouraging outlook, and we look forward to prosperous and lively times for Washington and its surrounding country.

A. F. Cabel,

Secretary.

DECATUR COUNTY.

Our annual fair was held on our fair grounds commencing August 31. It was a great success. The beautiful park had been trimmed and was in fine order; the grass had been kept green and fresh by the frequent rains. The attendance was good, and after paying off a large premium list dollar for dollar, and all expenses of the fair, we had a small surplus in the treasury.

There seemed to be a feeling of congratulation on all hands that the fair had, in all respects, been so much of a success.

It is to be regretted, however, that so many farmers and the business men of the county seem to have but little county pride, and exhibit so much indifference as to the success or failure of the fair. I have thought that it would be a good thing to select the best man in the State to give this subject his thought, and if possible deliver an address before the State Board presenting a remedy for this unfortunate state of affairs.

Let the address be published in all the newspapers of the State. I am well aware that this indifference is not confined to Decatur County. In some of our neighboring counties it has killed the county fair entirely. It is a poor compliment to the energy and county pride of the people of any county in a State so rich in all manner of products as our own, that a county fair can not be sustained.

I am an enthusiast in regard to these fairs. I am confident that the wealth of the people and the comfort of living and working have been greatly promoted by these annual exhibits.

But for them I doubt not we would have had the same low grade of horses, cattle, hogs, sheep and poultry that we had 30 years ago.

But for these annual shows of better implements and improved machinery our farmers would be toiling on with plows and tools which now excite the derision of every intelligent farmer in the State. The better furniture and improved kitchen implements have added incalculably to the comfort of living and saved the housewife from the drag and drudgery of manual labor.
The exhibitions of works of art and that of decorations for the home have cultivated the taste of our people. Our county fairs have been to a large extent an important factor in the improvement of the people in every respect. They might have accomplished much more. There are possibilities for good far beyond what they have yet attained.

It seems to me it should be the first duty of the State Board to present to the whole people what has been, and what may yet be, accomplished by them. The public mind ought to awaken and be stirred to greater interest and activity in the promotion of this important interest.

But if nothing else was accomplished by a county fair, the social feature alone is worth all and much more than a county fair costs.

Meeting everybody at these annual county feasts, all animated with a common purpose; meeting on a platform broader than party and wider than sectarianism begets a spirit of toleration for the opinions of others and breaks down the narrow walls of bigotry that rise around men when they only associate with those of their own belief.

And this swapping of opinions at the county fair often corrects our false notions and promotes the cause of right and truth.

Only a social people can be progressive. Give the county fair credit for all it has accomplished in this regard in the past, and let the best minds—those who have the common good at heart—devise a wider range of usefulness for this means of improvement, and also awaken a new interest in its value and importance.

Will Cumback,
President.

DELAWARE COUNTY.

The fair held by the Delaware County Agricultural Society for the year 1886, being the thirty-fourth exhibition, reached the highest point of excellence in exhibits, display and attendance we have ever attained. Of the exhibits in the Stock Department much could be said relating to the advance step our people have taken in propagating the best blood. They are not content to have live stock in name, but to have the best breeds. Among the farmers there is a very commendable and friendly spirit of emulation going forward every year, and it is more noticeable as the young herds of cattle are seen on the farms, droves of hogs in the fields, and teams of thoroughbred horses driven through the streets and along the public highways. The sires are owned here and the offspring is becoming more numerous. The advantage of having good stock is better understood and more generally followed. For this reason good stock in larger numbers than ever before was on exhibition at our late fair. We have a large number of manufactories, and many new ones have been added to our number during the year. Our county, while well adapted to agricultural pursuits, being the Eden of Indiana for farms,
may be considered a manufacturing county. Muncie, in particular, is a manufacturing city, and with a population of 8,000 a good market is furnished for the product of the farm, and having competition in the grand trunk lines of the railroads north, south, east and west, good rates are secured; hence, at our fair we had a fine display of mechanical work. In fact, in no department was there a failure of exhibits. The hammer, the anvil, the loom, the pencil of the artist, all showed much skill and that great progress was being made in these departments.

Our Stock Breeder's Association meets every month, and is composed of the progressive farmers of the county. This has been the means of bringing out the ideas and causing more study and greater research as to what kinds of stock are best adapted and pay best in our locality.

We also have a large "Horticultural Society" that holds monthly meetings, which has among its members some of our best farmers and gardeners, and whose products are more than locally known and are inquired for in the markets of some of our leading cities. Both these societies contribute directly and indirectly to make the fair the grand success it has been. They talk over the products of their farms and gardens at these meetings; they bring them to the fair to show for themselves.

The fair was held this year from August 17 to 21, inclusive. The weather was fine and the receipts all that could be desired. Premiums paid in full and an indebtedness of over two thousand dollars, that accrued several years ago (thanks to a resolute and determined Board of Directors), was entirely wiped out, leaving us free from debt, all expenses paid, and $800 in the treasury. To a member of your Board, John N. Graham, the President of this society, more than to any other one person is the credit due for this favorable showing.

We have the soil, the people and the natural advantages geographically to make a great fair. Geologically, we are developing what nature has placed near us, and natural gas has been found in abundance near our grounds, so that if it were not for going to and from the grounds in the dark, we could hold the fair next year, so far as light is concerned, as well in the night as in day time.

Respectfully submitted.

JOHN F. WILDMAN,
Secretary.

ELKHART COUNTY.

The thirty-fifth year of the existence of the Elkhart County Agricultural Society ends with the year 1886, the organization commencing in June, 1851. For a few years during the disturbance of the country by the war, no fairs were held. The society is now occupying the third fair ground, and is on a permanent footing. With the additional four acres purchased in 1885, the grounds now comprise thirty-four acres, pronounced by those who have visited it the most beautiful fair ground and public park in this section of the country. It is beautifully shaded by ancient oaks, with undergrowth of young hickory. The foliage of these, growing out of a blue-grass carpet, gives a refreshing and delightful effect.
The grounds, the track and all the buildings are owned by the Agricultural Society. All are paid for. Not one dollar of debt hangs over it to weigh down or discourage its workers. The organization is such that the payment of one dollar makes the payer, if a resident of the county, a member for the current year, and as such has full and equal rights with every other member of the association; failing to pay this annual amount the membership ceases, subject to renewal on subsequent payment.

The condition of the weather has everything to do with all outdoor entertainments. Rain or cold brings failure to all fairs. Nothing is more discouraging to the managers of a fair than a lowering sky and following rain. This year, as for eight consecutive years past, we have had rain during our fairs; this year even worse than ever before. On Thursday, when is expected the large attendance and consequently larger receipts, there was a drenching rain, with wind, at 10:30 o'clock in the morning, cutting off the attendance and suspending all business, driving the people to the buildings and sheds for shelter, where for three or more hours all were very uncomfortably crowded together. In consequence of losing this important day, the fair was extended to include Saturday. The two following days were fair, but by no means were we able to make our receipts equal to what they would have been on Thursday. Yet we had the luck to reach the debt-paying point and to liquidate all liabilities.

The fair, after all mishap, was a successful expose and exhibit of agricultural products of this and the adjoining counties, our entries being free, not only to our county, but as well to outside agriculturists. Entries from adjoining counties are an important help in making up the show.

The live stock show was more extensive than in any former year. All classes of horses, draft, standard breeds, roadsters and general-purpose horses, were well and numerous represented.

Of cattle there were herds of Durhams, Holsteins, Jerseys and grades, and this year the first Herefords were on exhibition.

Of sheep there were numerous entries. The medium wool seem to be in favor with our sheep growers—the breeds that combine the wool and mutton product. The Shropshires and like-sized breeds are in the greatest favor; at the same time, there were nice exhibits of Spanish Merinos.

Swine in great numbers were shown, the Poland-China in the lead, followed by the Berkshires; and at this fair there was a showing of white varieties of hogs that seems to indicate that these will supersede in the long run the Poland-China.

The poultry show filled the new hall erected this year for this specialty. The exhibit was more than good. It would have done credit to a State fair, and was greatly admired.

The farm and vegetable products were quite creditable, but the dryness of the latter part of the summer materially affected this department so that the quality was not equal to those of other years, nor were the entries quite so numerous as at the last fair. The Fruit Department was quite full and the exhibits good.

Floral Hall exhibits, as in former years, gave ample evidence of the tasty handiwork of our ladies and their capacity to ornament our homes and make them cheerful, as well as beautiful.
The educational exhibit was a new feature at our fair. We are indebted to our worthy County Superintendent, Mr. Spohn, for its suggestion, as well as for the successful showing of progress making in knowledge and in artful drawings. It was attractive for young and old.

The speed attractions were fair and honest tests, devoid of betting and pool vices. Morals could not be injured by taking a seat and witnessing these performances. The trotting in one race was under 2:32. In all, it was a successful fair.

The beneficial effects of the premiums given, and the incitement to the production of superior breeds of live stock, of which this Society has been one of the chief promoters, is quite apparent to those of our older citizens, who will remember that at the first and second fairs held by this Society there was not a horse, or any cattle, or hogs of any other than the common native breeds. All the Percherons, Clydesdales and fast moving horses, the Durhams, the Holsteins, the Herefords, the Jerseys, the Poland-Chinas, the Shropshires and Merinos, and the large chickens have come since and are seen on every farm and barnyard now in the county, if not in pure breeds, in very respectable crosses of the best kinds of stock.

None of the receipts of this society are divided among shareholders—no one but exhibitors and the general public are benefited. Up to this year, all the officers, even including the services of the secretary, have been free. The moneys received from all sources have gone first for the payment of premiums and expenses of holding fairs, and the remainder each year has been laid out in the purchase of fair grounds, making tracks, fences, stables, sheds, erecting buildings, etc. The work has found generous and willing hands, and the general management has been honest and economical.

John W. Irvin,
Secretary.

FULTON COUNTY.

In compliance with the requirements of the statute of the State of Indiana, it becomes my duty, as Secretary, to submit the report of our Sixteenth Annual Fair, which was held on our grounds, near the city of Rochester, from September 22 to 25, inclusive. Under existing circumstances the fair was a complete success, especially in a financial way (which is a very important feature), compared with the light attendance, the principal cause of which was the dissatisfaction which arose concerning the family ticket, and two days of inclement weather. On Friday and Saturday we were favored with pleasant weather, which increased the attendance, but it was not equal to corresponding days of last year. Contrary to all expectation the receipts were nearly equal to that of any former exhibition, with a much larger attendance under family ticket rule and favorable weather. Entries in number were equal to that of other years, and the exhibits were of such a variety that the fair in this respect was as interesting as any previous show of the society.
The Horse Department was well represented by all classes, heavy draft, general-purpose, roadsters, etc., ranging in size from Normans and Clydesdales to ponies.

In cattle the entries were increased and the exhibit better than at any previous fair, most of the leading breeds being represented, among which was the Hereford for the first time.

The show of sheep corresponded very well with former years. The Merino, middle and long-wool were all in line. The Shropshire, perhaps, met with as much favor as any, but each breed was not without its friends.

The Hog Department was well filled with Poland China, Berkshire and Chester White.

The entries in poultry and farm products were decreased some from last year, but the quality of the exhibit more than made up the deficiency.

In textile fabrics the exhibition was far ahead of any former year, both in quantity and quality. This fine display was admitted by all to be one of the most prominent attractions of the fair.

The display in the Kitchen and Dairy Department was good, as well as that of fruit.

In Floral Hall the attraction was great, the exhibit being very much admired by all lovers of flowers and plants.

The Mechanical Department was well represented, including numerous kinds of labor-saving machines, as well as wagons, buggies, furniture, and a great variety of manufactured leather.

Under the head of miscellaneous articles the entries were nearly double that of other years.

Last, but not least, came the Juvenile Department, which deserves great credit for its fine display. The society is under many and lasting obligations to the little folks for their untiring efforts in contributing their part toward making the attraction what it was, and hope they will still continue to work with us in the future as they have in the past.

In addition to the usual program we had a "children's day," admitting free all children under the age of fifteen years of the public and Sabbath schools of the county who came as organizations, together with their teachers and superintendents.

Also, the organization of an old settlers' society, to be held annually in connection with the fair, admitting free all members of the society 60 years of age and upward, requiring a residence in the county of 30 years or more to be eligible to membership.

The usual number of "sharks" continued to pour in until the patience of the Secretary was nearly exhausted by their various schemes to obtain license to operate games on the fair grounds, thereby robbing our innocent boys, as well as some older persons, of their hard earnings. The Society could have derived quite a revenue from this source, but better judgment prevailed and they were very wisely told to go.

As a rule, we do not sell exclusive rights to any, giving all an equal chance who wish to engage in any legitimate business necessary or in accordance with our rules and regulations.
Stock men are furnished with stalls at $1 for box and 50 cents for open stalls, and straw for bedding free.

The Society’s grounds are well situated, containing 20 acres of high dry land, beautifully shaded by a young grove of forest trees, well supplied with water and other accommodations necessary to make it first class, and a half mile track from which the race can be seen from any part of the fair grounds.

Our Society for the last few years has labored under many difficulties, and especially so during the last year. At the time of its organization the family ticket of admission was adopted, continuing the same up to last year, when it became evident to all reasonable persons that there was something wrong. The gate receipts did not compare with the attendance. Families grew to immense sizes, including not only visitors of the family but neighbors and friends, oftentimes admitted during the fair for one dollar (price of ticket), thereby swindling the Society out of hundreds of dollars every year. This fraud was carried on in various ways, passing in whole wagon loads and then showing said ticket through the fence for another load to pass in, and so on, until the stockholders took the matter in hand at the last annual meeting and abolished the same by a large majority, adopting a single admission ticket, which was taken up at the gate. This new departure met with quite an opposition, especially by those who were in the habit of abusing the privilege. The dissatisfaction continued until the close of the fair, when it was ascertained that the experiment, as some termed it, was very much in favor of the new system.

The outlook was very discouraging throughout. Had it not been that everybody who passed through the gates paid something the society would have come out in debt, but instead of that we were able to pay the premiums in full and the expense of the fair, besides applying about $400 on a new fine art hall, to take the place of the one destroyed by fire in the last year, the burning of which greatly embarrassed the society, as it was already carrying an indebtedness of several hundred dollars.

We feel confident now that the right plan has been adopted to make the gate receipts what they should be, and that the dissatisfaction (which kept so many away from the fair) will soon have passed away, leaving nothing to hinder Fulton County from coming to the front, where she rightfully belongs.

The agricultural interest in our county is advancing very rapidly. A great deal of what was supposed to be worthless land a few years ago, is now producing the best of crops, the result of a thorough system of drainage.

Our soil is adapted to the raising of a variety of crops not easily affected by drouth or wet weather.

The raising of stock is getting to be a very important matter. Our people are realizing the fact that it is to their interest to raise that which will make the greater number of pounds in a given time; that the hog of to-day at six months old is equal to the one of a few years ago at eighteen months, producing the same number of pounds with much less feed. Quite a number of registered horses, cattle, hogs and sheep have taken the place of the scrubs of a few years ago.
Our natural roads are very good for the most part, but our people are not satisfied with that, and are taking advantage of the present gravel road law, the result of which has been the construction of several miles of free road within the last few months, with a prospect of several miles more in the near future.

Rochester, the county seat, is a flourishing town of about 3,000 population, with good stores, good buildings and everything necessary to make it a first-class place. Situated near the Tippecanoe River, it has two railroads, and is just now preparing to bore for oil or gas, having formed a stock company for that purpose, which goes to work under favorable circumstances.

J. A. McCLELLAN,
Secretary.

GIBSON COUNTY.

Our last, the Thirty-third Annual Fair, was held at Princeton, September 13 to 19, inclusive, and was all we could expect. The hearty co-operation of the officers and Executive Committee in the work preparatory to a successful fair, was an assurance to the public of their purpose to excel, if possible, all other exhibitions.

The arrangements for the "fair and for fair week" were more extensive and varied than on former occasions. A new and increased number of stalls, and a large new amphitheater, commanding a fine view of the whole grounds, and capable of seating 4,000 people, are among the many improvements. One of our most noted improvements was a large Exposition Hall, the largest in the State outside of the State Fair, and admired by all. Our society expended the past year thirty-two hundred dollars for improvements and still has money in the treasury, showing us to be in a prosperous condition. The society's past reputation for courteous treatment of exhibitors and patrons, the highest regard for good morals always observed, and the almost universal satisfaction given by awarding committees, together with the liberal premiums offered, were accepted by the public as a sufficient guarantee of an exhibition worthy of their patronage. To make brief but comprehensive mention of the exhibit in the Ladies' Department, we must say that the exhibit excelled all former displays, the large new exposition building was filled to overflowing, and no exposition ever had a finer display. The liberal premiums offered by the society were contested for in the most spirited manner by the largest number of exhibitors we have ever recorded, and the character of work was such as to reflect great skill and taste upon the exhibitors.

A happy feature of our fair was the "Old Relic" Department, which is a large building erected for the display of old relics, and in this you could find everything used in our forefathers' days, and proved the most attractive feature of our fair. The show of horses was the best we have ever had, several imported stallions being among the number shown, which were equal to any shown at the State Fair.

The Cattle, Hog, Sheep and Poultry Departments were all well filled and above the average of such stock shown at county fairs. Our farmers are leading off with the well-known shorthorn cattle, several fine herds being owned here.
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The display of agricultural implements was simply immense; everything you could think of was shown. In the Horticultural Department we excelled all former years, the growing season having been very favorable for their development.

The interest in our fair is unabating, and the thoughtful farmer can not fail to extract some knowledge from the discussion and experience of others that will meet his own peculiar wants. Eternal vigilance is the price paid for well filled granaries and neat, tidy farms. May the time speedily come when the great majority of the farmers are men of the broadest culture. Then will be brought to light the hidden resources of the soil, bringing multiplied wealth to him who intelligently notes the seed time and harvest. We believe the exchange of experiences, the discussion of methods, the laudable desire to excell in results, incited by our annual fair, are of more practical benefit to our people, and a greater means of culture, than any other way possible. Tile drainage is being extended through our lands with surprisingly good effect. Clover, as a fertilizer, is extensively used, while as a hay and seed crop it is very valuable.

Our educational advantages rank first in the State. We are supplied with commodious and well patronized churches and school houses, and our society allows no gambling or sale of intoxicating drinks of any kinds on its grounds.

S. VET. STRAIN,
Secretary.

GRANT COUNTY.

The annual fair of the Grant County Agricultural and Stock Association, which closed September 3, 1886, was a success in every way. The number of entries exceeded last year's by over one hundred and fifty, and any previous year by three hundred. Premiums were paid in full, some improvements made, and a balance of seven hundred dollars remains in the treasury.

The past year has been a fairly profitable one to farmers, and improvements have been as great as in former years. Public ditching was not so extensive as in some former years, but tile was laid in great quantities. Building improvements about as usual.

Cutting of forest trees has shown a marked decrease, timber in the thickly settled portions of the county being considered very valuable. Crops in general were excellent, with few failures to record, in so high a state of cultivation is most of the land.

A most gratifying showing by our fair was that the premiums on live stock were awarded mostly to residents of our county, and the same stock received even higher awards at the neighboring fairs. Several hundred head of pedigree stock was brought in the last year.

There is no indication of contagious disease among cattle or horses. Hog cholera prevails to some extent, but it must be expected, and is no longer considered a calamity, but only a feature of swine raising, which, in the opinion of our society, is still the most profitable branch of farming.

CARY ZOMBRÖ;
Secretary.
GREENE COUNTY.

The Seventeenth Annual Fair of the Greene County Agricultural Society was held at Linton, October 4 to 8. The weather was splendid throughout the week, the exhibit and attendance good, and the receipts sufficient to pay premiums, improvements and deficit from last year.

The season just closed has been one of plenty to the farmer. The wheat crop was the best we have raised in the last four years. Corn, oats and hay returned a full yield, and with the exception of fall pasture, which was, on account of continued dry weather, short, every crop has been a paying one to the extent of labor employed and the quality of soil cultivated.

The growing wheat crop went into winter fairly good, the late sown being small, owing to drought. The improvement in agricultural implements is followed by better cultivation of the soil, and the continued raising of wheat and corn on the same fields has given place to judicious rotation of crops, with a large increase of clover and grass raised for hay as well as pasture. Ditching and under draining by tile is still increasing. One of the largest marshes in the county is now successfully ditched by steam power. The machine, while making the ditch, takes out willow stumps and roots of considerable size. It is only a question of time when all lands, where horses can not be employed to advantage, will be drained better and cheaper by the steam ditcher, wet weather not interfering with the work as it will where hand labor and horse power is employed. With the reclaiming of these lands, large tracts underlaid with different clays will be more accessible. They are valuable in the manufacture of pottery, encaustic tile, etc. In the eastern part of the county a good vein of kaolin is reported, and steps have been taken to open the same in spring and examine more closely the extent of the deposit. Another shaft about 100 feet deep has been opened one mile west of the town of Linton, working a six-foot vein of bituminous coal of excellent quality, free from sulfur, and six miles of railroad track have been built to connect the coal mines with the Indianapolis & Vincennes Railroad, while other surveys have been made for the purpose of getting access to our extensive mineral deposits. A bent-wood factory has been located at Worthington, and a large planing, saw and roller mill is now constructing at the town of Linton. This proves that a healthy and varied improvement is going on throughout the county, which at no time in its history has shown an equal energy to develop the resources of our county. No place, perhaps, in the State offers at the present time better inducements for capital investment than Greene County with its extensive mineral deposits, clays, excellent stone and large tracts of fine timber, not to except its fine farming lands. The future prospect of Greene County is bright, she is fast taking the place to which her great natural advantages entitle her, but which until recently were but very little understood.

PETER SCHULTZE,
Secretary.
HAMILTON COUNTY.

The Hamilton County Agricultural Society held its eighth annual fair on the grounds of the association, near the city of Noblesville, Ind., August 23 to 27, inclusive. The number of entries were 2,065, which were 401 more entries than the year 1885. Our neighbor county, Hancock, interfered with us some, as we always relied on her to swell our attendance and exhibits, but we are assured by Mr. Downing, Secretary, that there will be an effort made to change dates to avoid conflicting with us. All our departments were fine, and fully as good as was anticipated. The receipts of our fair from all sources were $2,874.45, expenditures $2,392.46, leaving a balance in the treasy of $501.46. For the coming year, 1887, at a stockholders' meeting, the same officers were elected, to-wit: S. M. Smith, President; A. H. Lacy, Vice President; C. D. Potter, Secretary, and A. J. Brown, Treasurer; and we will say to the public that the coming fair for 1887 will be a better exhibition than has ever been given in Hamilton County.

Charles D. Potter,
Secretary.

HANCOCK COUNTY.

The Hancock County Agricultural Association held its first annual fair at Greenfield, from August 24 to the 27th, 1886, under the most favorable circumstances. The management, at an expense of nearly $24,000, fitted up one of the best, if not the best equipped fair grounds in the State, and it was generally understood that our fair was to be the biggest in Eastern Indiana.

Not having had a fair in this county for eight or nine years, the people were anxious for one, and turned out en masse. Fully two months before the fair week the grounds were lined with horses in training for speed, our track at that time having gained a State reputation. It was surprising to see the interest manifested by the people of this county in the new grounds and fair.

Although we have more stable room than most of the associations around us, every stall was filled by the second day of fair, and every stable that could be rented in the neighborhood of the grounds was filled with stock for exhibition. The number of entries in the Horse Department was 330. Only four associations had more than this in 1886.

Considering the fact that our fair was held early in the season, the vegetable and horticultural display was very large—much larger than was expected.

The display of agricultural and mechanical implement would do credit to a State Fair.

The horse and cattle shows were said to have been the best made at a county fair, and has done much toward raising the standard of these valuable animals in this county. The mule show was good, but not large. Owing to the prevalence of hog cholera the number of entries in the Swine Department was small. However, the show was excellent.
It would not be improper to state in this connection that this county has some of the best hog breeders in the State, among whom are the Tyner Bros., Mints Bros. and Harvey McCord.

The sheep pens were all filled with the very best of stock. The poultry show was simply immense, and 300 entries were made in this department.

The races were as good as are usually seen at fairs. Several noted horses were entered, but it being a little early in the season their owners and drivers did not let them go their best, being afraid of records.

The display in the Art Hall was pronounced by all who saw it, the best arranged and the largest ever made at a county fair. Much credit is due to the management for giving this department entirely into the charge of the lady directors, who also deserve great praise for the manner in which they conducted their department.

Our fair was a grand success in every particular. After paying all expenses of the fair (which necessarily was an expensive one), and paying $2,800 in premiums, we realized $993.55.

Our county is an agricultural county. Nearly every acre of it can be cultivated.

Corn is the chief production, wheat next and hogs next. The corn crop this year is very large and of good quality. Wheat was an average crop. This county is well ditched, and free gravel roads run in all directions.

We are now forming a company to drill for natural gas.

CHARLES DOWLING,
Secretary.

HENDRICKS COUNTY.

The second annual exhibition of the North Salem, Hendriks County, Agricultural and Horticultural Association was held in Hadley Park, at North Salem, October 6, 7 and 8. This Association, with the assistance of the farmers, donated all their work in arranging the grounds, etc. They were put in good condition. We only advertised a two days' fair, but the weather being favorable, and finding it was impossible to get through with the work, we held the fair over the third day. The attendance was large during the last two days, about seven thousand people being present. There was a much better show than was anticipated by the managers.

The horse show was above the average; old horsemen declared the ring of two-year-olds was never beaten at any fair. The swine show was never beaten in the county. The Poultry Department was beyond the expectation of all. Hendricks County has been in need of a good fair for a number of years, and this Association have formed themselves into a joint stock company, and will lease the beautiful park near the I., D. & S. depot, where there will be fairs held that will lead in the ranks of any in the State.

L. W. HOLE,
Secretary.
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HOWARD COUNTY.

The Howard County Agricultural Society gave its eighteenth annual exhibition on their grounds, near the city of Kokomo, September 14 to 18 inclusive.

This was the second year under the management of the present Board of Directors.

Thursday and Friday have always been the days of largest attendance at all fairs, but this year a heavy rain set in Thursday forenoon, continuing through the night and a portion of Friday, but despite the very unfavorable surroundings the Society were enabled to pay all premiums and expenses in full, including $1,134.65 for substantial improvements made, incurring an indebtedness of only $200. An effort to increase the attendance on Wednesday was our saving feature this year. A good program of races and special entertainments was arranged for that day only. Free tickets of admission were issued to all under sixteen years, and a systematic effort made to place a ticket, with program on back of same, in the hands of every one in Howard and adjoining counties in advance of the opening day of the exhibition. The result was that the attendance, as well as the receipts, were much the largest of any day in the history of the Society, notwithstanding the fact that some of the oldest looking 16-year-old chaps to be found in the coon belt passed in free.

Each department made a very creditable showing, equaling any previous year. The Fine Art Hall, built this year, which included displays of merchandise and all textile fabrics, presented, we believe, the grandest display in quantity and quality ever placed on exhibition at a county fair.

The show of horses and cattle was far above any previous year, necessitating the erection of 75 new stalls after the opening day. The interest of the general public in a successful annual fair never was as great as now; never did as good feeling exist between exhibitors and the management. All who desired obtained their premiums in full on the last day of the fair.

This rich agricultural section has been repeatedly described in previous reports. No county in the State has better agricultural resources, finer timber, or less waste land. We have more tile drainage per acre than any county in the State. Every road leading to Kokomo, the county seat, is graveled or macadamized, aggregating 125 miles. While but three railroads intersect here, their connections are such that no town in the State, including Indianapolis, can secure a better rate to and from the trade centers than the energetic little city of Kokomo.

In our last report mention was made of the evidence of the existence of natural gas and petroleum in this locality. During the year our enterprising citizens have enabled the only reliable tester, the drill, to demonstrate the presence of gas here in unlimited quantities. At 8 o'clock A. M., September 13, the Kokomo Natural Gas and Oil Company started the drill, passing through the following geological structure of the various strata:
Drift ........................................ 8 ft.
Upper Silurian and Devonian limestone .... 418 ft.
Lake Huron Shale ........................... 470 ft.
In the Trenton limestone ................... 16 ft.

Striking a large volume of gas at 2:30 P.M., October 13.

This company has since sunk a second well half mile southwest of the first location, near the grounds of the Agricultural Society, striking a much larger flow of gas.

A second organization, the South Kokomo Gas and Oil Company, have just completed a well about one-fourth mile southeast of the first site, securing a flow of perfectly dry gas equal in volume to No. 2. The three wells are now producing more than 10,000,000 cubic feet of gas daily, and the same is being piped over the city as fast as possible. Now that gas in greater quantities than we can now consume is flowing free as air to the surface, the attention of capitalists here and many non-residents is turned to the discovery of oil, far plainer evidences of which exist than were to be seen of the presence of gas. Already the Kokomo Junction Oil Company have made a contract for sinking a well near the crossing of the Wabash and Panhandle roads, one mile north of the gas territory, while many others are arranging for locations. That there is the very brightest future for Kokomo and the surrounding country there is no doubt. It is remarkable the number of manufacturing companies already seeking locations where cheaper and superior fuel exists in unlimited quantities. Rates will no doubt soon be less, but now all are making contracts at less than one-third the cost of wood or coal. Every enterprise seems to have taken new life, and the Agricultural Society is determined to keep pace.

J. T. STRINGER,
Secretary.

HENRY COUNTY.

The Henry County Fair of 1886 at New Castle was held in August, commencing on the second Tuesday and closing the Saturday following. The exhibitions were held formerly in the latter part of September each year. The managers are pleased at having adopted this earlier date for holding future fairs.

The grounds were put in first-class condition; every possible convenience for exhibitors and for visitors was provided; the list of premiums was carefully revised in every department, and liberal additions made thereto. Many new attractions in the way of special premiums were introduced, which proved to be successful experiments in each instance. For a further mention of the fair, we append a statement from our county paper:

"The greatest county fair of Eastern Indiana closed last Saturday, and the Henry County Agricultural Society has recorded the exhibit which closed on that day as the most successful ever held in the history of the society. The interest
was kept up from the first to the last, and more people attended the fair this season than ever before. The weather, although a little hot, was all that could be expected during "dog days," and the dust, which so commonly becomes a veritable nuisance on such occasions at this season of the year, was dispensed with by local rains, which fortunately arrived in opportune time. Saturday, the closing day, was no exception to the rule and the general interest was kept up throughout the entire week. The grand parade of stock, the trotting races, the running races, and the sweepstakes race were among the interesting features of the day. The gate receipts were the largest ever taken in, while the hire of stalls, renting of space for stands, etc., exceeded the expectations of the management and eclipsed any previous income from that source. The management is satisfied with the success of the enterprise, both financially and as to the number and merit of the exhibits, and it was the unanimous expression of those who visited it that the number and arrangement of the exhibits surpassed all former efforts, and that the New Castle fair this year was a grand success in every respect."

The second day was again set apart as "Old Settlers' and School Children's Day." Invited by the society, both the "old and the young" were present. Interesting speeches by many aged citizens and those invited specially to speak to the meeting were made. Among the latter was that of ex-Governor Porter. His address, being full of instructive history, and interspersed with much that was humorous, was most welcomedly received.

The poultry show this year deserves special mention. The largest and best display of fowls ever shown in the county was here exhibited, and while the premiums were hotly contested, there seemed to be no dissatisfaction at the awards as made by the committee.

The bicycle races on Thursday proved a happy and an interesting feature of the day's program.

In the Woman's Department there was double the space allotted for exhibits by reason of two additions built to the Hall. Yet the increased and varied exhibits filled even this increased space almost to overflowing, while the floral display has never been equaled at this place.

No one premium offered afforded so much satisfaction or more excitement than the one offered to "the lady who could harness, hitch, get in buggy and start a horse quickest."

The society has decided to make additional improvements this year, looking to increased capacity and permanency of structure before holding our fair for 1887.

Again we append a table of statistics, giving the principal productions of the county, showing the increase or decrease in the products or articles named and comparing the two fiscal years, 1885 and 1886, ending June 1 of each year.
TABLE OF STATISTICS.

<table>
<thead>
<tr>
<th></th>
<th>1886.</th>
<th>Increase over 1885.</th>
<th>Decrease from 1885.</th>
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<tbody>
<tr>
<td>Acres of wheat</td>
<td>45,505</td>
<td></td>
<td></td>
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<tr>
<td>Acres of corn</td>
<td>47,244</td>
<td></td>
<td></td>
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<tr>
<td>Acres of oats</td>
<td>5,780</td>
<td></td>
<td></td>
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<tr>
<td>Acres of timothy</td>
<td>9,206</td>
<td></td>
<td></td>
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<tr>
<td>Acres of clover</td>
<td>23,144</td>
<td>981</td>
<td>4,455</td>
</tr>
<tr>
<td>Acres of blue and other wild grass</td>
<td>113,692</td>
<td>1,672</td>
<td></td>
</tr>
<tr>
<td>Acres of plow land, not cultivated</td>
<td>2,874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres of new land, first cultivated</td>
<td>1,442</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acres of timber land</td>
<td>42,920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rods of tile drainage in operation</td>
<td>500,826</td>
<td>11,655</td>
<td></td>
</tr>
<tr>
<td>Bushels of clover seed saved</td>
<td>2,318</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds of butter produced</td>
<td>497,316</td>
<td>96,909</td>
<td></td>
</tr>
<tr>
<td>Number of hogs fattened</td>
<td>51,582</td>
<td></td>
<td>4,233</td>
</tr>
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*Very few hogs or pigs are left, hog cholera having prevailed throughout the entire county.

In the quality of her live stock, Henry County ranks among the first.

Here one finds horses of the different classes rated among the best; especially is this true of draft classes. In cattle, the shorthorn breed predominates, and several herds in this county are widely known as among the best. A few herds of Jersey cattle very creditable to the breed.

The Henry County Shorthorn Breeders' Association, organized last fall by a number of gentlemen interested in the improvement of the various grades of stock in the county, has held several interesting and profitable meetings during the winter. It is in a flourishing condition, and its membership is steadily increasing.

The work of the Association and its objects are attracting the attention of stockmen not only in this but in adjoining counties. The indications are that much good will result from the work of the Association to the fine stock breeders of the county.

Henry County is fertile in the products of agriculture, with roads unequaled, convenient railroad markets throughout the entire county, there being over one hundred miles of railway, belonging to three different and distinct railway systems, well distributed in the county, yet all touching New Castle, the county seat, giving to it many shipping advantages. Manufacturers are recognizing this advantage, as is attested by the additional smokestacks and the various new whistles which may be daily seen and heard in and about our little city.

This county is usually free from debt, with taxes below the average and money in the treasury, possessing good public buildings and institutions, among which is a Home for the Pauper Children, who, to themselves and away from the company, example and influence of older paupers and criminals, are here educated and trained to good manners, cleanliness, and to habits of industry, performing the lighter domestic duties of the Institution.

The schools of Henry County stand second to those of no other county in the State, comprising, in addition to the district and village schools, three commis-
TIONED high-schoools, with terms of nine months each, and three township graded
schools. The county and village schools, with very few exceptions, have uniform
terms of seven months, and are carefully graded. The introduction of "Childrens' Day" at the fair, says our County Superintendent, and the premiums there of-
fered, have produced gratifying results, especially in the increased care, accuracy
and neatness of school work.

FRANK M. MILLIKAN,
Secretary.

HUNTINGTON COUNTY.

By reference to page 303 of the last Annual Report issued by the State Board
of Agriculture you will find that my predictions came true, i.e., "We expect by
the third week in September, 1886, to have new grounds, more centrally located
and of easier access to the citizens of our growing city, as well as to all parts of
the county. We will then give premiums that will attract the attention of breed-
ers," etc.

Our new grounds are the most beautifully located of any like park in the
State. Situated just outside the city of Huntington, they are easily accessible by
drives or by railroads. Located on the south bank of Little River, they are hand-
some, picturesque and complete. They contain thirty-five acres, and are most ad-
mirably adapted for their use. As you enter the grounds you pass through a park,
beautifully shaded, lovely in its surroundings, the slight roll in the grounds only
adding to the charm and beauty.

All that nature can do has been bestowed here, and art has added charm upon
charm to the beautiful place. It is indeed a fine park, and when the improve-
ments contemplated are completed we will have a veritable "Second edition of
Eden." Our grounds are laid out in a masterly way, every department being easily
accessible and in regular order. The part devoted to stock is not huddled together
with the fine art department, and vice versa, but everything is uniform and regular.
An excellent half-mile track, and withal we have a ground that is the pride of our
people, and one that is in keeeping with the success of our exhibition.

The weather was very propitious in the start, but on the second day a heavy
rain and wind storm came, lasting two days, which came near taking the "wind"
out of the stockholders and all others interested in the success of our first exhibi-
tion on the new grounds, but on the fourth day the "cloud with the silver lining" came,
and our fair was a grand success.

Our premiums on live stock, and especially in horses and cattle, were largely
increased, and, as a reward, we had a fine lot of horses from Canada, the property
of Messrs. Fisher & Gilson, who are wide awake gentlemen, and fully alive to the
interest of those desiring to improve the horse. In their stable were several very
fine English Court horses. So great was the interest taken in these horses that
they sold all they brought with them, and several of our more enterprising farm-
ers went to the Fat Stock Show, held at Chicago, and purchased several more
of the same firm.
Among the displays in this department that deserve special mention was that made by the "Wabash Importing Company," who had several fine specimens of Clydesdales on exhibition. The show of Shorthorns was not quite up to former seasons, although we had two very fine herds, and close competition in all the classes.

The show of Jerseys, Holsteins and all others were especially fine, and larger than ever before.

The Poultry Department was full to overflowing and was far beyond the expectations of the most sanguine, having more than we could possibly take care of. Next year we will be prepared for all that come.

Hogs and sheep, while not up to the standard of former years (as regards numbers), were very fine.

Our display of grains and seeds was the largest ever seen in this part of the State, and many times we heard the expression that "such a display would be a credit to our State Fair."

The society this year took a new departure by separating the "Ladies Department" from Floral Hall, and building a large, commodious building for their exclusive use.

We set apart about twelve acres for the display of farming implements, which was all taken up the day before the fair commenced, so that we had to devote more space to this department.

Our fair, taken as a whole, was the grandest success the county has ever known. We attribute this to a thorough system of advertising, and fair, honorable treatment of all exhibitors, making them, if possible, feel at home. This attained, they feel at once that they are part of the show, and bend every effort to make it a success.

Progression is marked in all pursuits of life in this county, among those most noticeable being the system of drainage, and the manufacture of the proper material. There are at present twenty-six tile mills in the county, with an average annual output of about $75,000. The average Huntington County farmer is not one who believes in the largest amount of work being accomplished in a given time, but on the contrary believes that what you do, do well, hence the system of drainage is gradually advancing, and in the course of a few years will be as perfect as is possible for it to be.

Among the new industries added to our city in the past year is that of the Huntington Creamery Association, and we, living in the city, have the satisfaction of sitting down to our meals without the "usual string" attached to the butter dish.

Leon T. Bagley,
Secretary.
JACKSON COUNTY.

The eleventh annual fair of the Jackson County Agricultural Society was held on the fair grounds, one-fourth of a mile east of Brownstown, September 7 to 11 inclusive, and was the most successful ever held in the county. Each department was well filled.

The exhibitions of Shorthorn cattle and draft horses were the leading features of the fair. In the contest for the premiums offered by the Jackson County Draft Horse Breeding Association for the best suckling colt, there were forty entries, each possessing some merit, and was very satisfactory to the Association.

The exhibits in each department showed great improvement over any previous fair. Animals and articles that would have ranked well some years ago would hardly pass now.

The society is in excellent working condition. The grounds are owned by the county and the improvements by the society.

The growing of wheat, corn and watermelons has heretofore occupied the farmers' attention, but for the last few years the raising of improved stock of all kinds, especially horses and cattle, has been steadily gaining.

There is also a marked improvement in the manner of farming. The care of the soil is receiving more attention in the way of rotating crops and the application of bone dust; seeds are selected more carefully, and the cultivation executed with greater care.

In the way of improvements, the march has been steady and sure. Comfortable, and, in many instances, fine residences for the family and good barns for the stock have taken the place of the log hut and pole stable.

Draining is receiving more attention each year, and large tracts of low lands on what is known as "White Creek Slosh" have been redeemed by open drains and made to grow golden grain instead of swamp weeds. In addition to the open drains there has been a large amount of tile draining, which is giving satisfaction.

A great many farmers are using barbed wire fencing, which is considered more durable and cheaper than rails or boards. This county is adapted to all kinds of farming. The Driftwood Fork of White River enters the county at the northeast and runs diagonally across the southwest corner. Its fertile valleys can't be beat for corn or wheat. In addition to the rich bottom land we have a large quantity of sandy soil well adapted to raising watermelons and all kinds of vegetables, and will produce them from two to four weeks earlier than the clay soil.

JOEL H. MATLOCK,
Secretary.
BOARD OF AGRICULTURE.

JAY COUNTY.

Our society held its Fifteenth Annual Fair on our grounds from September 28 to October 1, inclusive. On the first day it rained, nevertheless we had 173 entries recorded up to 10 o'clock P. M. The second day was children's day and opened up clear, although the roads were not good. We had at 12 o'clock about 5,000 children of school age on the grounds, all being admitted free. A grand banner was presented to the township making the best display, and one also to the school making the best display. We had an Educational Department in charge of the County Superintendent, and gave premiums for school work. The Horse Department was large and reflected credit on our exhibition. In cattle, Short-horns, Jerseys and Holsteins were represented. In hogs all classes were represented. Our total number of entries aggregated 489. The society is in a healthy condition and ranks among the first in the State. In agricultural pursuits and in producing fine stock, our county is coming rapidly to the front. Our county seat, which fifteen years ago had a population of 500, has now 4,000 population.

There are 200 miles of free turnpikes in the county, making excellent drainage along the highways. We have recently developed natural gas in quantities sufficient for lighting and heating at our county seat. With good schools and churches and intelligent farmers and business men, the future of our county is bright.

Robert B. Stevenson,
Secretary.

JEFFERSON COUNTY.

The Jefferson County Agricultural and Mechanical Association held the tenth annual meeting on its grounds September 21 and 22. This meeting was held only for the purpose of having a social gathering of the farmers and keeping the chain of our annual meetings unbroken from year to year.

As the Association has been holding the last three meetings on the Driving Park grounds at Madison, which were not successful financially, caused by the light attendance, it became apparent that for the good of the Association, it was best to change our location to some place in the country. The managers failed to find a suitable location until about the 1st of September, therefore, the Association had no time to prepare the grounds for holding a fair this season, as there were no improvements on the land.

The Association has purchased their present location, which comprises forty acres of land, located near Wirt Station, on the J., M. & I. R. R., five miles north of Madison, there being a side-track and stock-chute at the station, making it a convenient point for exhibitors from a distance to bring stock and farm machinery. The grounds, when properly improved, will be well adapted to the use of the Association, and where we propose to build up a home, one that we trust will be an honor to the farmers of this county, and be the means of advancing the interest of agriculture generally.
COUNTY AND DISTRICT REPORTS.

This Association has reorganized, and is now a joint stock association, which, we believe, places it on a much better basis.

As this meeting was only intended as a social gathering for the purpose of hearing lectures and essays read, it was not expected there would be a very large display of exhibits; nevertheless, there was a very respectable display of farm products, there being no stock shown, as the Association had no accommodations prepared. No premiums were offered or gate fees charged, and, had the weather been favorable, we would have had a large attendance, but it being unfavorable, our attendance was small. It was almost the unanimous expression of those present that they were well pleased with the enterprise of the Association, and everything bids fair for the prosperity of the Association in the future. The new Board of Directors have fixed the time for our next meeting, which will be from September 5 to 9, 1887, inclusive, and do earnestly solicit the patronage of all interested in building up the interest of agriculture.

Agriculture in this county is still on the up grade. Our farmers seldom plant a crop without using a fertilizer of some kind. We have been blessed with a fair crop of all kinds of products; but, with our abundant crops, the farmers feel that they are not receiving a fair remuneration for their labor, owing to the low prices for which their products sell. Stock-raising is not on the increase as rapidly as in former years, owing to the decline in price, but the quality is steadily improving in all classes.

We have good prospects for another railroad soon running along the Ohio River through Madison, which, we hope, will revive the manufacturing interest and thereby make our markets better and increase the facilities for shipping our products.

The stock law is in full force in the county, and almost every farmer is well pleased with its workings. The old rail fence is rapidly disappearing and improved styles taking its place. Taking everything into consideration, the farmers of our county are keeping step with the march of progress in every particular.

THOS. H. WATLINGTON,
Secretary.

JENNINGS COUNTY.

This Association held its sixth annual fair at North Vernon from the 10th to 13th of August inclusive. The entries in horses, mules, cattle and hogs was fully up to the average of former years; sheep not so good. The display of poultry and the various other departments were good.

The receipts, owing to heavy rains on Thursday and Friday, fell off considerably from former years, yet sufficient was realized with which to pay all premiums and other expenses and leave a small amount in the treasury. The improvement of stock in this county is plainly to be seen, especially in horses and cattle. A horse or a mule that would pass for first class ten years ago would not stand any show at all now, and the same rule will apply to all kinds of stock.

C. D. SHANK,
Secretary.
KNOX COUNTY.

The sixteenth annual fair of the Knox County Agricultural and Mechanical Society was held on the fair grounds of the Society, near Vincennes, October 11 to 16, 1886, during most auspicious weather. It was the most successful fair ever held in the county. The exhibition in every department was very fine, and the attendance unprecedented, as is shown by the tabular statement presented herewith, and, without referring to each industry individually, I would say that the progress in every industry has been entirely satisfactory.

Knox County is well adapted to cereals, stock and fruit. The wide bottoms along the Wabash and White rivers, and on the various streams that traverse the county, are among the finest corn lands of the State, and on which this year grew one of the finest crops of that cereal ever produced, the most of which has already found its way into market at a fair price. Our uplands are among the best wheat-producing lands in the State, our farmers raising on them from 35 to 40 bushels per acre of the very best quality.

Our farmers are in a prosperous condition, with their farms in a high state of cultivation. Most of them have fine houses, good fencing, careful drainage, with an excellent quality of all kinds of live stock, all of which is conducive to their health and prosperity.

The progress made in better farming, in all its branches, is plainly shown to those who attend our fairs from year to year. There is no line of agricultural product but what has made marked advance; particularly is it observable in the improved live stock of the county. Scarcely a herd of cattle is to be seen in our fields but what it is easy to see that there is a decided improvement, by the cross of Shorthorn, Holstein or other good breeds. Horses are also much improved by the infusion of Norman, Clydesdale, or other good breeds.

The crops for the year 1886 of wheat, oats, corn, clover and timothy hay, indeed all kinds of farm and garden products, were the best had for years.

It can be said of our farmers that, as a general thing, they keep themselves well posted upon all matters pertaining to farming, and that they use the latest and most improved farm machinery of all kinds for the purpose of taking care of the crops.

Taking everything in consideration, Knox County is fully up to the surrounding counties in all things pertaining to agriculture, and, it is believed, will compare favorably with any county in the State.

GERARD REITER,
Secretary.

LAGRANGE COUNTY.

The Lagrange County Agricultural Society held its Thirty-fourth Annual Fair at Lagrange, September 28 to October 1, 1886. Owing to bad weather, both before and at the time of the fair, the society did not realize that degree of success anticipated. No doubt the success of fair would have been complete had the weather
been favorable ten days before, and during the week of the fair. To begin with, the fly badly injured the wheat crop, and the farmers this year had purposely delayed seeding till the middle of September, to avoid it, and then a series of heavy rain storms set in that lasted the rest of the month. So when the time for holding the fair came on, it found the farmers with but a small part of their seeding done, and with their clover seed largely in the field. On the last days of September it could not be expected that farmers would leave their seeding undone to attend the fair.

Then, during the fair the weather was so uncomfortably cold that the snow blew in the air, and the people went shivering over the grounds. With all these drawbacks, the receipts would have been sufficient to pay expenses and premiums if there had been no old indebtedness to liquidate.

The entries and exhibits in the Stock Department were fairly good, though somewhat less than last year. In horses the show was up to the usual standard, while that of cattle fell off. The exhibition of sheep excelled that of last year, filling all the pens and compelling the construction of many new ones. In the Swine Department the exhibit was moderate, and the quality of the animals exhibited very good. The ladies and a few of our most enterprising merchants made the finest display in the Art and Floral Hall ever seen here. Our dealers made a fine show of agricultural implements, and the exhibit in all other departments was creditable.

In portions of the county the wheat was badly injured by the fly, in other parts the yield was good. The quality was excellent. The corn crop was good, both in yield and quality, except in the western part of the county, where it was injured by a protracted drought. The same is true of both oats and potatoes. The apple and other fruit crops were abundant. A larger number of hogs have been fattened and shipped out than usual. Many sheep and cattle are being fed for the markets. There has been no hog cholera among the swine, nor contagious disease among the cattle. General healthfulness has prevailed over the county the past year, and the people, as a whole, are prosperous and contented.

Elias Wight,
Secretary.

LAPORTE COUNTY.

The Thirty-fifth Annual Exhibition of the Laporte County Agricultural Association was held on the Fair Grounds near the city of Laporte, from October 5 to 7, which in many respects was one of the most successful exhibitions the society has held for many years.

The display in quite a number of departments exceeded that of previous years, while in other departments the exhibition was not quite up to the average, but taking our fair as a whole it was a success.

Our premiums are not quite as large as some counties, but we consider them liberal, and for a number of years we have paid in full. We feel that in a great measure we have the confidence of the people to a much greater extent than 17—Bd. of Agr.
before, and although there was offered fabulous prices for privileges, we banish from our grounds everything of a questionable and demoralizing character, and are pleased to know that the moral sentiment which so generally prevails in this county upholds and sustains us in the determination to rid ourselves of all swindlers, humbugs and gamblers.

Our horse show was truly grand. The several importers and breeders of thoroughbred horses had many noble animals on exhibition. Some of our horses were successful again this season in winning first prizes at our State Fair; also at other State and district fairs. The Clydesdale and Normans for heavy draft, the Hambletonians for roadsters, and the Cleveland Bays or English Coach horse gracefully combining both qualities, making them truly an all-purpose horse, each have their special champions showing up the merits of their particular favorites. The same strife can also be said to exist among the breeders of cattle, sheep and hogs, and this friendly strife or competition has resulted in a remarkable improvement in the live stock of the county, and as these improved breeds “come to the front,” the inferior or scrub stock disappear, as the stock growers realize that it costs no more to raise a good animal than an inferior one, while the improved breed or more carefully bred animal in many cases commands more than double the price in our markets.

One new feature of our fair was a class devoted to the bee industry, which resulted in bringing out an exceedingly fine exhibit of honey and other products of the bee; also apiary implements.

The marvelous display of needle work and other exhibits, made by our cultured women, has never been excelled. This department is managed by an efficient corps of their own officers, and has proved one of the best features of our fair.

The exhibit of the products of the farm was also very good. We are pleased to report a much better condition of agriculture in the county. Our more intelligent and practical farmers are in many instances raising as much grain off an eighty-acre farm as one hundred acres formerly produced. The crops in the county were good, although the dry weather in the latter part of the summer and during the fall affected the corn, potato and other late crops, but on the whole have had more than an average crop.

There has been a very noticeable improvement in our country roads, although we have no gravel or stone for macadamizing; yet a large portion of our roads, even those that were quite sandy, by systematic and common sense work, have been graded and the surface covered with clay, which soon apparently becomes as solid as the gravel roads in other sections of the State. We have no toll roads, all are free. The general use of the broad tire on heavy laden wagons, we think, has been beneficial. During the past season our county has erected a magnificent asylum for the poor, a large substantial structure built of brick and stone, with metal roof and steam heating appliances. This county, being one of the wealthiest, with no county indebtedness and a low rate of taxation, could well afford a court house that would be in keeping with the private and other public buildings of the county.

GEO. C. DORLAND,
Secretary.
LAKE COUNTY.

The Lake County Agricultural Association held its twenty-eighth annual fair at Crown Point, from September 14 to 17, 1886.

There is a general interest throughout the county in "the fair," and it has been the aim of the management to make it acceptable to the whole people. It is looked on as an annual holiday.

In the number of entries this fair exceeds all previous fairs. The number of horses and their superior quality would have been a credit to any society. In cattle there is a marked change in the breeds, while we have some good representatives of Durham and Herefords. Our nearness to Chicago, inducing so many to engage in dairy and milk supply for the city, has brought on our farms good specimens of Jerseys and Holsteins. The entries for cattle were about the same as previous years.

We had a smaller number of entries of hogs, but the quality was never better.

Our sheep interest in this county is not equal to some counties, we finding other branches more profitable.

Only a small area was planted in wheat, but our lands, limited in extent, produce good crops, and of fine quality. No spring wheat raised here now.

In oats we lead the State. The crops proved better in quantity and quality than for the last two years.

We raise plenty of corn, and the long season without frost gave us a yield that at one time we thought impossible.

Hay—This is a land of meadows, and in pasture only one or two counties in the State produce more.

Fences and Stock—Each owner must take care of his own stock; barbed wire being the chief material for fencing. The labor-saving machinery and implements were well represented.

Floral Hall—Not quite equal to other years, but still one of the chief attractions.

Farm Products—Equal to the average, but not what it should be here. There is room for improvement.

Butter, Cheese and Butterine—Factories and private dairies all over the county; butterine in large quantities made at Hammond.

Poultry—Not as well represented. Altogether we had a good attendance, fine weather, and, considering our extra expenditures, we are in good shape for extended usefulness for the fair in 1887.

Towns—Crown Point, the county seat, has a fine court-house, jail, county asylum, schools and churches, two railroads, easy access to Chicago, and every facility for making it a very desirable place of residence. Its business is with the surrounding country, and a distributive point for a good farming section of our county. The growth of the Calumet region in this county still continues. Capital and enterprise are making Hammond the manufacturing and business city of Northern Indiana. Access to the lake by the harbors of South Chicago gives it all the advantages of a lake port.
Lowell, Hobart and Dyer are the chief towns in other parts of the county. All have railroad connections, and all are growing, being good business points, having many advantages for trade and handling country produce.

Railroads—Eleven railroads in the county, nine of which are main lines to the seaboard.

Debt—Lake County has no railroad bond debt, the debt of the county is only six thousand dollars, and we have ample means on hand now to pay said debt as soon as it becomes due.

JOHN E. LUTHER,
Secretary.

LAURENCE COUNTY.

In compliance with the statute of the State it becomes my duty, as Secretary of the Lawrence County Agricultural Association, to submit the report of the Eighteenth Annual Fair held in this county. This exhibition was held at the County Fair Grounds, near Bedford, September 14 to 18 inclusive, and notwithstanding the rain the first two days, the fair was a complete success in every respect, and one of the most satisfactory ever held in the county. More interest than usual was manifested by the people generally. The display in all departments was good. The improved condition and number of thoroughbred horses in this county in the past few years is wonderful. Until recently but little attention has been paid to the improvement of the breeds of cattle; now our county contains a number of choice herds.

Sheep and hogs are not by any means being neglected, and the bee industry is receiving considerable attention.

The display in the Ladies' Department was grand, and beyond our power to describe, or to give any adequate idea of many choice and magnificent specimens of handicraft placed on exhibition by the ladies of Lawrence County. This display was made more attractive by the taste and skill displayed in the arrangement of the articles on exhibition in Fine Art Hall, by the ladies, and much credit is due them for the interest they have taken to make our annual fair a success.

The display of products of the farm, garden and orchard, was the best ever held in the county.

Crops the past season were very good. The condition of agriculture is prosperous, the most approved kind of implements are in demand, while elegant and commodious residences and barns are taking the place of the old buildings, thereby adding to the comfort and convenience of our prosperous farmers.

During the past year the Association has erected a number of good and substantial buildings upon the Fair Grounds, including a wing to Floral Hall, a stable and twenty-two box stalls for the accommodation of horses, and twenty-four pens for sheep and hogs. Our receipts this year were sufficient to pay all the expenses of the fair, including the premiums in full as soon as awarded. Our grounds and buildings are in fine condition, and the Association is in good shape for future exhibitions.

N. E. STROUT,
Secretary.
MADISON COUNTY.

The Society held its annual fair from September 6 to 9, 1886. This Society is in a good healthy condition.

Among the permanent improvements made are Poultry Hall, Art Hall, Horticultural Hall, and Machinery Hall, with eighty feet of shafting for the purpose of furnishing power for the display of all farm machinery that could be attached. The display of self-binders was especially good. This Society has ample accommodations in the way of good stalls and pens.

The Society has always managed to conduct its fairs so as to furnish accommodations to all persons attending with stock or articles for exhibition, and have offered liberal premiums in the speed ring.

We have never permitted gambling or the sale of any kind of liquors upon the grounds; therefore, the patrons of the fair always find an orderly, quiet, peaceable place of resort, where they can meet friends and enjoy each others' society.

It is our aim to keep step with the improvements of the county and to encourage in every way the advancement of the agricultural pursuits of the county.

The exhibition of fine arts and ladies' work was a credit to the county, and was one of the great attractions of the fair.

The fair was a complete success in everything calculated to further the interest of the county.

The principal crops raised in this county are wheat and corn. The wheat crop this year was the best for years, and most of the crop was cut, thrashed and milled without any interference from rain. The corn crop was good and a very large yield, selling at 30 cents per bushel.

Of the farm stock of this county, we can only say it is not what it should be, but is improving each year. We have a few herds of Jerseys, Shorthorns and Holsteins.

The horses of this county are all fair, with quite a number of thoroughbred stallions—light harness and draft.

There are several good flocks of sheep in the county—Cotswolds, Southdowns, etc.—yet the habit of every one owning a worthless dog (except at tax time) has prevented many from turning their attention to this industry.

Of swine, the Poland-China and Berkshire breeds predominate, and almost all farmers can show something good in crosses, according to their fancy.

Our display of poultry at the fair was very fine.

Some attention is given to horticulture in this county, and the crop of fruits was unusually fine this year; yet there is not a sufficient quantity of apples raised to supply the demand. Whether it is the want of attention or some other reason, is yet an undecided question.

The drainage of this county is receiving a great deal of attention, and our farmers can see the benefit soon.
Most fencing is rail, but a great many are making a rail and wire fence, which gets rid of the "worm" in the old-fashioned rail fence.

The last few years have made great changes in the roads of the county; free "pikes" did it.

Our city (Anderson) has made more improvements this year than for years—new water-works (owned by the city), new business rooms, etc.

The county has just finished a very nice Orphans' Home near the city.

C. K. McCULLOUGH,
Secretary.

MARION COUNTY.

The year will long be memorable as one of plenty. With an early spring, and the aid of genial showers throughout the season, bountiful harvests of golden grain and luscious fruits of all descriptions have rewarded alike every tiller of the soil.

The organization is not so much for the purpose of holding annual fairs as for the general educational purposes in the line of agriculture and horticulture.

We hold regular monthly meetings, and are glad to note evidences of growth and prosperity at every session. The most interesting meetings have been held in summer at the "rural residences" of members in different neighborhoods throughout the county. With picnic dinners, tastefully arranged by the ladies, combined with the sociability of its members and business of the meeting, these outdoor gatherings have proved to be both pleasant and profitable.

During the last year, as is our custom, we held three exhibits, at most of which the competition for premiums was very spirited. Besides these a butter show was made last winter, consisting of 23 entries, and the exhibit was very artistic. Ten dollars were awarded in four premiums.

At our February meeting a culinary display was made by the ladies. About $30 were offered in premiums, which were well contested, as is shown by the fact that 84 entries were made. After all premiums were awarded, the meeting was organized into a "committee of the whole," for tasting the good things, and a feast soon cleared the tables.

Our annual strawberry exhibit in June was one of the best, as many as fifteen varieties being shown by one exhibitor, and some of the berries of the Sharpless family measuring seven inches in circumference. In July a good show of raspberries and other products was made.

An increasing interest was manifested at the August meeting by the very large display of grains, vegetables, fruits and flowers, there being over one hundred and forty entries. In fact, at all the meetings various products have been shown in their season, but those just mentioned were our special exhibits.

A number of excellent papers, besides reports from standing committees, have been read, which were of practical value to all horticulturists, among which were the following: "Population and Subsistance," by Cyrus W. Hodgin; "Vacation

The Society has had its financial embarrassments, which have prevented it from extending its usefulness as far as it might have done, but with the horticultural interests manifested the past year by its members we have much to hope for in the future.

Mrs. A. G. Chandlee,
Secretary.

MONROE COUNTY.

The second fair of the Monroe County Agricultural and Mechanical Association was held on our grounds, near Bloomington, September 21 to 25 inclusive. The weather was very unfavorable the first two days, but good enough the last two to bring a very large crowd. It is not saying too much to assert that it was the best fair ever held in the county, both in attendance and the number and quality of exhibits. Our county is somewhat behind the times in the matter of improvement of live stock, but the last two fairs have demonstrated the fact that our farmers are fast finding out that good stock costs really less than a poor quality, and the exhibit of live stock at our late fair would be a credit to any county, and showed a wonderful improvement over that of former years. The show of corn and wheat was excelled in quantity, but was certainly not excelled in quality at the State Fair. Our exhibit of fruit carried off the blue ribbon at the State Fair. Our farmers have had a prosperous year. Crops have been excellent and prices fair. No epidemic has visited our live stock, and if Monroe County is not ahead of her sister counties in the amount of grain and live stock raised, she is much nearer the head of the procession than she ever was before. It is safe to say that double the quantity of fertilizers was sold here this fall than any former year. Our prospects are very bright for next year. Our grounds are in good condition, and what is better the improvements are all paid for. After paying our premiums in full we had enough left to pay for all indebtedness of the past year, amounting to over $700.

W. H. Seward,
Secretary.

MONTGOMERY COUNTY.

In my former reports on Montgomery County and our county fair, I have endeavored to give you somewhat of a description of each, and as this is the seventh time I have been called upon to make such a report, it occurs that everything I might say would be but a repetition of what has already been told. Our fair has always been placed before you as one of the best, if not the very best, in the State, and as the number of entries and quality of exhibit would increase from year to-
year, it has been carefully noted. After the close of the exhibition of 1885, expressions, such as "No improvement can be made," and "No better fair will ever be held," were indulged in, but not so. The exhibition of 1886 was the grandest in the history of the association, both in point of exhibit and attendance. On Thursday the sale of tickets showed us that 25,000 people had passed the gates, the greatest sale of tickets for one day in the history of the association. To go into a detailed account of the different departments, or a description of our grounds, would be, as before stated, a repetition of what has been said in former reports; hence, with the belief that all readers of the Indiana Agricultural Reports are so perfectly familiar with the history of Montgomery County and its fair, I will say no more, but invite every reader to come to the exhibition of 1887, and my word for guarantee that the best fair in Indiana will be seen.

F. L. Snyder,
Secretary.

NEWTON COUNTY.

The Newton County Agricultural Society held its Eighth Annual Fair on the grounds of the society, at Morocco, September 7 to 11. The weather was fine, all departments were well represented, and every one seemed pleased and satisfied. Wednesday, the second day of the fair, was given exclusively to the County School Exhibition, which was a grand success. We think every county fair should set aside one day for a county school exhibit, as it gives one day of merriment for the little folks.

The most popular feature of the fair, the Horse Department, was well represented. Newton County boasts of having some of the best Norman and Clydesdale horses there are in the State.

In cattle, the Durhams, Holsteins, Herefords, Jerseys and their grades were represented.

In the sheep pens were but two classes, the fine wool and the downs. As there are but few sheep raised in the county, the Sheep Department cuts a very small figure in our fairs.

The hog pens were well filled with pure-bred Poland-Chinas, Berkshires, Jersey Reds and others.

The most of the stock on exhibition is owned by the farmers of our own and adjoining counties.

Of farm and garden products our entries were very large and the quality good. The showing of fruit was very small, owing to the trees being nearly all winter-killed.

The Art and Floral Halls were well filled with the very best of handiwork, showing that great pains was taken by the ladies, striving to see who would have the largest and best collection.
Newton County has a rich, fertile soil, well adapted to raising grain, corn and oats being the chief products. Our farmers are thrifty and intelligent. Our schools are in excellent condition. A great amount of ditching is done in the county, and our wet lands are made as valuable as any soil for grazing. The society feels as though it has been useful in the past, and we are encouraged by the success witnessed from year to year.

C. M. Hanger,
Secretary.

NOBLE COUNTY.

The thirty-first annual fair of the Noble County Agricultural Society was held on the grounds of the association at Ligonier, October 12 to 16 inclusive. This exhibition was the largest in the history of the society, the entries exceeding those of any former year. The attendance was very good, considering the weather. The great storm of October 14 interfered materially with the fair. This was to be the “big day,” but the storm was very severe and continued throughout the entire day. Tents and sheds were blown down, and fences on the farms throughout the county were badly wrecked. On Friday, however, the weather was pleasant, and the attendance large. The faces of the managers brightened up as the long line of vehicles and footmen passed into the grounds, assuring them that the receipts would be sufficient to pay all premiums and running expenses. All departments were well filled. The live stock, in quality of animals shown, surpassed any exhibition in the northern part of the State. Of horses there were 180 competing for premiums, all the leading breeds being represented. In addition to those competing for premiums, there was shown the fine stable of imported Normans and Clydesdales of the Ligonier Live Stock Association, among which was the celebrated Norman stallion “Marvelous,” which took the grand sweepstakes prize at Chicago in September. There was shown also the fine Hambletonian stallion “Haw Patch,” two imported Norman mares and a fine stallion, “Bellaire,” and a number of Belgian and English shires, which did not compete for premiums. Taken as a whole, it was the best show of horses in the State. The Cattle Department was excellent. There was on exhibition and competing for premiums three herds of Shorthorns, three herds of Holsteins, one herd of Herefords, one herd of North Devons, one herd of Jerseys, and a large number of grades. Of hogs and sheep, there was a goodly number and of superior quality.

The poultry was a show by itself. The Agricultural Department was fairly represented. The dry weather that prevailed through this section prevented as large a showing as there would have been had the season been more favorable. The Ladies’ Department was very fine, and drew from the crowd of visitors many exclamations of surprise at its extent, and many words of praise and commendation for the beauty of the articles on exhibition and the skill displayed in their arrangement. Floral Hall was the center of attraction. The ladies deserve much credit. This exhibition was a success, and the managers have already begun the work for next season, fully determined that the Noble County Fair shall be second to none in the State.
The grounds of the society are located one-half mile west of Ligonier, and are owned in fee simple by the association. During the past year nearly twelve hundred dollars have been expended for improvements. A new agricultural hall has been built, barns for horses and cattle have also been erected, and other improvements made for the comfort and convenience of exhibitors and visitors.

Noble County is largely devoted to grain growing, though much attention is given to stock-raising, which is receiving more attention each year. Much improvement is noticeable in the quality of stock raised; very few "scrubs" are to be seen.

Considerable attention is given to drainage, and much of the low and formerly worthless land is being reclaimed and transformed from swamp into beautiful meadows.

The crops for the past season have been moderately good; wheat very nearly an average crop, and of excellent quality; corn about three-fourths of an average crop, and of fair quality, being somewhat affected by the drought, which also affected the vegetable and root crops to some extent. About the usual acreage of winter wheat has been sown.

Farmers, as a rule, are in comfortable circumstances, but the low prices realized for grain and live stock had a somewhat depressing effect upon them.

The roads of the county need more attention and more work than is done under the present law. Some system of road-making should be adopted that will be more effective and general. Much of the labor done on the highways under the present system is nearly useless, and in some instances make the roads worse, instead of better. Farmers, as a rule, believe that stock should be fenced in.

Ligonier is located on the line of the Lake Shore & Michigan Southern Railroad, nearly midway between Chicago and Toledo. It has a population of 2,500 inhabitants; is principally an agricultural town; some manufacturing is done. Excellent schools are maintained nine months each year. The course of study is so arranged that pupils who graduate from the High-school can enter the universities of the State without further examination.

The town is noted for its excellent grain and stock market. A large mill is under course of construction, and will be completed by May 1, 1887, with a capacity of five hundred barrels of flour per day.

Large quantities of stock are gathered from all parts of the county, also from Lagrange, Elkhart, Whitley and Kosciusko counties, and shipped from this point. Substantial improvements are made from year to year in the way of good buildings, etc. Churches of the leading denominations are maintained, and two newspapers are published.

The good markets for all kinds of grain and produce, stock of all kinds, the excellent schools maintained, the substantial business men of the place, make Ligonier the leading town of the county.

J. H. Hoffman,
Secretary.
PARKE COUNTY.

The Parke County Agricultural Society is enabled to report increased prosperity and prospects. The seventh annual meeting, held at Rockville August 16 to 21, furnished evidence of growth in the agricultural and stock raising interests of the county.

The meeting surpassed all former efforts, and gives abundant assurance of future success. The energetic and enterprising policy of the management resulted in placing our association on a firmer financial footing, notwithstanding extended outlays were made in permanent improvements. The circuit system has been of much service to our society. By it a number of counties work together in harmony, unify methods of management, avoid conflicting dates and afford exhibitors advantages in shipping rates, etc., not otherwise obtainable.

The show of horses was never equalled. All classes were well filled, and in sweepstakes about fifty entries were made.

The cattle department was well-filled. There never has been such a show of Shorthorn cattle at our fair as that of the past meeting. A special premium was offered for "county herds," but the experiment was not gratifying. While there are many royally bred cattle in the county, our growers and breeders have not taken kindly to the habit of putting them on exhibition at the county fair.

The show of hogs was very fine. Additional pens were built to meet the demand, and they represented largely Parke County breeders.

The sheep department was well filled, the leading strains being Shropshires and Cotswolds.

The poultry was excellent, and represented those who make a specialty of fancy breeds of chickens in the county. There is rapid growth in this industry, and the county is well supplied with extensive breeders.

The agricultural hall was fairly filled, though the variety was not so great as usual. Much interest is manifested in the varieties of wheat and corn, the two leading agricultural products in the county.

The fine art hall was filled with articles of rare excellence, and, while the number of entries was less than usual, the fine appearance and rare merit of the exhibit was such as to make this department more than ordinarily attractive.

The display of machinery and implements was fine. There is a growing interest in fine stock of all kinds, and the improved strains introduced is having a perceptible effect in raising the general average of stock in the county. An organization known as "The Parke County Shorthorn Breeders' Association" is giving due attention to the promotion of that industry, and doubtless stimulates in an indirect way many others.

A like interest is manifested in crops, their rotation, the soil and fertilization, drainage, etc., in all of which the Agricultural Society is contributing its might to a comparison of results.

W. H. ELSON,
Secretary.
PERRY COUNTY.

Our Agricultural and Mechanical Association held its Fifteenth Annual Fair on the society's grounds, near Rome, beginning October 4 and ending October 9. The weather was fine during the time and the attendance very good. Our stock show was very good and equal to former years. We paid all premiums in full.
The cattle show consisted of Shorthorns and Jerseys. Sheep and hogs were of good quality, but the number of entries were few.
The poultry show was equal to former years, consisting of Bronze turkeys, Pekin ducks, Bantams, Plymouth Rocks, Leghorns, etc.
The Agricultural Department was never better in the history of the fair. The quality was very good and of great variety.
The ladies' department was well filled, from all kinds of needle work to culinary.
Our farmers are supplying themselves with all kinds of improved machinery and the best of fertilizers, so that they are determined to keep pace with time and improvements.
The stock interest is gradually and steadily improving in every direction.

Wm. H. Hall,
Secretary.

PIKE COUNTY.

The sixteenth annual fair of our Society was held on the fair grounds, near Petersburg, from August 30 to September 4, both inclusive. The fair was a more pronounced success than any of our previous exhibitions, as will be more fully shown by the statistical report, which I have heretofore made and reported. Each year seems to add to the interest taken by the people of Pike County in the success of their fair. There has also been a marked improvement in the quality of the articles on exhibition. In this connection too much praise can not be given to the matrons and daughters of Pike for the many elegant and attractive articles produced by their skill and taste, the exhibition of which made our Floral and Art Hall the center of attraction, and doubtless contributed much toward the success of the fair. In view of these facts, I would suggest that, as a rule, the premiums paid for articles in the Ladies' Department are too low, and, in my judgment, both policy and fair play demand a large increase in the premiums on those classes in which women are the principal exhibitors.

There was a large increase in the entries of live stock, more especially in the Horse Department, but the display of sheep, cattle and hogs was very creditable, and the quality was decidedly better. This improvement has been effected by the more general use of pure-bred males. While much remains to be done in this line
it is gratifying to know that our farmers and stockraisers begin to realize the fact that they can not afford in this day of progress and active competition to raise scrub stock. When this truth is generally accepted and acted upon intelligently, it will add immensely to the profits and wealth of the breeders of live stock of every description, as will more fully appear by the following figures: According to the census of 1880, there was at that time in the State of Indiana 581,444 horses, 55,000 mules, 1,363,760 cattle, 1,100,000 sheep, 3,186,543 hogs. Let us suppose that all this stock was graded up to half-blood. I think it a low estimate to say that it would add $5 per head to the cattle, $10 to the horses and mules, and $1 each to the hogs and sheep. The increase in the value of the stock above named, provided they were all "scubs" when this improvement commenced, would be, in round numbers, seventeen millions of dollars. But let us suppose that $ of the stock in the State will now average equal to half-blood grades. This would leave $ of the stock in the State "cold-blooded," or, in other words, "scubs," and their improvement, as suggested, would add to their value not less than eleven millions of dollars. I think anyone who is at all acquainted with, or posted as to the difference in value between "scrub" and graded stock will admit that I have placed the increase in value quite low enough. If I am correct in my estimate, it would directly add to the wealth of the stockraisers of the State the whole sum of this increased value in their stock.

The next thing to consider is whether it is practical to make a general or universal improvement in our live stock. I admit that this can not be done entirely by individual effort, but it may be effected by "co-operation" of neighbors, so far as cattle, sheep and hogs are concerned. As to horses, whenever breeders are willing to pay a fair consideration for the services of thoroughbreds of the different breeds, there will be found men of capital and enterprise who will gladly supply this want of the public. I take it that the most essential thing in this connection is to direct the attention of the farmers and stockraisers of the State to the consideration of this question, and when they find, by investigation, that there are large profits to be derived by the improvement of their stock, self-interest will prompt them to use the necessary means to effect the object, but further, in view of the low prices ruling for wheat, and the probability that there will be no improvement in values for years, if ever, on account of foreign competition from countries where labor is abundant and cheap, this state of things will make it necessary for American farmers, more especially in the winter wheat belt, to cease making the raising of wheat a specialty; they will from necessity be driven to other and more profitable pursuits. In my judgment, the raising of improved stock of all kinds offers a wide field for enterprise and capital. It is a business if conducted with ordinary prudence and judgment, fair profits are sure to be realized, and, further, there need be no fear that the supply will ever exceed the demand, for that is constantly increasing in a greater ratio than population, and at the same time, according to statistics, the number of live stock is steadily decreasing in every part of Europe, and also in Great Britian. The United States now supplies the markets of the world with pork, lard, beef and dairy products. It is not probable that any other country in the world can successfully compete with us in this branch of business, and there is no State that combines more advantages for successfully raising
live stock than the State of Indiana. We have a rich and almost inexhaustible soil that produces abundant crops of grain and all the cultivated grasses—without the aid of artificial fertilizers—and as a rule there is an abundant supply of pure running water, while the justly celebrated Kentucky blue grass springs up spontaneously, wherever the sun strikes the ground, affording a pasture for both winter and summer that has no equal. Many stock raisers in Indiana have been deterred from going extensively into the business of raising cattle, from the fact that they supposed it would be impossible for them to compete in the markets with cattle raised in our Western States and Territories.

This idea has arisen from the general belief that cattle can be raised and fattened ready for market, on the plains, without any expense, on the natural grasses, but the experience of the last few years has proven this to be a mistake. Cattle in the future will require both food and shelter during the winter months, otherwise the losses of stock from starvation and those terrible storms that sweep over their treeless plains, with irresistible force, would destroy all the capital that might be invested in this business. There is another idea equally as erroneous, and that is as to the number of cattle in these Western States and Territories. The census of 1880 shows that Colorado, Dakota, Montana, Nevada, New Mexico, Utah and Wyoming, all told, had 1,416,000 head of cattle, while the State of Ohio had at the same time, 1,856,000, being 440,000 head more, in a single State, than all the others put together. With these facts and figures before us, I can not see any advantage that the cattle raisers of these Western States and Territories possess over us. Consequently, I see nothing in the situation, in our own or foreign countries, that should discourage, but rather all the conditions seem favorable to those who will now embark in the business of raising improved stock, in our own and other "States" similarly situated as to climate, soil and productions.

Goodlet Morgan,
Secretary.

PORTER COUNTY.

The first and second days of the fair were fine, and by counting up the entries showed a gain of 20 per cent. over any previous year.

The stalls and pens were nearly all taken and the halls were well filled with fine displays; in fact the beginning was very encouraging. A regular boom seemed to prevail in all departments at the close of the second day. But on the morning of the third day the sun was veiled and all signs betokened a storm; a general halt seemed to be in order for the time being. Ten o’clock came and with it a rushing, mighty wind, and following it directly came a perfect deluge of rain.

When the storm ceased a wonderful change had been wrought, where but a short time before tents stood with banners unfurled to the breeze, now lay a flattened mass, with their contents soaking in the moisture, and desolation seemed to reign triumphant.
Soon the sun, which had been obscured by clouds, shone and the drying out process occupied the remainder of the day.

The morning of the fourth day opened bright, infusing life into every living thing, and the fair began to show forth its strength again.

The track was ready for trials of speed by 10 o'clock and all faces were beaming.

A rush at the gates began and continued until the fair grounds was a moving mass of life.

So passed the fourth day, with much pleasure and enough money gathered into the treasury to pay all premiums in full.

The morning of the fifth, the added day, came and in all respects was like the fourth.

The fair has been a financial success, there being a balance of four hundred dollars left for improvements.

### THE CROPS.

The past season was favorable for most small grains.

The yield of wheat per acre, from 14 to 40 bushels; quality excellent.

Oats yielded from 20 to 60 bushels per acre; quality good.

Clover seed yielded from 3 to 7 bushels per acre.

The corn and potato crop not up to the general average for the want of rain in the latter part of the season, but the quality was fine.

The meadow crop good and well secured.

I know of no better way to show the industries of the county than by giving the following statistical report:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
<th>Milch cows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres of corn</td>
<td>34,088</td>
<td>8,560 head</td>
</tr>
<tr>
<td>Acres of wheat</td>
<td>15,093</td>
<td></td>
</tr>
<tr>
<td>Acres of oats</td>
<td>20,379</td>
<td></td>
</tr>
<tr>
<td>Acres of timothy</td>
<td>22,364</td>
<td></td>
</tr>
<tr>
<td>Acres of clover</td>
<td>7,882</td>
<td></td>
</tr>
<tr>
<td>Acres of potatoes</td>
<td>1,340</td>
<td></td>
</tr>
<tr>
<td>Milch cows</td>
<td>8,560 head</td>
<td></td>
</tr>
</tbody>
</table>

Producing 3,574,891 gallons of milk, 233,355 pounds of butter, 97,797 pounds of cheese.

<table>
<thead>
<tr>
<th>Livestock</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock cattle</td>
<td>13,446 head</td>
</tr>
<tr>
<td>Horses</td>
<td>6,112 &quot;</td>
</tr>
<tr>
<td>Sheep</td>
<td>7,059 &quot;</td>
</tr>
<tr>
<td>Number of hogs fattened the last year</td>
<td>13,862 &quot;</td>
</tr>
<tr>
<td>Stock hogs</td>
<td>11,617 &quot;</td>
</tr>
<tr>
<td>Bee colonies</td>
<td>1,000 &quot;</td>
</tr>
</tbody>
</table>
The prevailing custom of many secretaries of fairs in giving reports of their counties is in pointing out some of their superiorities, which is entirely proper, and I feel like indulging myself, giving some superiorities of Porter County.

In the city of Valparaiso can be seen one of the finest court houses in the State. There are four as large and fine new churches as can be found in larger cities.

We claim to have, in number of pupils enrolled, the largest Normal School in the land; also a graded free school with a daily attendance of 800, and an academy and ward schools; the attendance in all something over 3,000.

Our facilities for manufacturing are as good as can be had, there being three trunk line railroads running through this place.

We have a wagon and carriage factory and several other minor factories in this place.

There are a number of other towns in this county.

Chesterton has the Hilstrom organ factory and extensive brick yards. Wheeler is one of the largest milk centers in the State. There are also other thrifty towns.

The citizens throughout the county are enterprising, as shown by many large, fine buildings.

The highways and hedges are good; also fine stock of all domestic breeds are to be found on many well kept farms.

E. S. Beach,
Secretary.

POSEY COUNTY.

The twenty-eighth annual fair of the Posey County Agricultural Society was held on the grounds, near New Harmony, September 14 to 17, inclusive, 1886. The attendance was hardly up to the average of other years, only about 10,000 persons being present on Thursday, the big day of the fair, the intolerable dust borne about by the wind making traveling disagreeable, causing many to stay at home. All games of chance and every species of gambling, as also beer and spirituous or malt liquors, were rigidly excluded from the grounds, consequently the receipts of privileges (coming under the head of ground rents) fell somewhat short of former years. The time of our fair coming on the same week as that of two other neighboring societies the attendance was somewhat diminished, and the total receipts failed by some $250 to equal the expenses.

The exhibition was fully up to the standard, and some departments were in excess of previous years. The farm products were well represented. As there were a number of farmers who had harvested over 30 bushels of wheat to the acre (one of 38 bushels), the display in that department was excellent.

The dry season had cut the corn crop a little short, but it would hardly be noticed by the samples brought to the fair. Among the staple products we had a pumpkin which knocked the beam at 164 pounds.

Col. Beaumont, of Illinois, vied with our own citizens for the ribbons on Shorthorns, of which there was an excellent exhibit.
COUNTY AND DISTRICT REPORTS.

Speed rings claimed a just proportion of the time and premiums to bring together some with creditable records, contesting well for the respective places.

The influence of the Posey County fairs can be seen in our own and neighboring counties. The stock has been very much improved since the first fair, crops have been larger, and a general improvement has been made all along the line. Now there is not anything raised too good to take to the fair, and the county ranks as one of the best agricultural and stock producing counties in the State. We have not developed any mineral resources yet, but in the usual march of advancement there is no telling how soon we may "strike it rich" in that quarter.

Posey County wheat has long held a high name in the milling business, and with some of the best mills in the country situated in the county of Posey flour has a first place in the markets of the land.

Quite an amount of lumber has been shipped from the county during the past year, and the industry seems to be growing and can be still further developed, as there is quite an abundance of all kinds of merchantable lumber to be made from timber still growing in large quantities within our borders.

L. Pelham,
Secretary.

PULASKI COUNTY.

The Pulaski County Agricultural Society held no fair this year. The Board of Directors thought there was a lack of interest manifested by the farming community preceding and during the fair of 1885; for that reason there was no fair held in 1886; but at the annual meeting in November the Board of Directors decided to hold a fair in 1887, but the dates are not settled upon. I believe, nothing serious preventing, that we will have a good fair. There is no good reason why we should not. Our county is improving very fast. The wild lands are being brought under cultivation by the thousand of acres every year. The county is fast filling up with permanent settlers, and all grades of stock are being improved.

Jesse Taylor,
Secretary.

PUTNAM COUNTY.

The year passed without Putnam County having a fair, but the farmers are taking steps to place the Society on a permanent footing by making a joint stock company with a paid-up capital of $5,000, which will insure a fair hereafter.

This county is rapidly taking the lead in cereal growing. This year our farmers were blessed with splendid crops, corn averaging 38 bushels per acre; wheat, 15½ bushels per acre, and oats, 32 bushels per acre, while all were of fine quality. The total yield of wheat was about 46,000 bushels. Ten years ago we did not produce enough for home consumption, now our county gives a fine surplus.

18—Bd. of Agr.
In 1886 the county shipped 45,000 hogs; quality good. The hogs have suffered very little from disease. The cattle crop amounts to 27,864 head.

The idea of pruning orchards is reviving, and the result is (even after hard winters) vigorous trees and a large yield of apples. A few peaches were found on trees that had been well pruned the previous season, and we hope the days of heavy peach crops are not forever gone, as has been the prophecy for the last decade.

During the year past there has been placed under culture 5,000 additional acres of land, 500,000 cubic feet of stone quarried, 200,000 bushels of lime burned, while mines of very fine qualities of block coal have been discovered, which will, in due time, be developed. Our farmers' appreciation of tiling is shown by the 20,000 rods laid during the year. The county now has 182,500 rods.

The grub, cut-worms and corn-lice did much damage to crops. Some of our farmers planted their corn by hand, placing in each hill a pint of lime as they covered the corn. This was found an effective remedy for the grub-worm, and prevented the cut-worm from working under the ground. Some farmers contend that a handful of salt thrown into the ant's nest when breaking the ground will prevent their damaging corn, as it destroys the ants. The ant and louse seem so related that the louse only damages the crop when the ant is there to assist.

W. S. Cox.
Secretary.

RANDOLPH COUNTY.

The Randolph County Agricultural, Horticultural and Mechanical Association, held its sixteenth annual fair on the grounds of the society, near Winchester, commencing September 14th and continuing four days. It was one of the most successful fairs ever held in the county, as far as entries were concerned, and merit of articles on exhibition, but the extreme bad weather cut down the receipts to a much smaller sum than former years.

The agricultural condition of this county continues to improve, and compares favorably with the best counties of the State. Comparatively, no ponds, marshes or swamp lands are undrained, and we therefore have one of the most healthy counties. But very few toll roads are left in the hands of corporations and most of them are consequently free, and, together with the pikes built under the "Free Turnpike System," we have a network of good, substantial roads all over the county, thereby making Winchester, our county seat, one of the best business towns of Eastern Indiana. The city is built up in a good, neat and substantial manner, good streets, sidewalks, sewers, etc.

The yield of corn, wheat, oats, etc., was simply enormous. Also, the fruit crop was better than for many previous years. Farmers, however, in some localities, lost many hogs from cholera.

There is not a shabby or ill-furnished school-house in the county, and the teachers employed are up to the standard.

W. A. Martin.
Secretary.
RIPLEY COUNTY.

The thirteenth annual exhibition of the Ripley County Agricultural Association was held at Osgood, August 17 to 20, and, notwithstanding the rain the first day, the fair was in every sense a success. The attendance compared very favorably with former years, and all united in saying we had a better exhibit, in all departments, than at any previous fair.

The farmers have been blessed with good crops this year, wheat, oats and potatoes being more than an average yield.

To the large manufacturing interests at Batesville and Spades, there are being added several creameries in the northern part of the county. A creamery is in process of construction at Osgood which is to be mammoth in its proportions, and will embody all the recent improvements in that line.

The stone quarries at Osgood have just closed one of the most successful seasons in their history.

The increasing interest of the farmers in the better grades of stock, in the use of commercial fertilizers and in the tiling of their land, augurs well for the county in the future.

E. D. Freeman,
Secretary.

RUSH COUNTY.

This society closed the thirtieth year of its existence with success inscribed upon its banner, and although the week of the annual exhibition was visited with very unpriopitious weather, the fair was a complete success, having had large crowds, paid more premiums, had more entries than ever before, and the character of the exhibits in all departments was superior to anything ever before seen here.

The society is entirely out of debt and has a small balance in the treasury.

The wheat crop in Rush County was good, but the price was low.

There was an immense crop of corn, of good quality, but on account of the ravages of hog cholera, perhaps more farmers have marketed their corn this year than ever before in the history of the county, and yet thousands of bushels remain in the pens and barns.

Cattle are plentiful, but prices range unusually low, both for beef and milk stock.

Good horses are, as usual, wanted, but the supply is not equal to the demand, for first-class stock. Recent importations of fine bred horses into the county, at high prices, is a guarantee that Rush County will maintain her reputation already established in that line.

Sheep raising is not a great industry in this county, yet we have a few men who make a success of it.

The hay and oat crops were good, and upon the whole the farmers of Rush County have no cause for complaint, and with the promised good times for 1887, are likely to obtain their share of the blessings.

F. B. Pugh,
Secretary.
BOARD OF AGRICULTURE.

SHELBY COUNTY.

Former reports of our agricultural association have mentioned the great improvement in public highways, improved agriculture, and consequent prosperity of our agricultural people.

The report from this society, by some inadvertance, was omitted from the agricultural report for 1885. The fair of that year was financially successful; the receipts exceeded the expenditures many hundred dollars. The fair of the present year was the twelfth annual under the present management, and was, in the opinion of our people, a great success for a county fair.

The ground is capacious, well and conveniently located, ample shade, good water, fairly improved and carefully kept in good repair for exhibitions. The association has, from the beginning, been very prosperous, holding a fair every year without an exception, the receipts always exceeding the disbursements, all premiums and other expenses promptly and fully paid, with now a surplus fund of $3,000, mostly loaned on real estate security. The association is using its best effort to encourage an emulation among our people in the most modern and approved methods of farming and stock raising, and the annual improvement in that respect is very perceptible. Both the management and the people are ambitious to excel, consequently annual additions and conveniences are added to make, if possible, the last fair the best.

Our agricultural people are generally engaged in a mixed husbandry, but by far too many of them are making the growing of corn and wheat too much of a specialty. A recently organized and active stock-breeder's association in the county will begin to correct that evil.

This society means progress, and with the aid of an industrious, sober, intelligent, reading people, it hopes, in the future, as in the past, to stand at the head of the list of prosperous agricultural societies in the State.

O. J. Glessner,
President.

SPENCER COUNTY.

The Spencer County Agricultural Society was organized August 7, 1886, a joint stock company, with a limit of two hundred shares of twenty-five dollars each. We leased thirty acres immediately west of the town of Chrisney for a term of twenty years, inclosed it with a good fence, and erected the following buildings: A floral hall, an amphitheater, a poultry house, sheep and hog pens, dressing hall, race track, 130 stalls for stock, four wells, a dining hall, music stand and Secretary's office, at a total cost of four thousand dollars. With the present number of stockholders, the society is somewhat in debt for improvements (about five hundred dollars), but as shares are being taken every day, we intend to have the two hundred shares taken soon, which will clear us of debt and give some money for improvement.
The association leased (with the privilege of buying), thirty acres on the rail-
trail near Chirnney, which is a very central location and seemingly adapted by na-
ture for a county fair ground—plenty of good water and a splendid view of the en-
tire track and building.

The track is one-half mile in length and is pronounced by horse men to be
one of the finest in Indiana.

Our buildings are of the latest and most improved style, substantially built,
well finished and present a tasty appearance.

Our liberal premium list of $2,600 attracted the attention of all fair goers,
and having fine weather large crowds attended, which swelled our entrance fees
sufficient to pay all premiums.

The fair has produced quite an interest throughout the county, and active men
are giving much encouragement to the enterprise, and recognize the fact that we
need to be more careful in stock raising; that fewer stock but better quality is best.
There is also a spirit to farm closer and secure better results on agricultural
products.

S. D. Groves,
*Secretary.*

STEUBEN COUNTY.

The Steuben County Agricultural Association held its annual fair at the
grounds at Angola, commencing the 11th day of October and ending the 16th.

On Wednesday, the school day, all school and college officers, teachers and
pupils of Steuben County were admitted free. As a factor in the education of the
coming men and women destined for the farm and machine shop, we believe it
will prove a marked success.

Our County Superintendent kindly volunteered his services on the occasion to
take charge of the exhibits, which were assigned a large space in Floral Hall, which
was nicely filled with a great variety of letters, on which premiums were
offered, on various subjects—copy books, scrap books, with maps of the county,
State and United States, and a variety of other school work, that space will not
permit to enumerate.

The Association is enjoying the proud distinction of being free from debt.
Having this year completed a new Floral Hall, a neat and tasty Dining Hall, and
several other new buildings and stables, at an expense of about $2,000. There
remains in the treasury between three and four hundred dollars.

The weather during the fair was reasonably good, except Thursday, when we
usually have the largest attendance. The warring elements of wind and rain closed
up the attractions of the day.

The exhibit of horses was creditable to the breeders of the various kinds of
stock, among which are the Clydesdale, Percheron, Norman, English Draft, and
Cleveland Bays. Each have their merits for the work they are designed to per-
form. Over one hundred stables were occupied by horses alone.

The Cattle Department was fully up to the creditable standard heretofore at-
tained, with additions of the Herefords and Holsteins, though the Shorthorns still hold the front rank, either from a prejudice long acquaintance has given them, or the want of familiarity with the new breeds.

The county of Steuben, though small in area, leads all the counties in the State in the sheep industry. In 1883 her sheep numbered near 45,000, with a product of wool reaching the enormous amount of 190,000 pounds, while at the same time sheep breeding is only a small portion of our mixed course of farming. We have the pure blood Merinos, Leicestershire, Cotswold, and a high class of grades, which were all exhibited at the fair, some of the mutton varieties reaching 250 pounds each. Our breeders find this industry assailed by a miserable dog law, designed, doubtless for their protection, but which in practice denies us the right to protect our flocks. The wool tariff, as it stood in 1887, gave a reasonable compensation to the flockmaster for his labor. That was stricken down by the demand for free trade. This is a calling which requires less capital than any other of the animal industries, and is in good part the vocation of the industrious poor.

Machinery Hall was the center of attraction, reapers, mowers and binders, plows, harrows, wagons, buggies, gates, wind and traction engines, and a thousand other devices for labor saving, rendering this part of the fair a great success.

Agricultural Hall, some sixty feet in length, had one side covered with apples, pears and grapes, whose luscious appearance led the beholder to forgive the temptation of the first mother and to believe that her husband sinned in the right direction. The central portion of the hall groaned under the burden of wheat, corn, oats, seeds, flour, potatoes, turnips, cabbage, pumpkins and squashes, some of the last named weighing 160 pounds, while the other side of the hall was filled with canned fruits, preserves, pickles, bread, butter, jellies, and that vast variety of useful things that women alone know how to prepare.

Tile drainage continues to engage the attention of our most intelligent farmers. The demand attending its use is such that in the county there are three successful yards besides what is shipped from a distance. Our yards afford an abundance of material from which the best tile is manufactured.

The timber question is becoming one of serious import to the farmer, many of whom continue to sell their best oak, ash and hickory, tempted by the high prices offered by buyers.

With our mixed methods of farming, fences are an indispensable necessity, and the plank or board fence is resorted to as the timber becomes scarce and expensive.

Road making and repairing is undergoing rapid changes. The old method of plowing them is supplemented by thorough drainage and the use of gravel.

Fish culture and the wonderful adaptation of the county to this food supply, as shown by the map of Steuben County, published in these reports in 1884, is being utilized.

On application of citizens during the year some three car-loads of small fry, principally lake trout and California trout, have been planted in the lakes and streams of the county, and, so far as can be judged, with complete success.

Francis McCartney,
Secretary.
ST. JOSEPH COUNTY.

The Fifth Annual Fair of the Northern Indiana and Southern Michigan Agricultural Society was held on their grounds adjoining the cities of South Bend and Mishawaka, September 20 to 24, 1886, inclusive. The entries in all departments were largely in excess of former fairs. Attendance large and unusual interest manifested, but owing to unfavorable weather our receipts were not as large as those of 1885. Our grounds are finely located, with street railway on the south and Grand Trunk Railroad on the north, making them easy of access. Our buildings are all substantial structures. These, together with our fine grove and track, make it one of the most attractive fair grounds in the State. Our people, together with those of Southern Michigan, have shown much interest in the annual exhibitions, and we already find our grounds, which consist of forty acres, too small. Being in the Middle States Fair Circuit is a great advantage to us, as our show of stock and machinery will compare favorably with adjoining State fairs. The condition of agriculture is not up to the average. Wheat and corn on clay soils were good, but on openings and prairie were injured by the fly and drouth; other crops fair.

C. G. Towle,
Secretary.

SULLIVAN COUNTY.

The Sullivan County Agricultural Society held its annual fair September 6 to 11, inclusive.

The drouth, scarcity of water and unbearable dust materially interfered with its pleasures and usefulness, and also decreased the receipts of the fair. Notwithstanding all drawbacks, we had a very good fair. The exhibits were good and creditable in all of the departments; in some, exceptionally good. In the Horse Department there were 186 entries, a number of them imported stallions and their offspring, while the remainder were of a class creditable to the owners and the county. It was a general remark that a better show of horses is seldom put on exhibition at any county fair. The Cattle, Hog and Sheep Departments were very creditable, and in number exceeded the previous year.

The other departments were fairly represented. Special mention should be made of the Ladies' Department. Their exhibits surpassed any previous fair, and were highly commended by persons of taste and culture. The receipts more than paid the premiums and expenses of the fair, and that, too, without giving permits or allowing intoxicants or any species of gambling upon the grounds. The show of grains, vegetables and fruits was not as large as was expected, but the specimens were fine and attracted much attention.

Over $1,000 in improvements was made upon the grounds in the way of sheds, stalls and a building for the Ladies' Department. The officers of the Society feel safe in saying now that exhibitors and visitors can not be better accommodated.
anywhere, considering the date of the organization. Our fairs are having a telling effect upon farmers, stock-raisers and producers generally. A better understanding of the methods adopted in producing better results is having a good effect upon quality and quantity. A number of our farmers are tiling their lands and greatly increasing the productive capacity of the county. Hog cholera in neighborhoods has, to some extent, reduced the number of marketable hogs, both the disease and fear of it deterring many good farmers from stocking up. The wheat yield in parts of the county was good and the quality first-class; in other localities a failure. The hay crop, the greatest ever cut in the county. Owing to the price, $5.00 and $6.00 per ton, many will plow up their meadows this coming spring. The fall sowing of wheat at this writing, December 27, is anything but flattering; still, a fair crop may be harvested. The yield and quality of corn was good this year. Farmers are paying more attention to the raising of clover-seed, which nets them a handsome profit and puts their lands in a higher state of cultivation.

U. COULSON,
Secretary.

TIPTON COUNTY.

The eighth annual exhibition of the Tipton County Fair was held on the grounds near Tipton, beginning September 20 and continuing five days.

On the 12th of May a terrible cyclone passed over our grounds, destroying everything except five or six horse stalls and a few trees. The lumber in the old buildings was almost worthless, but the company were equal to the emergency, called a meeting and decided to commence rebuilding without delay, and to make more substantial improvements. The halls, amphitheater, fences, stalls, pens, including a small dwelling for the occupation of an overseer to look after the grounds between fairs, were all fully completed by the date of fair. The company negotiated a loan to meet this unexpected expense. The company has provided for future shade on its grounds, by having six hundred trees planted, and we expect to have one of the finest grounds in this part of the State.

The exhibition was fully up to the standard we have heretofore attained. While there were not quite so many entries, we believe it is accounted for by the rumor that gained circulation that we would hold no fair this year, which, no doubt, cut down our gate receipts a little below last year. The departments were all well filled except the mechanical department. The imported horse show was unusually fine, the judges having great trouble in awarding the premiums. The cattle show, we think, deserves special notice, the Shorthorns leading, as we have a number of very fine herds in the county.

The farmers are taking grand strides forward in the development and improvement of both stock and lands.

The crops of the county for the year were good, being above the average, wheat especially good.
Free gravel roads are being constructed in our county as fast as the law will permit, there being a number of petitions on file for new roads. Drainage has progressed at such a rapid rate that there is now scarcely a waste acre of land in our county.

E. B. Martindale,
Secretary.

VERMILLION COUNTY.

The Vermillion County Fair Association was organized in August, 1886. The Board of Directors met and adopted by-laws, appointed committees, and decided to hold the first fair on the new grounds during the week commencing September 26. This gave but four weeks' time in which to clear ground, fence, make track, buildings, etc. The work was entered upon with vigor, and by the energy of every one, at the time appointed we were ready. The grove had been trimmed and cleaned up, track made, fence built, floral hall, mechanics' hall, amphitheater, offices, and stalls for stock put up. The half-mile track is as good as any in the State.

The weather at the beginning of the fair was very rainy, and during the fair very cool. On account of the cold weather and the high stage of the Wabash River many persons were kept from attending. This diminished the gate receipts considerably. Otherwise the fair was a grand success.

The show of stock in all departments was good. The premium list was a liberal one and attracted a large exhibit from abroad.

Great satisfaction was expressed, universally, with the treatment and accommodations received. Financially the result was good. All premiums were paid in full. Gambling and sale of intoxicants were prohibited.

Agriculture in our county is in a prosperous condition.
Wheat was an average crop and of fine quality.
Corn, owing to drought, was short of the crop of 1886, in number of bushels, but was of superior quality.

The county has many miles of gravel roads, and more are being added. Gravel in abundance, and easy of access, facilitates the building of these roads.

Our county has inexhaustible quantities of fine sand stone for building purposes.

Four railroads in the county.
Coal of good quality is mined at various points in the county.

J. S. Grondyke,
Secretary.

VIGO COUNTY.

The Board of Directors which assumed charge of the affairs of the Vigo Agricultural Society for 1886 endeavored, with much zeal and industry, to make the exhibition the finest in the history of the society. In all respects, as far as the
Board's efforts were concerned, the fair was most successful, but in other respects, beyond its control, the results were disappointing. The exhibition was all that was hoped for, but the pecuniary results were not. Much money was spent upon the grounds, new stalls and barns were built, premiums were increased, the fair was liberally advertised, and the number and quality of exhibits showed considerable advance over previous years, but heavy rains and the nearest approach to a cyclone known to this county in many years, swept away the profits and reduced receipts several thousand dollars below the amount expected. The last agricultural show may be summarized as follows: The exhibition of horses was very large and fine, including a splendid show of thoroughbred stock, of which much the largest proportion belonged to Vigo County. The display of cattle was also large and choice, including nine herds of Shorthorn, Hereford and Jersey cattle. The display of agricultural products, although a fair average, would not advertise Vigo as a great farming county, and suggested the necessity of renewed efforts to develop this branch of the county fair. The collection of articles of woman's work, representing art and utility, was very extensive and meritorious. Agricultural implements and machinery were but fairly represented, as might be expected in a region whose agricultural interests were depressed by several years' partial failure. The number of specimens of fruit and flowers on display would indicate that little fruit and few flowers are grown in Vigo County. Naturally where the most money was spent, the show was best. Cattle and horses secure the great prizes, and doubtless offer to our people the surest means of securing regular and increasing profits. The payment of large premiums and the great array of blooded stock are the indices of the growing interest in stock and the awakening of the country to the fact that the vast new fields, devoted to wheat, compel Eastern and Middle State farmers to diversify or change their interests and industries. No premiums offered for wheat and corn can add as much to the yield of an acre of land as the premiums which encourage raising the standard stock, which bring together the finest horses and cattle to educate and excite the emulation of visitors.

The exclusion of liquors and gambling devices from the grounds was a loss of revenue and an increase of comfort and good order; the customary wrangling of horse trainers was conspicuous by its absence. On the other hand, the result was an actual deficit of $59.60 on the year's business, and the debt carried for several years, and increased by extensive improvements, still unprovided for; but there were, to offset these, several hundred new stalls, good buildings, two race-tracks, etc. (altogether about $10,000 in new improvements and repairs), no unpaid premiums and no pressing creditors, and a general indorsement of the management, which has been shown by a desire on the part of the public to further improve our resources by adding a new hall this year, large enough to receive every article which must go under cover, to cost from $4,000 to $5,000. The increased number of exhibits and exhibitors was a mark of the improved state of affairs in Vigo County since 1885.

The acreage of wheat may have been a third of the average, but the yield was so much better than the year before as to make half an average crop; oats was a full crop and corn a large and profitable though not a full yield.
The vicinity of Terre Haute is an appropriate and profitable field for market gardening; the shipments from this point increase from year to year, and might show many how a few highly-cultivated acres can be made to pay better than the failing wheat fields.

There has been a steady development in the quality and amount of fine stock. In and around Terre Haute are many horses of great value; one stallion at the last fair was rated at $10,000. The extent of the thoroughbred young stock is a promise of famous displays at our coming exhibitions. There has been a marked increase in the number of thoroughbred cattle in Vigo County; there are many herds of Shorthorn and Jersey cattle, the Holstein-Friesian have been introduced, and single, or a few, specimens of high-bred cattle added to many a farm point to the gradual but certain increase in this direction. The county has been very free from all diseases of stock, and now that our farms show improved resources in stock, a great increase in tiling and a greater diversity of products, it is not too much to promise that Vigo County will make gratifying returns for the present year in every branch of agricultural interests.

It may be well to refer to one cause for the Vigo County Fair’s diminished receipts, outside of the stormy weather, which was a circus, dividing the attention of the public with the fair. It has been suggested to the delegates at the January meeting, that some action be taken, and legislative measures be inaugurated to protect agricultural societies from the wandering circus, or, at least, by a heavy license, secure some of the large sum of money usually taken from the counties by the average circus. If nothing shall have been done by the Legislature of 1887, united effort by the agricultural societies can secure at a later date the desired relief.

It may also be well to mention the failure of one experiment by the Vigo Society, which was the cutting off of some second premiums while increasing the first. The result proved that many exhibitors want the second premium, scarcely hoping for a first, and that a second is a great satisfaction when the first is out of reach, and that more exhibitors will show for a medium first and second than for one larger prize.

C. C. Oakley,
Secretary.

WABASH COUNTY.

The Wabash County Agricultural Society held its Thirty-fourth Annual Fair on its grounds in the city of Wabash, from September 14 to 18, the same as last year. The weather was very unfavorable, so much so that we had to continue over Saturday, but, notwithstanding the weather, we had a good fair. Our receipts enabled us to pay all premiums in full, a loan of $350, and left us a balance of about $300 in the treasury. The display in all departments was good. There was a slight falling off in one or two, owing to our Board cutting on some premiums at their last meeting.

Horses have always been foremost at our fairs, and this year was no exception to the rule. The show of horses and colts was excellent in all classes.
Our show of Jersey, Holstein and even graded cattle was unusually large, but our Shorthorn show was lighter than for some years past, but for excellence of animals shown could hardly be beaten.

The entries in sheep and poultry were the largest for years.

The hog show was not up to former years.

The Mechanical and Agricultural halls were well filled.

In the Ladies' Department the entries were not as large as at some of our former fairs, but what was lacking in numbers was more than made up in the superiority of the articles exhibited.

As I mentioned in my last report, the condition of agriculture in this county will compare favorably with any county in the State.

We have several large company ditches, and under the late law quite a number are under headway. Tile ditches are continually being put in, and hundreds of acres of land have been in this way placed under cultivation, producing some of our best crops.

Wabash was one of the first counties in the State to take advantage of the free pike law, and today we have six free pikes centering in the city of Wabash, radiating to all points of our county.

Of gravel and stone we have an abundance.

Wheat was about two-thirds of a crop and of good quality.

The corn crop was very good, except where the hail storms in the early part of the fall damaged it.

The crop of hay was good.

Our farmers have lost a great number of hogs the past year by the cholera, about 60 per cent. dying, but the disease is almost stamped out now, being confined to the section of the county south of the Wabash River.

Fred J. Snavely,
Secretary.

WARRENT COUNTY.

Our fair, held at West Lebanon August 31 to September 4, was a financial success, but not up to that of last year in the exhibition of live stock. Horses were well represented, but cattle, swine and sheep were somewhat neglected. Poultry and agricultural displays were above the average. Floral Hall never fails, but is filled to overflowing every year.

Our rents are much less since ruling out games of chance. However, we think the gate receipts larger on this account, and all will readily admit the moral tone and influence of the Society amply repays for the small financial loss.

The greatest drawback to county fairs at present is their number. Vermillion County, Illinois, joining us on the west, has three fairs, and the county having the same name joining on the south has two fairs. Add Covington and West Lebanon and we have a total of seven fairs in four adjoining counties. Now, the question is, would it not be better to consolidate two or more counties in one fair than
to have two or more fairs in one county. If our fairs were fewer in number they
could afford to pay larger premiums and offer inducements that would bring ex-
hibitors from a greater distance, assuring an exhibition of stock that could not fail
to bring the people, insuring better gate receipts, better feeling and more prosper-
ous fairs.

The crops in Warren County for the year 1886 were uniformly good. The
flood in May held corn planting in check about ten days, which lessened the crop
about 20 per cent. in quantity, but the quality is first class.

The wheat crop is first class in every respect, making an average of 21 bushels.
The ground was in a fine condition for seeding last fall, and the growing
crop went into winter quarters in excellent condition. Oats an average yield,
acreage large. The hay crop was below the average, caused by dry weather in
June following the May flood, causing the ground to bake.

Pastures, with the exception of a brief period in midsummer, have been good,
and consequently stock of all kinds was in fine condition for wintering. Horses
and cattle are entirely free from disease, but there exists about the usual amount
of hog cholera.

Warren County is getting quite an extensive system of gravel roads, which is
a great improvement over the old way. The main thoroughfares are graded
under the law for free gravel roads, but our Trustees are making quite a good
showing with the annual road tax.

Geo. T. Bell,
Secretary.

WARRICK COUNTY.

The twenty-eighth annual fair of the Warrick County Agricultural Associa-
tion closed August 28, 1886, and was the first financial success for several years.
Being organized on the old-fashioned plan, with no stockholders, we have no divi-
dends to pay, and consequently are satisfied with a small reserve fund to carry us
through an unsuccessful year. A stock company could certainly be managed with
less expense than our present organization, and we are now taking subscriptions of
stock for a new association.

While the amount of premiums paid slightly exceeded that of last year, the
number of entries made showed a decrease of nearly seven hundred. The principal
falling off in entries was in farm products and the Ladies' Department, and is
attributed to the early date of holding the fair, the strong competition of the pre-
vious year, and the insecure condition of the halls, which ought to be replaced with
new ones.

The show of live stock consisted of 377 entries—240 horses, jacks and mules,
43 head of Durham and Jersey cattle, and a fine lot of thoroughbred Leicester,
Southdown, Cotswold and Merino sheep; Berkshire, Poland China and Chester
White hogs. Altogether it was an unusually fine collection, and called forth many
complimentary remarks from our visitors.
Our home folks complain of the professional exhibitors who make the circuit of fairs with "world beaters" in the live stock classes. We think such complaints are unjust. When we open a ring for competition we want the very best exhibit that our premiums will attract regardless of the exhibitor's place of residence. We charge an entry fee, and think it preferable to a free entry, as it excludes many exhibits of an inferior character, reduces the committee work, brings out meritorious entries only, and adds upward of $500 to our treasury receipts.

While some counties are better for wheat and corn, Warrick County makes a good average throughout the whole list of food products, and is not dependent on the success of one or two classes of produce. Wheat, corn, oats, hay, potatoes, clover seed and tobacco are the principal crops raised for shipment. The sales of live stock are considerable, but are not as large as they should be.

The production of tobacco, of which we raise several million pounds annually, is a drawback to our county, inasmuch as it requires the best soil, takes from nine to twelve months to put it on the market, and at the present low prices pays the producer but $20 to $40 per acre. Taking into consideration the exhausting effect it has on the land, and the six months of hard, close work necessary to its production, we do not consider it a paying crop in the long run.

Blue grass, red top, timothy and clover yield good returns, and are profitably grown in connection with stock raising.

More thoroughbred stock breeders is one of our needs. Our farmers are quick to avail themselves of improved labor-saving machinery, but too many are indifferent as to the improvement of their stock.

Our county is undergoing an extensive system of drainage, which will open up large tracts of land heretofore considered valuable only for the fine growth of timber thereon. Saw milling and tie making are profitable industries that are fast clearing off the timber and opening up these lands for cultivation, and when properly tilled these lands are destined to be the most valuable for the stock raiser and general farmer. At present their worth is hardly appreciated.

Wm. L. Barker.
Secretary.

WAYNE COUNTY.

There has been an excellent degree of interest the past year in the work of our society. Meetings have been held regularly on the second Saturday of each month, with a good attendance.

The paid-up membership for the year was seventy-four, though there was always an attendance of a large number of those who were not members. All the meetings were held by invitation of members, at their residences, thus relieving the society of any expense for hall rent. We have found that this plan of holding the meetings contributes to the social enjoyment of the occasion, and adds an element that needs to be cultivated by our people.

Following are reports on the different divisions of our work:
I. AGRICULTURE.—There has been more interest in this department than has been manifest for some years past. This has shown itself on the part of our farmers, in the pains they have taken to secure the best seed of the best varieties, especially of wheat, corn and oats. Earliness and productiveness have been the features sought.

The wheat crop was of excellent quality, and was harvested in good condition, but the market has been so depressed that our farmers have sown it rather more sparingly than in the past. Thus far the prospect for the coming crop has been fair, though some fields have shown yellow blades, which are thought to indicate the presence of the fly.

The yield of corn has been fully an average, and nearly all was well matured and gathered in good condition, except fields that were in exposed situations, where the corn was badly blown down, and thus somewhat damaged. In addition to this there was a hail storm passing through the county, doing considerable damage in a strip several hundred yards wide. The weather during the fall was very favorable for gathering and storing corn, and our farmers judiciously improved the opportunity.

The oat crop was very heavy, but the weather being somewhat unfavorable during harvest, some of it was damaged.

The hay crop was excellent, but the heavy rains in the clover harvest caused much damage.

Potatoes were of good quality and yielded a fair crop.

All kinds of stock have done well the past year. While in neighboring counties heavy losses have been sustained from hog cholera, we have been almost entirely free from its ravages.

II. HORTICULTURE.—Apples bloomed nicely, but a chilling, dashing rain from the northeast beat the pollen to the ground. Enough remained, however, for the good of the trees and the crop. The wet weather in June and July caused some of the early fruit to scab. The English haglo maintained its good reputation for resisting unfavorable circumstances. The trees of this variety are sound and thrifty as the early orchards of this country were fifty years ago. The maiden blush never did better, and commanded a good price to the close of its season.

Winter apples matured rather early and dropped badly, while those that remained on the trees till picking time rotted badly, both before and after housing, until quite cold weather set in. This made the fall market rather uncertain, the price fluctuating from $1.00 to $2.50 per barrel.

Pears yielded not more than half a crop. Many trees have died prematurely. The cherry crop was enormous and the fruit fine.

Raspberries and blackberries yielded heavily excellent fruit of uniform size.

Strawberries were satisfactory in yield, in quality, and in market.

Grapes abundant and matured well.

Considerable interest has been awakened recently on the subject of plums, and many of our members are putting out trees. The Robinson seems to be most highly recommended.
III. Fairs.—This year we have somewhat modified our plan of holding fairs. Three have been held, the first two being devoted chiefly to agricultural and horticultural products, and the third to culinary. The first was held in September. The weather was fine the attendance was good, the number of entries large, and the exhibits such as would do credit to any county. The second was held in October. In addition to the exhibits of agricultural and horticultural products, there was an exhibit of bread. This was in response to an offer of three hundred pounds of flour as premiums, made by the Champion Roller Milling Company, of Richmond. The bread became the property of the company, and was donated to the Orphans' Home, located in West Richmond. The third, or the “butter fair,” was held in November, at which time there was exhibited a number of specimens seldom, if ever, excelled in fineness of texture or flavor.

Our entries are all made by number, no names accompanying the exhibits, and premiums are awarded by committees.

It is proper to state that at all of the fairs many articles have been placed on exhibition which were not entered for premiums. Many of these have been such as to add much to the interest and value of the occasion.

We have been able to pay all premiums in full. We are out of debt, have money in the treasury, and are in a prosperous condition.

MRS. CYRUS W. HODGIN,
Secretary.

ARCADIA DISTRICT.

Our first annual fair was held at Arcadia, Hamilton County, September 13 to 17, inclusive.

This Society was organized on Saturday, October 3, 1885, with $2,500 capital stock and over 200 stockholders.

Owing to the lively interest which the citizens took in the matter, we leased about twenty-five acres of land for a term of ten years, for the sum of $150 per year.

The Association has since sunk three wells, which furnish an abundance of good water; has built two halls—Mechanical, Agricultural and Floral—one hundred and forty horse stalls, forty cattle stalls and fifty hog and sheep pens; also, a new amphitheater. A beautiful grove, covering about fifteen acres, affords ample shade without obstructing the view, and one of the finest tracks in northern Indiana. In fact, we have every convenience that an agricultural society organized and sustained by a wide-awake and progressive people would be expected to have.

The competition and show in the Stock Department was very attractive and spirited.

The ladies contributed their full share to the exhibition, and for the interest and skill manifested in the decoration of Floral Hall, too much can not be said in their praise.
COUNTY AND DISTRICT REPORTS.

The Directors, since the fair, have borrowed money and paid our entire indebtedness. Hence, I feel authorized in making the statement that, financially, our exhibition was a success. The expense in fitting up the ground was so heavy that it was not expected by the officers or Directors that the Society would come out whole.

A remarkable feature of the fair was the absence of improper characters and gamblers, whose occupation has been to fleece the unwary and tempt the innocent and unsuspecting. This class of sharpers were refused admission, and we had the pleasure of conducting the fair in such a manner as gave entire satisfaction to every person in attendance. Our Board of Directors firmly set their faces against all gambling or sale of intoxicating drinks upon the fair grounds, and the result is that all the best citizens gave the fair their hearty support.

Next year we propose to add many inducements to the list of premiums. We will avail ourselves of every possible means not only to make the next fair a success, but to make the exhibition in every department, both in number and quality, eclipse the fair of 1886.

Our farmers and mechanics are, as a class, progressive. They are fully up to the standard of the times.

Arcadia has made vast improvements in the last ten years. We have two neat and commodious churches and one large brick school-house that will accommodate at least four hundred children. We have every reason to be proud of our county and her citizens.

Our soil, for fertility and general productiveness, can not be excelled. Our system of farming is not as thorough as it should be in many respects, but there is an active interest and a spirit of improvement in this regard. There should be more grass and better stock, fewer acres of corn, deeper tillage and more thorough drainage. The latter is receiving special attention, and no enterprise of our citizens promises such advantages and important results to the agricultural wealth of our county.

J. T. DRIVER, Secretary.

ACTON DISTRICT.

Our Society held its fourth annual fair August 30 to September 3, inclusive. This year, the first time for four years, we had very nice weather, and, as a result, all departments were filled, some to overflowing.

We had a finer show of horses than ever before, which is saying a great deal, as last year we had a show seldom equalled at a District Fair. The stalls were full and we rented some outside the grounds.

Of cattle we had a fine display of Shorthorns, Holsteins and Jerseys.

In the sheep pens we had quite a number of Leicesters, Cotswolds, Oxfordshire and grades of fine quality.

Of hogs we had fine animals of the Poland China, Chester and Suffolk breeds from very noted breeders.

19—Bd. of Agr.
The space for poultry was enlarged but all was taken up with fine fowls. Light Brahmas, Buff, White and Black Cochins, Plymouth Rocks, Langshan, Dorking, Leghorn, Spanish, Hamburg, Wyandottes, two varieties of bantams, two of turkeys, geese and ducks were exhibited.

Farm and garden products were shown in abundance, exceeding any show we have ever had in this line.

Of potatoes there were forty-eight varieties shown, some as fine as can be raised in any locality.

Wheat and corn, the staples of this locality, were shown in such quantities as to astonish visitors, and being of such good quality that the awarding committees were sometimes puzzled to say just where the ribbons should be tied.

The horticultural and floral departments were well filled with fine fruit and beautiful flowers.

In Fine-Art Hall we had first-class work from leading artists.

The woman's department was filled with fine needlework, canned fruits, jellies, preserves, pickles, bread, cakes, etc.

Of farm implements and machinery we had a fine display. There were farm wagons, sporting wagons and buggies; binders, mowers, plows, cultivators, feed-cutters, fence machines, etc.

The wheat crop was good, being harvested and garnered in good condition.

Corn was above an average. It was blown down badly but cribbed early and saved in fine condition.

This was formerly mostly fed to hogs, but owing to the ravages of hog cholera the greater portion was marketed at a fair price.

Hay was a very large crop, but farmers are not getting as much for it as they expected.

Timothy and red clover are the principal grasses grown. Both are used for hay and grazing. Of the latter, seed is raised, of which there was more than usual this year.

The good the fairs are doing is apparent to any observer, there being a desire to have improved stock and seeds, and that of the best strains.

As a whole our fair was a success, although the receipts were not as much as expected. With proper management they will no doubt grow better.

W. C. Hutchinson,
Secretary.

Bridgeton Union.

Our society, composed of the counties of Parke, Putnam, Clay and Vigo, held its twenty-fifth annual fair at Bridgeton, Parke County, from August 23 to 28, 1886. The show in all of the departments was good. The stalls and pens were all full, and the society expended two hundred and fifty dollars to build new stalls and pens to accommodate the stock on exhibition.
The different classes of horses were all fully represented with the best in the county.

There was a very creditable display of Shorthorn cattle shown by the farmers of the district, and one herd of Galloways, something new in the western part of the State.

The sheep exhibit was good and of fine quality.

The hog show was as fine as we ever had on the grounds—Poland Chinas, Berkshires and Chester Whites.

The poultry show was the best we have had for years, and the agricultural and mechanical departments were well represented.

Agricultural and Vegetable Hall was filled to its utmost capacity with as fine specimens as you would see at any fair.

The women's work was well represented, with all the various articles appertaining to the department, all of superior merit.

The agricultural, mechanical and mining interests of the district are in good shape.

There is quite a marked improvement in every branch of farming in the last few years, in the way of introducing improved breeds of stock of all kinds, and the introduction of all the improved varieties of seed.

The tilling of our wet lands is receiving considerable attention, there being several new factories started in the bounds of the district.

The fence question is one of considerable importance, as our timber supply is being consumed very rapidly for railroad ties, staves, and various purposes.

Our crops were an average as to corn, wheat and oats; timothy, one-fourth to a third short; clover, good; potatoes, early, a full crop, late ones about a half crop.

The mining interest is in better shape than since the panic of '73, more money being paid out per month than for fourteen years.

D. Seybold,
Secretary.

EASTERN INDIANA.

The fourth annual fair of the Eastern Indiana Agricultural Association was held on the society's grounds at Kendallville, Ind., commencing Monday, October 4, and closing Friday, October 8. The weather was all the most exacting could desire, pleasant and delightful. The success attained by this young organization at the three former fairs was more than sustained at this meeting. The exhibition was larger, grander, and more satisfactory than on any former occasion. Several days before the fair it became apparent, by entries made by mail, that the stabling would be insufficient to accommodate the stock, and the management ordered the erection of many more stalls, which only partially met the demands, as many cattle were obliged to stand out unprotected.

In the horse department the entries were very large, and the class or quality of the stock was exceedingly fine. The imported thoroughbred stallions of the
BOARD OF AGRICULTURE.

Clydesdale, Norman, Cleveland Bay, Englishshire, English Coach, Hambletonian and other classes, were numerous, and attracted the admiration and delight of every lover of the horse.

In the cattle department the show was unusually large, consisting of some of the finest specimens of Shorthorns, Herefords, Holsteins, Jerseys and Devons to be found anywhere. They were examined and admired by nearly every visitor.

The sheep and swine show was splendid, and satisfied everybody interested in this class of stock.

The display in the poultry department was so much larger and better than ever before that it attracted an increased number of visitors, who expressed much pleasure in their observations. It was, by no means, one of the small features of the exhibition.

The large, commodious Floral Hall was full to overflowing with beautiful exhibits, principally the handiwork of ladies. It presented a scene of rare beauty, and visitors were loath to leave it, often returning to feast again upon the brilliant and gorgeous display, arranged as only the artistic skill and ingenuity of practical ladies could devise.

Every conceivable space in the Agricultural Hall was packed with the choice products of the farm. Here, again, the experienced taste and culture of the ladies was freely used, and visitors were unable to decide which hall presented the most attractions or beauty.

In the machinery department, a magnificent building, 48x108 feet, with iron roof, had just been completed, with a line shaft running the entire length, and on either side was farm machinery displayed, in motion, as in the field, consisting of binders, harvesters, mowers, seed drills, etc., in large numbers. Here could be seen an anxious crowd of farmers and others, gazing intently on the animated scene.

In the speed department great interest was taken, and the races which took place each afternoon were genuine trials of speed. In some of the contests there were as many as ten starters, and when concluded the cry of "fixed race" was not heard. In one race seven heats were required to determine the winner. No pool selling was allowed, but thousands of people sat on the natural amphitheater, "the grassy banks," and watched the flyers until near nightfall. It was intensely exciting and full of interest to lovers of speed.

The grand parade of live stock on the track, on Friday forenoon, was a particularly pleasing sight. Competent judges estimate the value of the imported horses in the cavalcade at over $80,000.

The success of the fair on this, as on former occasions, is a matter of pride and congratulation to all, particularly the management, and will serve to stimulate them to renewed and greater exertions in the future, to meet the requirements and pleasure of the justly discriminating public. The success achieved was only attained by the combined efforts of all concerned.

No gambling or intoxicating drinks were allowed on the grounds and no drunkenness was observed.

At the annual meeting of stockholders the old officers were re-elected by acclamation, and much enthusiasm for the future prosperity of the fair prevailed.

J. S. CONLOGUE, Secretary.
EDINBURG UNION.

Our Society held its twenty-seventh annual fair on its fair grounds at Edinburg, commencing on the 21st and closing on the 25th of September, 1886. The fair was what might be called a success under existing circumstances. We were providentially favored with good weather. Our Society have excluded both gambling and intoxicating drinks, and the consequence was we had no trouble of any kind during the entire fair. Our exhibits in every department were very good. Our cattle show was excellent. The beef and dairy breeds were principally represented by the Shorthorns and Jerseys. The Shorthorn herds deserving special notice were those of Mr. Thomas Wilhoit, of Rush County; Messrs. John A. Thompson and Martin Cutsinger, of Johnson County; Messrs. Alex. Pruitt and Jeff Kendal, of Shelby County. These cattle were well bred, individually good, and presented a great contrast to the cattle bred here twenty years ago. Jerseys were owned by Dr. J. Hughes, Pruitt and others near here. Some very excellent specimens of the breed were shown. This exhibit was pronounced a good one by all who witnessed it. Our speed ring was a very tame affair. Our Society saw fit to offer but small purses for these purposes, and the result was this department was a complete failure.

The Horse Department was largely represented by the Percheron and Clydesdale. Mr. Hite Durbin, of Johnson County, with his French imported Percheron, and Mr. Haseleett, of Franklin, with his Shires, and others with Clydes. All things considered, it was unanimously agreed that we had one of the best exhibits of horses ever shown on our grounds.

The hog exhibit was very good, comprising Poland-Chinas, Chester-Whites and Berkshires. The number shown was not as large as we have had, but the quality was very good.

In the Sheep Department we had an excellent show. The strongest competitors in this department were Messrs. Uriah Privet and brother, Greensburg, Ind., and W. D. Irwin, of Danville, Ky. Long and medium wool Cotswolds and Southdowns predominated.

The Agricultural Hall was well filled with the various grains, seeds and vegetables which are raised in this section of the State.

Our Fine Art and Fruit Hall was well filled with exhibits that spoke highly of the intelligence and skill of the exhibitors, especially in the Ladies' Department, and particularly in the display of canned fruits, jellies, butters, cakes, bread, butter, etc. The show was splendid, and our Society is under obligations to the ladies for the great interest they have taken in our fairs.

Agricultural implements were displayed in abundance, and of various makes. Without further particularizing, I will say our fair was a success financially and otherwise, the Society being able to pay its expenses and premiums in full.

This is a district fair association, comprising the counties of Johnson, Bartholomew, Shelby and Brown, and has been in successful operation for twenty-seven years, and, I may say, in all these years it has been a grand success. It is one of the pioneer fair associations of the State. Its management has been of a
high order, sparing neither labor or expense to make it profitable to the agricultural public in tilling the soil, improvement in stock of all kinds, grain, seeds, farming implements and agriculture in all its forms, in general intelligence, enterprise and industry. The great and lasting good that has been accomplished by this Association within its territory is marvelous. Instead of the scrub cattle of twenty-five years ago, we have the noble Shorthorn, Hereford, Holstein and Jersey. The two former, with their crosses and grades, have many times doubled the value and quality of the beef breed; the two latter have done as much for the dairy interests of this part of the State. The draft horse, the general purpose and light harness horse now take the place of the small, unsightly, and (would be now) almost worthless horse of the past. Improvement in hogs, sheep and poultry has been all that the most sanguine could wish.

In tilling the soil we now produce from 20 to 40 bushels of wheat where we formerly produced from 10 to 15 bushels; in corn, oats, potatoes, grass, etc., we have done equally as well. It is now a settled and fixed fact that our soil may be kept in as fertile and productive state as it ever was, and, indeed, improved, by proper fertilizing and by a proper rotation of crops. Many of our farmers here adopt the plan of cutting up their corn, sowing in wheat or timothy in the fall, and in clover in the spring, and in due time turn under a good crop of clover and sow to wheat and then plant in corn and then in wheat, etc., as before mentioned. In this way I have known this year (1886) some instances where they have raised from 30 to 50 bushels of wheat, and as high as 100 bushels of corn, per acre.

I am of the opinion that one of the greatest factors in the improved condition of farming and stock-raising is the taking and reading of our agricultural and live stock journals which are printed by the thousand and spread broadcast over the face of our whole country, and at such reasonable prices that almost every farmer can afford to take one or more. The day is certainly not far distant when our farmers will all take and read the papers and periodicals pertaining to their calling with as much interest as the professional man, merchant or manufacturer looks after his individual profession or business. I do not mean newspaper farming, but by these means we are enabled to get in a nutshell the interchange of ideas, experiments and practical operations in five years that we could not get otherwise in a lifetime. Take the seven to ten millions of farmers of this country who do not make on an average 3 per cent. on their investment and ask yourself why this is the case and what the cause. Is it not a want of more reading, thought, intelligent exchange of ideas and manipulations of brain power, combined with steam and horse power, intelligence in breeding and feeding stock, in plowing, mixing and combining the proper fertilizers with the varied kinds of soil of our farms? This is a subject that demands the attention of the most profound and deep thinkers of our agricultural schools; it is a subject that should be more generally studied, and taught and understood, not only by our chemists and scientific men, but by every farmer in our country. These things would assist in making farming a desirable and paying business. I will venture to say that there is no business pursued by man for a livelihood that requires, in order to be successful, more thought, study and a more thorough scientific education than that of farming in its various departments, but will desist and say that our present crops have
been excellent in this part of the State; all up to, or above an average. Wheat ranges from 15 to 50 bushels per acre, owing to soil, cultivation, etc.; worth 70 cents per bushel. Corn was also excellent in quality and quantity—from 85 to 75 bushels per acre, and in some instances more, and selling at 37 cents. Oats, very good; worth 30 cents. Hay, principally red clover, was a grand success. Many of our farmers are turning their attention to clover and cattle, particularly since our starch-works have been in operation, feeding and fattening many hundreds of fine cattle on clover, clover hay and starch feed.

Our Fair Association is just now passing through an ordeal, partly owing to the large number of stockholders. Some petty jealousies have arisen and are causing no little trouble. My impression is, there will be a new organization in the near future.

Harvey Lewis,
Secretary.

FOUNTAIN, WARREN AND VERMILLION.

Our Agricultural Association held its twenty-seventh annual fair at Covington, Indiana, September 21 to 24, inclusive. The first two days were rainy and disagreeable, but the last two were all that could be desired.

The number of entries in all classes were large, except poultry.

The show of horses was good, the exhibit being up to any former fair.

The show of cattle was larger than at any of our former fairs, there being four large herds of Shorthorns on exhibition besides various other breeds. We had no entries of grade cattle. The show of hogs and sheep was good, coming up to our expectations. The poultry show was light. In farm products, the number of entries was greatly increased. Enormous cabbages, pumpkins, squashes, beets, turnips, wheat, corn, rye and other seeds surprised and pleased everybody.

This was a good season for small fruits and the exhibits were large, the display being commendable and interesting.

The floral hall was filled with fancy handiwork and fine art. The many nice things were highly admired and this department was one of the leading features of the fair.

Agricultural machinery and implements and many kinds of labor-saving inventions were on hand.

Speed premiums were earnestly contested for, taking into consideration the condition of our track, which was bad on account of the rain the first two days.

The fair as a whole, in its exhibits and its attendance—working against rainy days—was a real, substantial success.

During the year there has been considerable improvement made about our grounds. The floral hall has been enlarged to almost double its former capacity.
as well as erecting several new box-stalls, besides a thorough system of repairs being made. The whole is in a neat condition. Our grounds are well shaded by a beautiful grove, and a fine sod of grass beneath.

This section of the country was blessed with a good corn crop this year. Wheat was of a very good quality and above an average yield.

Taken as a whole, this has been a successful year for farmers and agriculturists in general.

R. W. Miles,
Secretary.

KNIGHTSTOWN UNION.

Our association was organized in the year 1852 as a tri-county fair, Henry, Rush and Hancock counties comprising the territory, and its annual sessions have been held each year since the organization was effected. It has always been liberal with its exhibitors and the premium lists have generally been very satisfactory to the patrons. It has paid out in cash premiums since its organization something over one hundred thousand dollars, and the result of this stimulus has been marked in a wonderful degree in the improvements in general farming and in live stock. The common and degenerate herds exhibited in the earlier years have given place to the fine thoroughbreds, and the premium animals from these counties have, in many instances, made national reputations.

Our horses, as draft, general purpose, and roadsters, have records second to no locality in Indiana.

The rich corn and grass lands of Rush County make it especially adapted to stock raising, and it has become a pleasure as well as a profit for her people.

Henry County is a grain-growing county, largely rolling and undulating between two rivers, Blue and Flatrock, which drain her soils nicely. It has usually been considered a good fruit-growing district, in which all kinds have done well. But I am sorry to say our farmers are neglecting their orchards, and seem discouraged by reason of the ravages of the pear blight and insects, destroying the apple as well as trees.

Until within a very few years past our exhibit of fruits and grapes was very fine.

Sheep raising has been found profitable to our people, and there are many valuable flocks to be found throughout the county.

Cattle raising is followed largely, while in late years considerable attention has been given to the breeding and raising of heavy draft horses, both the English and French breeds.

In the bottom lands along the rivers corn is the principal staple; is fed to hogs, and is always a source of profit, where disease has not been prevalent. But this year many herds have been swept away, and this source of income entirely cut off.

Hancock County has more farms and farmers than either of the first-named counties, and the attention given of late to open and under drainage is fast making this a county rich in agricultural resources. Corn and grass lands are abundant,
and stock raising, with general farming, will enable this county to take rank in the front as a home for the farmer.

The railways traversing these counties from east to west afford ample shipping facilities to all our principal markets, both interior and seaboard. The timber lands in this belt of counties invite the summer rains, and with our vigorous soil and energetic people we are prosperous and happy.

The fair this year was a success. All departments were fully represented and a larger and better show of horses was not seen anywhere in Indiana, except on the State fair grounds. The entries in the various classes were in excess of former years, and we are especially glad to note the growing interest manifested by the ladies in the women's department, and especially since it has been placed under their control. The society has leased beautiful grounds upon which they have erected good, substantial buildings, and within easy reach of town and railway, with an abundance of shade and good water, making it a desirable place for their annual reunions. And while it does not get any assistance from county funds, it is nevertheless popular with our people. The fact that it has run for thirty-four years past is an evidence that it is a social necessity, and one of the assured organizations of the State.

J. W. White,
Secretary.

LOOGOOTEE DISTRICT.

Our fair was held September 7 to 11, inclusive, and considering the things we had to contend with, we were quite successful. I allude to a great prejudice that was raked up against us on account of some changes made in regard to rules and regulations; also, in gate fees and entry fees. The influence that was brought to bear against us was all uncalled for and wrong. The facts are that we were more liberal after the changes were made than any fair association in the State.

The number of entries exceeded those of 1885, and, in fact, our exhibition in all departments, in grade and quality as well as number, exceeded any exhibition we ever held. However, there is great improvement to be made, and which the signs of the times indicate will be made.

Our greatest trouble is in getting a number of our best farmers and stock men to become exhibitors as well as patrons in the way of attendance.

We regard our district in quite a prosperous condition, and can see a gradual improvement yearly. Our farmers are taking more agricultural papers and studying their business.

Our crops this year were exceedingly good. The very low price of farm products had a tendency to lessen our prosperity, but this may be all good in the end in the way of an educator in economy. Our people sometimes are so prosperous that they become too extravagant.

There is no reason why our people may not with industry and economy be prosperous, contented and happy.

C. S. Wood,
Secretary.
MIAMI AND FULTON.

This Society held its fourth annual exhibition on its grounds, north of Macy, from October 6 to 9, inclusive. All things considered, our fair was a success. The weather was all that could be desired, and the display in all departments was much better than in former years. This has been a fairly prosperous year for our farmers and not so much complaint of hard times, to be credited principally to the fact that we are becoming more accustomed to low prices for our products, and a greater effort is being made to increase our yields per acre, thus reducing the cost of production. Wheat was a good crop, making an average of about eighteen bushels per acre, of excellent quality. Oats, an average crop. Of rye, very little is raised here. Corn was a light crop, perhaps thirty bushels per acre, of good quality. Potatoes were about an average crop. Of fruit there was a fair crop. Stock wintered well and feed was plenty. Hogs about all sold at from $3.50 to $3.75 per hundred pounds. There has been considerable cholera among hogs in some parts of our district the past season.

Considerable interest is being taken in the improvement of our public highways, and our principal roads are being graveled and put in very good shape, which add no small item to the general appearance of this section of country. That agricultural interests are on the advance in this section is evidenced by the fact that four years ago it took very hard work on the part of the management of this fair to raise funds enough to inclose a three-acre lease and put it in order so we could hold a fair. Since holding our last fair we have sold stock enough to buy twenty acres of land one-half mile from the town of Macy and prepare the same for holding our next annual exhibition there; and we have never had a gambling institution of any kind on our grounds; neither have we had any horse racing. Our fair has been principally a show of farm products and live stock.

J. COFFING,
Secretary.

NORTHEASTERN INDIANA.

Our Agricultural Association held its fifteenth annual fair on the grounds north of Waterloo, from October 4 to 8, 1886.

The weather was very pleasant during the entire week and the attendance was large, more general admission tickets being sold than during any former year.

The number of entries in the various departments was much larger than any former year since the organization, except the cattle department, and that was owing to the fact that the past year the managers excluded all grades except in the
class for fat stock. In the several departments there were this year one-fourth more entries than last, the total being 3,265 as against 2,449 for any former year.

On Wednesday of the fair, all pupils, school managers, trustees and teachers were admitted free. Those who attended the fair that day witnessed one of the grandest displays of the educational interest of Dekalb County that ever was held, there being over 3,000 school pupils and school workers in one unbroken procession on the race-track.

On Friday of the fair, the old soldiers were admitted free, and another fine parade of the defenders of our country was witnessed by patrons.

The Society expended, in the way of permanent improvements this year, $338. This sum was about equally divided on track, buildings and fences, which were in great need of repairs. The track was regraded and nicely fitted, consequently the speed department was well filled and the races were quite interesting.

There is a manifest improvement in stock breeding and the various other departments on exhibition from year to year at our fair.

The wheat crop in this vicinity during the year was good, the yield and quality being splendid.

Corn was not so good this year, yet was much better than was expected, as, during the latter part of August and early part of September, the drought affected it, yet the late frosts aided in perfecting the quality.

Oats was an excellent crop; good yield and better quality.

The prospect for crops in 1887 may be said to be quite good; a large acreage of the fall grain looked splendid when the snow covered it up.

I am pleased to say the affairs of the Society are in a prosperous condition, and the outlook encouraging for a good fair in 1887.

WM. H. LEAS,
Secretary.

NORTH MANCHESTER TRI-COUNTY.

Our third annual fair was held on the association grounds at North Manchester, from October 5 to October 8, 1886. The attendance was good throughout and the fair a grand success, both as to exhibits and financially. After paying all the premiums in full, and expenses, the association had a net balance of $1,033. 71.

The horse department entries exceeded those of 1885 by forty, and the stock generally of a better class, as were they also in the cattle, hog and sheep departments.

The cattle display was very good, being represented by herds of Shorthorns, Jerseys, Gurnseys, Holsteins, Polled Angus, and Herefords.

The show of hogs, in numbers, was fully up to former fairs, while the quality was an improvement. The same may be said of sheep.

The poultry display was large, and of an excellent quality.

The agricultural display was very good, the cereals being well represented and very much above an average in quality, being indeed very fine, as was the display of fruits.
One of the special features of our fair was a display by the Patrons of Husbandry. The association offered a special premium of $75, divided in two premiums, $50 and $25, to granges making the best exhibit. There were four entries, and the show simply grand.

The exhibit in the mechanical department was more than twice what it has been in former years.

The speed department was fairly represented. The farmers in this district are very much interested in the improvement of all kinds of stock. In horses the Normans and Clydesdales have the preference, and stock generally shows a very great improvement in the past few years. In cattle, Shorthorns, Holsteins, Herefords and Polled Angus have their admirers about equally among the farmers. We have some enthusiastic Jersey men, but I am inclined to think they are losing ground in public estimation.

The crops throughout the district were above the average, and our farmers are prosperous.

The society has 24 60-100 acres of land, with an amphitheater 40x100 feet, and a floral hall 30x50 feet, an agricultural hall 20x50 feet. This last building is too small and we rented a large tabernacle for use this year.

We also have a good track (one-half mile), sixty feet wide; also stalls, pens, poultry houses, etc.

The association owes about $1,500 on the grounds and improvements.

We allow no games of chance of any kind upon our grounds, and our attendance is from the best people in our district, which is composed of Wabash, Whitley and Kosciusko counties.

B. F. CLEMANS,
Secretary.

PATRONS AND FARMERS.

Our Society held its fourth annual fair near Kentland from August 24 to 27, inclusive. The weather was very fine, and we had a large crowd on Thursday, with light attendance the other days of the week. The County Teachers' Institute being held the same week worked against us, as we were compelled to postpone our school day until the last day of the fair. We paid 85 per cent. of our premiums, which is within 5 per cent. of the amount most fairs pay, when they pay in full, as we charged no entry fee.

The display of horses was very fine, while cattle was but poorly represented, and but a very few fine specimens were on exhibition. Our farmers would engage more extensively in sheep raising, but our barbed wire fences are not good for sheep pasture. The hog is the main dependence, and farmers are bringing them up to the highest point of excellence obtainable.

The domestic and floral exhibits were above an average. Wheat is not very extensively raised in this county, but the small crop was extra good in quality.
COUNTY AND DISTRICT REPORTS.

Oats were extensively grown, and we had the largest yield ever known, some fields producing as high as eighty bushels per acre on drained land. We have four tile factories in this county, and the demand is still unsupplied. Corn this season was rather light on account of the drought, but fine in quality.

J. H. JACKSON,
Secretary.

PLAINFIED DISTRICT.

This Society held no fair during 1886, on account of a combination of circumstances over which we had no control.

All the stock of this county are of the best of breeds and of high grades.

Horses take the lead, and our light harness, general purpose and draft horses rank among the best in the State. We also have some good runners.

Cattle are in excellent condition, and are bred with a view to obtaining in the near future pure bloods of the best strains. Shorthorns and Herefords take the lead, while Jerseys find less favor among the farmers this year.

Hogs are less than half a crop, owing to the prevalence of cholera, which swept away whole herds in certain localities.

Sheep are decreasing in numbers, but are doing well, and prices are advancing.

Wheat was a good crop and excellent. Three townships lost heavily by a hail storm May 23 which covered the whole earth with ice. The growing crop is about the same acreage as last year, looking well except in fallow ground, where it is injured by the fly. Oats a good crop. Timothy good. Not much old hay carried over. Meadows in good condition. The grasshoppers put in an early appearance, and in large numbers, but soon disappeared, doing but little damage.

Clover hay good, and cared for in good shape, with an unusual amount of seed saved.

The corn crop was an unusually good one, ripened and was cribbed in good time.

The roads are in much better condition than usual. The citizens have bought some of the toll roads and made them free.

The fencing in this county is in much better condition than for some time past.

Quite a number or fine dwellings have been erected, and many fine and commodious barns built. The County Commissioners have also added some good and substantial bridges to the improvements of the county this year.

A rigid game law for the protection of all useful birds for a period of not less than five years would be beneficial to the farming community.

JAMES M. BARLOW,
Secretary.
POPLAR GROVE.

The fourth annual fair of the Poplar Grove Agricultural, Horticultural and Mechanical Association was held at Poplar Grove, Howard County, September 6 to 10, 1886.

This exhibition was not so large, in number of exhibits, as that of 1885, presumably on account of the extremely warm weather and coming during the busy time among the farming community. However, the Society feel satisfied with this, their fourth annual fair, from the fact that the exhibits, while less in number than last year, were superior in quality, showing conclusively that these annual exhibits have had a very helpful influence in raising the standard of quality in all the productions of the farm, especially in the live stock department, that will add greatly to the wealth of the country and will be instrumental in securing to our live stock better care and attention, and a more careful study of the requisites essential to successful agriculture, horticulture, etc.

The great change for the better is easily discernible in the contrast presented in the great improvements from year to year of the exhibits of some of our people who show at our fair every year. Animals and articles that were considered especially meritorious, a few years ago, would scarcely be looked at now. In this way our Association is filling the mission of "educating our people to a higher standard of excellence."

The show of live stock, while less in numbers, was greatly superior in quality, as compared with former exhibits.

The show of poultry was good and divided among a large number of exhibitors. In the mechanical and farm implement departments, while the showing was not large the quality was superior to former exhibits.

Our lack of railroad facilities cuts us off from the advantages possessed by fairs more convenient to railroad stations. But the implement vendors are becoming awakened to the great advantages our fair presents as an advertising medium, bringing them into direct contact with the farmer, and, as a consequence, each year finds that department better patronized than the preceding year.

Of fancy articles and culinary preparations there was seemingly no end. Floral Hall was filled to overflowing with articles of use and ornament. The year 1886 has been a prosperous one to the farmer of Howard County, and also adjoining counties, so far as crops are concerned.

But the very noticeable depression in prices has made it discouraging to those who depend upon the sale of the products of the farm to raise money to meet their obligations and keep up necessary expenses.

The majority of our farmers are fully abreast of the times in the use of improved machinery, and in the improvements in live stock.

They are also becoming awakened to the value of fertilizers, clover, rotation of crops, etc.

Taking all in all, the future prospects of the Association and the farming interest in this part of the State are very encouraging. With plenty of railroads to insure a ready market for all our surplus products, made easily accessible at all
times by an improved system of free gravel roads, there is certainly no good
reason why we should not feel encouraged at the improvements already made and
the prospects of still greater achievements in the years to come.

R. T. Barber,
Secretary.

REMITTONG DISTRICT.

The Remington Fair Association was organized in the district comprising the
counties of Jasper, Newton, Benton and White. The twelfth annual fair was held
at our fair grounds, in Remington, August 31 to September 3, 1886, and was the
best ever held by the association.

The exhibition of horses, cattle, hogs, poultry, machinery, flowers, articles of
domestic skill, and textile fabrics, was very large.

The association already had a large number of horse and cattle stalls and hog
pens, but were obliged to build a large number in addition, in order to accommo-
date the stock in attendance.

This section of country is especially noted for its fine horses. Imported horses
have been kept here for several years and a great many good ones are growing up
and being sold. Several imported Norman horses are kept in the district, and a
few Clydesdale, English Draft and French Coach horses.

Quite a good deal of attention is being paid to breeding trotting horses by a
number of parties in the district, and several very fine horses, sired by Governor
Sprague, Durango, Jim Monroe, Indianapolis, Don Cossack, Blue Bull and High-
land Chief, are owned here.

The central and southern portion of the district is largely engaged in raising
corn, oats and hogs. The eastern and northern raise considerable wheat, a great
many cattle, and a few sheep.

We have not been troubled with hog cholera, except in the southern part of
Benton County.

The pleuro-pneumonia scare in Jasper County was found to be without found-
dation in fact.

O. M. Vickery,
Secretary.

SOUTHEASTERN INDIANA.

Our fair was not a success, our receipts barely paying premiums, leaving
us a debt contracted last year, of over $300, yet to provide for.

Every effort was made by our officers and directors to induce fine stock from
abroad to attend our fair, but with indifferent success. Of Shorthorns, M. S. Olin
& Son's herd, from near Chillicothe, Ohio, and Samuel McCreaey's herd, from
Switzerland County, Indiana, were the only ones of note on exhibition.
The fact has been fully demonstrated to us that the success of a fair depends altogether upon "horse racing and hyronomous." Big pumpkins and squashes are a thing of the past; fine hogs, sheep and poultry do not attract the least attention; everybody waits for the races. We have no track, and the unevenness of our grounds precludes one. Every effort is being made by our Board of Directors to raise money enough to purchase new grounds. If we succeed we will have a half-mile track. Then it will be "horse and hyronomous" to an extent that will satisfy even the most fastidious. The "Men of the Border" require these seeming luxuries, and it is the intention of the Aurora Fair at their next meeting to give them all they want.

D. Lostutter, Jr.,
Secretary.

SWITZERLAND AND OHIO.

Our fair, September 14 to 17, 1886, was the best in some respects of any ever held by this Society. The stock show was decidedly fine, both in imported and native breeds, thoroughbred and grades.

The horse show was especially fine, Kentucky contributing largely to this department. The speed ring had more than its usual attractions, more particularly the pace, which was very closely contested.

The cattle show was good, Shorthorn and Jersey predominating.

Of sheep, we had the Merinos, Southdowns, Oxforddowns, Shropshire, Leicester and their grades.

Of swine, the Poland-China and Berkshire hold the vantage ground.

Of poultry, we had the Asiatics, American, Hamburg, Spanish, French, Polish and others, besides the water-fowl.

The grain, fruit and vegetable display was full and fine, but the Ladies' Department was par excellence.

The weather the first of the week was unfavorable. Bad weather is a serious matter with us. We have no large towns to pour out their teeming population on short notice. On the contrary, at least four-fifths of our fair-going people are from the rural districts, gathered from a radius of country twenty-five miles around. On our last day this year there were, perhaps, six or seven thousand people in attendance, and their horses and vehicles covered fully ten acres of ground so densely packed that there was scarcely room to pass between them. The Society this year paid more in premiums than its entire gate receipts. The Board, as heretofore, rigidly excluded everything that bore any semblance of gambling or humbug. Increased premiums and extra expenses absorbed the total receipts, yet the Society is out of debt with a neat little balance in the treasury, gathered in former years. She has elected her officers for another year, revised her premium list, is now contemplating the enlarging of the grounds and lengthening the track to one-half mile.
AGRICULTURE.

Of its condition in this district we have little to say boastingly, and nothing complainingly. We are glad because of many things. One is that we have no subsidized press operated in the interest of land agents and real estate brokers to induce emigration by false representation, thereby bringing among us a deluded and dissatisfied people. Our people have learned that no great good is attained without effort, no excellence without labor, that great expectations often fail of realization, and that good everywhere is antagonized with evil, and we conclude that reasonable men everywhere expect to strive if they would obtain.

We have our advantages and our disadvantages. Chief among the latter is that some of our lands are not rich, naturally not deep, and exhausted by continuous and injudicious cropping. These are being, and can be, reclaimed by prudent management. The German people are especially successful in farming and improving these lands.

Among the advantages, we make mention that, with over forty years' experience, we have never heard of a human life destroyed by cyclone or blizzard. We have seen grasshoppers, but no insect has ever devastated our crops. We have lacked rain, but have never known stock to perish for want of water. We have had floods in the Ohio River, but, as in the days of Noah, the waters assuaged and left the lands the richer. Our people never felt an earthquake, and know very little of aque shakes. We perspire in summer sometimes at 95° Fah.; in winter our nose and toes tingle—to this date, January 1, only zero. Our cattle have no plague, our hogs no cholera, our horses no pink-eye. For our products we have convenient markets and cheap transportation by water. We are also to have a railroad—the Hamilton, Dayton & Louisville, also called the Ohio River Railroad. The northern terminus is now building; the route has been surveyed; an appropriation voted by the people, right of way granted, and work is expected to begin soon in these counties. It is expected that this will give a strong impetus to business.

Our crop report for 1886 is briefly as follows: Wheat, an excellent crop, in some cases yielding 30 bushels per acre, with an average of about 18 bushels. Rye and barley, good crop. Oats, good average, about 30 bushels. Clover, fine crop, a large part rotting back, but not lost. Timothy hay, hardly up to the average, yet we had entries at the fair, attested by affidavit of disinterested parties, of yields of 3½ tons per acre, after thorough curing for two months. There are many meadows run out, and the average, perhaps, of all might be placed at 1 ton per acre. Potatoes were from good to fair. The best we know of yielded 300 bushels; several other fields over 200; on hills and uplands 100 and less, according to soil and season of planting; average, perhaps, 100 bushels, or over. Buckwheat and sorghum, fair crop. Fruit of all kinds common to this locality plentiful except peaches. Winter apples did not keep well, yet they can be had at 30 cents. The tobacco crop was fair, but prices very low, from 1½ to 4 cents for grades that commanded 4 to 12½ a few years ago. Corn, about an average crop, from 80 bushels down to 20; average, about 40 bushels, and price 35 cents. Wheat, 75 cents. Potatoes marketed mostly at 40 cents, and about the most profitable crop produced. Hogs on foot, 4

20—Bd. of Agr.
cents. Cattle, little demanded except for beef. On the whole, we had no crop failure, and have reason to be happy. Owing to low price and dry weather, the area of wheat sown last fall was not large, looks only tolerably well, no protection from snow. The winter thus far has been mild, and the masses of our people and stock are well provided for. True, we have some pauperism, some crime, nearly all traceable to the saloons—no fault of the country. It may be the people's fault in tolerating this evil, but we opine that forbearance will cease to be a virtue in this matter, and our country will be still better.

Wm. H. Madison,
Secretary.

TELL CITY.

The seventh annual fair of the present association was held on their grounds near Tell City, September 28 to October 2, inclusive.

During the beginning of the week the weather was anything but favorable, but finally ended with sunshine.

The fair, as usual, was a success; the display was never excelled nor the number of stock greater at any of our previous fairs. The exhibits in all the different departments made a very good showing, and both exhibitors as well as visitors were pleased with the result.

A feature of the fair was the attending of the pupils of our free schools, with their teachers, in a body; to see the little ones exploring the wonders of the fair and venturing their opinions on exhibits was a treat in itself.

The crops of 1886 throughout the county were above an average, both in quantity and quality.

With favorable prospects of a railroad in the near future, we may look forward to an unprecedented period of prosperity and development in our county, inasmuch as untold wealth in the form of minerals of all kinds will be brought to light by the building of this road.

Andy Steinauer,
Secretary.

URMYVILLE.

Our association held its eighth annual fair on our grounds adjoining the village of Urmynville, on the F. F. & M. R. R., in Johnson County, from the 7th to the 9th of October. The weather was all that could have been desired, and the attendance was good, making the fair a success, financially and otherwise.

The entries in most all the departments were larger, and the exhibits and displays better than that of any preceding fair in the history of the association. The agricultural, horticultural and domestic art halls were full, and exhibitors in these departments seemed to vie with each other in making an attractive display. We
had an exciting bicycle race on the last day. The first money was captured by a student of Franklin College, whose home is in Iowa.

Special premiums were offered in several departments by the business men throughout the county, which caused lively competition.

Gambling of all kinds was excluded from the grounds, which had a tendency to bring out the very best element of society. Premiums were paid in full, leaving a balance in the treasury.

The wheat crop in the immediate vicinity of our fair grounds and for a radius of two or three miles was almost entirely ruined in May by one of the most destructive hailstorms that was ever known in our county. Outside of this the crop was more than an average, and the quality fair.

The corn crop was above the average, and as we have three starch factories in the county, which consume over half a million of bushels annually, our farmers get the very highest prices for their corn.

Since our last annual report, a large creamery has been built at our county seat (Franklin) and is now in successful operation. The people are much pleased with selling their cream at home instead of making it into butter and marketing it at about the same amount they realize for the cream.

The soil of our county is somewhat diversified. We have some very fine bottom lands, admirably adapted to the raising of corn, and our uplands to grazing and raising small grains, fruits, etc.

Our educational facilities and advantages are superior to those of many other counties in the State, as we have a splendidly equipped and endowed college at Franklin, under the auspices of the Baptist denomination. Our school houses are built of brick, and are large and commodious. The country and towns of our county are also well supplied with churches, many of which are large, of modern design, and elegantly furnished.

Most all the principal roads in the county are graveled, and, under the new law, most all are now free. So, with good schools, good markets, good churches, good soil, good water, good roads, good health and good people, we have no reason to complain.

S. W. Dungan,
Secretary.

WARREN TRI-COUNTY.

The third annual fair of the Warren Tri-County Agricultural Society was held on the grounds adjacent to Warren, September 7 to 11 inclusive. The district is composed of the counties of Huntington, Wells and Grant. The exhibitions are given at Warren, in Huntington County. Warren is a town on the Toledo, St. Louis & Kansas City Railroad, and has a population of 1,800. We have a large territory—Huntington, Bluffton and Marion are county seats equally distant, about fifteen miles apart. The country tributary to us is well and thickly settled. The country is level, except along the Salamonie River, which traverses it from east to west, and has been covered with various species of timber, walnut, poplar, oak,
The Salamonie is considerable of a stream, affording good mill sites, plenty of lime and building stone. Gravel is also plenty in the bluffs along the stream, which is being utilized in the construction of gravel roads, with which the country is well supplied.

Underdraining, stock feeding, and similar features of progressive agricultural practices, are becoming understood and appreciated as causes for enhanced values.

Tile manufacturing is an extensive business in this locality. Many thousands of rods are made annually, which find a ready market and are being laid all over the county.

Stock Raising—This branch of farming has not received the intelligent attention that the great interest demands. The kinds and breeds of stock, and the manner of keeping have not been much considered hitherto, but I am glad to notice that farmers are beginning to understand, appreciate and practice more sensible and economical methods. The old way of inbreeding with any kind of animals is being abandoned, and efforts to secure purer and better blood are made. The nucleus of several fine herds of Shorthorn cattle of the best blood have been started, and the parties are manifesting that intelligent enthusiasm which will ultimately secure success.

The hog interest, it may be said, is much in advance of all other kinds of stock breeding. We have many fine herds of the best blood. The Poland Chinas seem to be in greatest favor. The hog cholera has been prevailing over a wide extent of country, and has been very fatal.

The farmers are beginning to breed heavy draft horses. The business seems to be more appreciated than ever before, Norman and Clydesdale being generally preferred.

The sheep interest in this locality has never been anything but normal, but at present is attracting more attention than heretofore, the larger varieties preferred.

There are a good many amateur poultry men in the district that seem to have the necessary amount of energy and zeal to secure success.

Bee-keeping, I think, is almost neglected. They are permitted to go on in the old way and "root, hog, or die."

Considerable attention is being paid to the cultivation of carp, and astonishing results are sometimes attained. They have been grown from the spawn in the spring to weigh a pound or more in the fall. Plenty of water and protection from other fishes, turtles, frogs, etc., is about all the attention they seem to require.

All things considered, agriculturists in this district have reason to congratulate themselves. Broader, deeper, and more comprehensive views of their interests have been developed, and they, in no small degree, attribute it to the influence of our district society.

The society is in a prosperous condition. All of its exhibitions have been good—better than was expected. All of the departments were well filled, the races good, and general good feeling prevails. It is the policy and custom of the society to offer liberal premiums and pay them in full, all of which has been strictly performed, and the society has now over $1,700 in cash in its treasury. With a favorable season and fair weather during our next exhibition week, we confidently expect an improvement over any former fair.

J. F. Beard, Secretary.
WAYNE, HENRY AND RANDOLPH.

The seventh annual fair was held on our new grounds September 7 to 10, 1886, and was the most successful, financially, of any yet held by the association, the receipts being sufficient to pay all premiums in full; also, the expense of removal and fitting up new grounds, and for building a new Floral Hall.

The exhibit in the Floral and Vegetable Halls was excellent.

The display in the relic and apiarist departments deserves especial mention.

The entries and show of horses was very satisfactory, though not equal to the great show two years ago.

The number and quality of hogs on exhibition was good, considering the prevalence of cholera, but cattle and sheep were not so well represented as on former occasions.

The show of poultry was a leading feature of the fair. The awards were made by an expert and gave general satisfaction.

The light exhibit of stock was no doubt owing to the general belief that the unusual expenses of the fair would cut the premiums down to a trifle. This, however, was not the case, and it is believed the next fair will be the best ever held by the association.

Mixed farming predominates in this section. All the cereals and fruits of this latitude are produced to some extent.

The rearing of improved stock is a leading industry, and the counties comprising our district report as many fine herds and flocks as any like territory in the State. In the immediate vicinity of this fair, however, there are few who make thoroughbred stock a specialty.

The wheat crop the past year was about an average one.

Corn, medium, but of excellent quality.

Oats, hay and flax good.

Apples, the best for years.

The hog product of this section was almost swept away during the past summer and fall by cholera. This, together with the low price of farm products generally, causes some depression and retards general improvements, the drainage of wet lands, etc., to some extent. Speaking of wet lands it may be as well to mention that the really wet lands in this section are nearly all drained, and attention is now being given to upland clay soil. The field for improvement in this direction is almost unlimited and seems to be realized more each year.

Farmers still endeavor to fence their stock in and other people's out. There is but little agitation of the question.

The dog law is not very satisfactory, nor will it be until all of them are taxed, or blown out of existence.

Rail, board, hedge and wire fencing are used in the order named, but a combination of wood and wire is gaining in favor. There is also a great deal of hedge and wire fence that is proving satisfactory.

Cheap coal has reduced the consumption of wood and slightly reduced the area cleared during the year.

The principal roads are graveled, some free and some toll, but the free are gaining rapidly in number and favor.

B. B. Beeson, President.
## EXHIBIT OF THE AGRICULTURAL SOCIETIES OF INDIANA, 1886.

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## EXHIBIT OF AGRICULTURAL SOCIETIES OF INDIANA.

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**Grand total of county societies**: 11,847 634 3,774 2,841 5,522 5,440 28,078 5,087 8,502 5,094 11,084 4,949 1,268 10,052 3,985 1,488 80,849
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| **Grand Total of County and Dis-**  | 16,650    | 945               | 5,290   | 3,829  | 4,061 | 8,064   | 40,202          | 4,276       | 11,970          | 8,066           | 13,955           | 6,382    | 1,376               | 16,469          | 7,539          | 2,169         | 114,666      

DISTRIBUTIVE AGRICULTURAL SOCIETIES.
## EXHIBIT OF AGRICULTURAL SOCIETIES OF INDIANA, 1886.

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316

BOARD OF AGRICULTURE.
<p>| County                  | Agricultural Society | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|------------------------|----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Lagrange County Agr'l Society |                      | 250 | 350 | 12 | 30 | 19 | 22 | 12 | 10 | 20 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Lake County Agr. Soc.   |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Laporte County Agr. Soc. |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Lawrrence Agr'l &amp; Indus. Ass'n |                | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Madison County Agr'l Soc. |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Marion County Agr'l &amp; Hort. Soc. |                | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Montgomery County Agr'l Ass'n |                  | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Noble County Agr. Soc.   |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Parke County Agr. Soc.   |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Perry Co. Agr'l Soc.     |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Perry Co. Agr'l Soc.     |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Pike County Agr. Soc.    |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Ripley County Agr. Soc.  |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Rush County Agr. Soc.    |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Spencer County Agr'l Ind. Soc. |            | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Steuben County Agr. Soc. |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Sullivan County Agr. Soc. |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Tipton County Fair Co.   |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Vermillion County Agr'l Soc. |                  | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Vigo County Agr. Soc.    |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Wabash County Agr. Soc.  |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Warren Co. Agr'l Joint Soc. |               | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Warrick County Agr. Soc. |                      | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Wayne County Agr'l &amp; Hort. Soc. |               | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |
| Whitley Co. Joint Stock Agr'l Soc. |         | 150 | 225 | 35 | 62 | 20 | 28 | 18 | 16 | 28 | 36 | 12 | 28 | 16 | 14 | 33 | 20 | 20 | 20 | 20 | 20 | 20 |</p>
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### EXHIBIT OF AGRICULTURAL SOCIETIES.

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<td>Tippecanoe Co. Agricultural Association</td>
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- Indiana State Board of Agriculture: $2,617,063
- Boone Co. Stock Ag't Soc'y: 2,885
- Blackhawk Co. Fair Association: 710
- Tippecanoe Co. Agricultural Association: 2,772
- White Co. Agricultural Association: 1,567
- Warren Co. Agricultural Association: 4,088
- Decatur Co. A. & M. Ass'n: 2,804
- Delaware Co. Agricultural Society: 1,841
- Elwood Co. Agricultural Association: 3,086
- Fall Creek Co. A. & M. Soc'y: 2,690
- Gibson Co. Hort. A. & M. Soc'y: 3,986
- Grant Co. A. & S. F. Ass'n: 1,292
- Greene Co. Agricultural Society: 2,241
- Hamilton Co. Agricultural Ass'n: 3,791
- Hancock Co. Agricultural Ass'n: 3,086
- Jackson Co. A. & M. Soc'y: 1,792
- Jasper Co. A. & M. Soc'y: 3,809
- Lagrange Co. Agricultural Society: 1,056
- Lake Co. Agricultural Society: 1,224
### EXHIBIT OF AGRICULTURAL SOCIETIES—Continued.

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<td>1,100</td>
<td>50</td>
</tr>
<tr>
<td>Noble Co. Agricultural Society</td>
<td>1,816</td>
<td>15</td>
</tr>
<tr>
<td>Parke Co. Agricultural Society</td>
<td>1,036</td>
<td>15</td>
</tr>
<tr>
<td>Perry Co. Fair Ass'n at Tell City</td>
<td>413</td>
<td>15</td>
</tr>
<tr>
<td>Perry Co. A. and M. Ass'n at Rome</td>
<td>1,596</td>
<td>15</td>
</tr>
<tr>
<td>Pike Co. Agricultural Society</td>
<td>2,500</td>
<td>15</td>
</tr>
<tr>
<td>Porter Co. Agricultural Association</td>
<td>1,314</td>
<td>15</td>
</tr>
<tr>
<td>Randolph Co. Agricultural Society</td>
<td>966</td>
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<tr>
<td>Ripley Co. Agricultural Ass'n</td>
<td>1,683</td>
<td>10</td>
</tr>
<tr>
<td>Rush Co. Agricultural Society</td>
<td>3,831</td>
<td>20</td>
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<tr>
<td>Spencer Co. A. and I. Society</td>
<td>1,732</td>
<td>275</td>
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<tr>
<td>Steuben Co. Agricultural Ass'n</td>
<td>2,500</td>
<td>20</td>
</tr>
<tr>
<td>Sullivan Co. Agricultural Society</td>
<td>1,596</td>
<td>15</td>
</tr>
<tr>
<td>Tipton Co. Fair Association</td>
<td>2,516</td>
<td>300</td>
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<tr>
<td>Vigo Agricultural Society</td>
<td>2,883</td>
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<tr>
<td>Wabash Co. Agricultural Society</td>
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<td>30</td>
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<tr>
<td>Warren Co. Ag'l Jr.-Stock Ass'n</td>
<td>1,695</td>
<td>40</td>
</tr>
<tr>
<td>Warrick Co. Agricultural Ass'n</td>
<td>1,540</td>
<td>40</td>
</tr>
<tr>
<td>Wayne Co. Ag'l and Hort. Society</td>
<td>1,540</td>
<td>40</td>
</tr>
<tr>
<td>Whitley Co. Jr.-Stock Ag'l Ass'n</td>
<td>243</td>
<td>139</td>
</tr>
<tr>
<td>NAME OF SOCIETY</td>
<td>Receipts</td>
<td>DISBURSEMENTS</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>Admission</td>
<td>Rents and</td>
</tr>
<tr>
<td></td>
<td>License</td>
<td>Old Claims</td>
</tr>
<tr>
<td></td>
<td>Fee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entry</td>
<td>Improvements</td>
</tr>
<tr>
<td></td>
<td>Fees</td>
<td>Salaries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Premiums</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paid</td>
</tr>
<tr>
<td></td>
<td>Privileges Sold</td>
<td>Expenses of Fair</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actonia District Fair Association</td>
<td>$861</td>
<td>$678</td>
</tr>
<tr>
<td>Ardania District Fair Association</td>
<td>$560</td>
<td>$627</td>
</tr>
<tr>
<td>Bridgeton Union</td>
<td>1,225</td>
<td>1,100</td>
</tr>
<tr>
<td>Eastern Ind. Ag't Ass'n</td>
<td>3,480</td>
<td>1,100</td>
</tr>
<tr>
<td>Fairmont Un. Jt. St'k Ag't Ass'n</td>
<td>2,740</td>
<td>787</td>
</tr>
<tr>
<td>Fount'n, War'n &amp; Vermilion Ag't A'n</td>
<td>2,250</td>
<td>787</td>
</tr>
<tr>
<td>Francesville Ag't Society</td>
<td>625</td>
<td>787</td>
</tr>
<tr>
<td>Henry, Madison &amp; Del. Ag't Ass'n</td>
<td>1,272</td>
<td>787</td>
</tr>
<tr>
<td>Knightstown Union Ag't Ass'n</td>
<td>2,573</td>
<td>787</td>
</tr>
<tr>
<td>Lougooltee District Fair Ass'n</td>
<td>507</td>
<td>787</td>
</tr>
<tr>
<td>Miami and Fulton Dist. Fair Ass'n</td>
<td>308</td>
<td>787</td>
</tr>
<tr>
<td>New Ross Ag't Association</td>
<td>2,845</td>
<td>787</td>
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<tr>
<td>Northwestern Ind. Ag't Ass'n</td>
<td>2,880</td>
<td>787</td>
</tr>
<tr>
<td>North Ind. South'n Mich. Ag't S'y</td>
<td>3,016</td>
<td>787</td>
</tr>
<tr>
<td>Northwestern Ind. Tri-Co. Ag't Ass'n</td>
<td>3,016</td>
<td>787</td>
</tr>
<tr>
<td>North Salem Ag't and Hort. Soc'y</td>
<td>617</td>
<td>787</td>
</tr>
<tr>
<td>Patrons' and Farmers' Ag't Ass'n</td>
<td>525</td>
<td>787</td>
</tr>
<tr>
<td>Poplar Grove A., H. &amp; M. Ass'n</td>
<td>748</td>
<td>787</td>
</tr>
<tr>
<td>Remington Fair Association</td>
<td>1,233</td>
<td>787</td>
</tr>
<tr>
<td>Southeastern Ind. Ag't Society</td>
<td>2,600</td>
<td>787</td>
</tr>
<tr>
<td>Switzerland and Ohio Co. Ag't S'y</td>
<td>1,991</td>
<td>787</td>
</tr>
<tr>
<td>Union City Ag't and Mach't Ass'n</td>
<td>1,200</td>
<td>787</td>
</tr>
<tr>
<td>Warren Tri-Co. Ag't Society</td>
<td>2,799</td>
<td>787</td>
</tr>
<tr>
<td>Washington and Clark Co. Ag't Ass'n</td>
<td>743</td>
<td>787</td>
</tr>
<tr>
<td>Wayne, Henry &amp; Rand of Co. Ag't A'n</td>
<td>804</td>
<td>787</td>
</tr>
<tr>
<td>Xenia Union A., H. &amp; M. Society</td>
<td>1,465</td>
<td>787</td>
</tr>
</tbody>
</table>
ESTIMATED VALUE OF INDIANA AGRICULTURAL PRODUCTS.

Through the courtesy of Wm. A. Peelle, Jr., Chief of the Bureau of Statistics, we are permitted to copy from advance sheets of his annual report the following table and summary of the farm, mining and manufacturing products of the State for the years 1885 and 1886, compiled from reports received by the Bureau. The values are estimated upon the basis of average market prices, and will not be found to differ materially from actual values.

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>Product 1885.</th>
<th>Value</th>
<th>Product 1886.</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>33,867,920</td>
<td>$29,177,617</td>
<td>43,228,317</td>
<td>$32,419,738</td>
</tr>
<tr>
<td>Corn</td>
<td>117,154,214</td>
<td>33,190,807</td>
<td>106,217,209</td>
<td>38,790,551</td>
</tr>
<tr>
<td>Oats</td>
<td>25,290,133</td>
<td>6,300,280</td>
<td>23,300,102</td>
<td>8,215,730</td>
</tr>
<tr>
<td>Barley</td>
<td>256,840</td>
<td>141,275</td>
<td>320,078</td>
<td>214,551</td>
</tr>
<tr>
<td>Rye</td>
<td>484,686</td>
<td>277,126</td>
<td>522,321</td>
<td>261,190</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>67,894</td>
<td>44,130</td>
<td>105,734</td>
<td>63,440</td>
</tr>
<tr>
<td>Flax seed</td>
<td>161,681</td>
<td>156,849</td>
<td>153,128</td>
<td>160,764</td>
</tr>
<tr>
<td>Clover</td>
<td>237,279</td>
<td>1,315,471</td>
<td>216,515</td>
<td>866,060</td>
</tr>
<tr>
<td>Timothy</td>
<td>47,535</td>
<td>74,764</td>
<td>45,944</td>
<td>91,888</td>
</tr>
<tr>
<td>Clover hay</td>
<td>1,662,277</td>
<td>11,300,716</td>
<td>1,770,628</td>
<td>14,184,224</td>
</tr>
<tr>
<td>Timothy hay</td>
<td>1,944,948</td>
<td>13,631,250</td>
<td>1,820,241</td>
<td>17,392,285</td>
</tr>
<tr>
<td>Irish potatoes</td>
<td>5,817,524</td>
<td>2,066,751</td>
<td>5,320,021</td>
<td>1,797,340</td>
</tr>
<tr>
<td>Sweet potatoes</td>
<td>210,213</td>
<td>157,169</td>
<td>222,380</td>
<td>133,434</td>
</tr>
<tr>
<td>Tobacco</td>
<td>18,422,480</td>
<td>1,666,021</td>
<td>17,902,470</td>
<td>1,424,108</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$101,656,314</td>
<td></td>
<td>$113,986,387</td>
</tr>
</tbody>
</table>

1885.  1886.
Total value field products  $101,656,314  $113,986,387
Garden products            5,125,500     5,276,844
Honey, maple and sorghum sugar and molasses     859,366     989,891
Orchard products           3,785,625     4,227,960
Dairy products             18,261,940    17,801,355
Poultry, eggs and feathers  3,980,727     4,707,169
Wool                        1,153,044     1,047,229
Horses (increase in respective years)  2,767,260     2,955,000
Mules (increase in respective years)    523,630     567,000
Cattle (increase in respective years)    1,739,304    1,667,543
Sheep and lambs (increase in respective years)    705,732    687,098
Hogs                        16,985,850    17,615,290
Cattle slaughtered          6,734,779     6,843,817
Hogs slaughtered            12,816,780    11,982,280
Sheep slaughtered           227,990      247,974
Total value of farm products  $177,371,751  $190,515,317
Coal (tons)                 $3,500,000    $4,800,000
Stone quarries (estimated)  1,200,000     1,400,000
Manufactured products (estimated)  150,000,000  158,662,729

Grand total                $332,071,751  $355,278,046
A REVIEW OF INDIANA CROP PRODUCTIONS, 1886.

We present below an accurate summary of all the principal productions of the State of Indiana for the past year (1886), compiled and condensed by this department from the figures on file in the State Bureau of Statistics, by permission and courtesy of the chief, W. J. Peelle:

CORN.

The corn crop of the State was not so large as the preceding year (1885), falling short 7,216,705 bushels, while the acreage for 1886 was greater by 12,448 acres than that planted in 1885, thus indicating a falling off in the number of bushels produced to the acre, equaling an average of two and one-half bushels throughout the entire State. In this general falling off, it appears that several counties did not share, noticeably Benton County, which produced an average of 7,591 bushels to every square mile of territory included within its borders, this being an excess of 1,165 bushels over Rush County, which was the banner corn county in 1885. This brings Benton prominently to the front as a corn-producing county.

WHEAT.

The wheat crop for 1886 presents just the reverse condition, and in a much greater degree. The per cent. of increase of wheat produced in the State this year over the preceding year (1885) largely exceeds the per cent. of decrease in the production of corn for 1886.

The State produced 11,686,231 bushels more wheat this year than last, while the acreage was not increased proportionately (being only 71,672 acres in excess of 1885), thus yielding the remarkable average gain of three and nine-tenths bushels per acre, or an average of fifteen and four-tenths bushels per acre over the whole State, this, with the single exception of 1884, being the largest average production of wheat to the acre in the history of the State, or at least since the introduction of any approximate or reliable statistical compilation of the crops. Posey County leads the State this year, producing 2,524 bushels to the square mile, while Lake produced the largest average number of bushels (21.05) to the acre.
OATS.

While it is gratifying to record the increased production of the last named cereal over preceding years, it is with pride we refer to the steady development of the oat crop of the State during these years. Beginning with 1882, when the production was 19,615,516 bushels, with an acreage of 684,822 bushels sown, averaging twenty-eight and one-half bushels to the acre, production and acreage have gradually increased until this year (1886) 28,330,102 bushels were produced on 872,261 acres, yielding the extraordinary average of thirty-two and four-tenths bushels per acre throughout the entire State.

Benton, in addition to being the banner corn county this year, also leads the State in the production of oats, producing 4,395 bushels to the square mile (averaging forty-two and nine-tenths bushels to the acre), or 1,629 bushels more oats than it produced last year (1885), when it, as now, ranked first. Other counties in the State should look to their laurels, as by this magnificent showing an increase of one-third of the total oat crop in a single year, and that, too, over the year when she led the State, besides ranking first as a corn producer, shows her agriculturists to be wide awake and making rapid strides, which will eventually result in distinguishing her as the cereal producer of the State.

TIMOTHY AND CLOVER.

Indiana produced less timothy and clover hay during the year 1886 than any preceding year for the past four years, while the number of acres sown was larger than in any previous year (except 1885) in the history of the State.

The average per acre was very low, being barely one ton. Of timothy, Ohio County produced ninety-two and eight-tenths tons to the square mile, and ranks first according to size of county, while St. Joseph produced two and three-tenths tons, the highest average to the acre.

Of clover, Union County ranks first, according to area—132 tons to the square mile—while Warren averaged two and one-half tons per acre, which was the highest. Putnam County contains the largest number of acres (123,179) of wild grasses of any county in the State.

BARLEY, RYE, FLAXSEED AND TOBACCO.

Barley—The State more than doubled her crop of barley during 1886, producing 330,078 bushels, an increase of 179,547 over 1885.

Dearborn County this year, as in 1885, produced the largest number of bushels according to area, and ranks first, while Fayette produced the highest average, 36.6 bushels per acre.

Rye—This crop varied but little from that of 1885, the average production per acre being a shade less. While this was true, the acreage was much larger, and consequently 81,724 bushels more rye was raised than in 1885.

Blackford County produced the highest average (264 bushels) per acre, while Switzerland County raised the most rye.
Flaxseed—The yield was the largest according to the number of acres sown during the past five years, averaging 8½ bushels per acre over the entire State. Wayne County produced the most (20,998 bushels), while White County's average yield was the best, 10 bushels per acre.

Tobacco—The same is true of tobacco, it producing the largest average yield (804 pounds) during the past five years.

Spencer County leads the State with 7,002,700 pounds, while Ohio County lays claim to the highest average, 1,120 pounds to the acre.

LIVE STOCK, 1886.

Cattle—The number has gradually increased since 1882, until this year the total in the State is given at 1,251,428, an increase over 1885 of 68,063 head. Hendricks County contains the largest number according to area, averaging 48 to each square mile of territory.

Horses—The same may be said of horses as of cattle, the number in the State has steadily increased since 1883, and this year (1886) 513,970 head are reported, an increase over last year of 1,578.

Mules—The number reported is about equal to 1885, being stated at 57,283 head, a falling off of only 456. Morgan County contained the largest number (23 head) of horses, while Vanderburgh claims the largest number of mules (10 head) to each square mile of territory.

Hogs—The increase of hogs in the State this year has not been proportionate to that of cattle, and although a slight gain over 1885 is recorded, the total number, 1,761,529 head, falls over 200,000 short of the number produced during 1883 and 1884. The cause of this decreased production (so-called hog cholera) is well known to every intelligent farmer, and State legislation, providing for an investigation of the causes of this disease, and, if possible, to ascertain remedies to check its spread, is sadly needed.

Sheep—For a time this industry was neglected on account of the ravages of dogs, the low price of wool, and the constant agitation of the tariff question, but during the past year a very perceptible revival of the business of wool and mutton growing has taken place, and the number of sheep in the State is given at 1,401,612 head, an increase of 106,117 head over 1885. This advances sheep raising to where it was several years ago when it was a profitable and thriving industry, carried forward, on a large or small scale, by almost every farmer in the State of Indiana.
### INDIANA AGRICULTURAL STATISTICS, 1886.

#### CORN.

**COMPARATIVE YIELD.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>108,217,209</td>
<td>3,229,445</td>
<td>33.5</td>
</tr>
<tr>
<td>1885</td>
<td>115,433,914</td>
<td>3,216,997</td>
<td>35.8</td>
</tr>
<tr>
<td>1884</td>
<td>89,159,799</td>
<td>3,137,840</td>
<td>28.4</td>
</tr>
<tr>
<td>1883</td>
<td>89,699,237</td>
<td>3,125,376</td>
<td>28.7</td>
</tr>
<tr>
<td>1882</td>
<td>115,699,797</td>
<td>3,312,683</td>
<td>34.9</td>
</tr>
</tbody>
</table>

The principal corn-producing counties of the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>2,869,415</td>
<td>39.7</td>
</tr>
<tr>
<td>Shelby</td>
<td>2,309,663</td>
<td>37.7</td>
</tr>
<tr>
<td>Clinton</td>
<td>2,237,835</td>
<td>37.0</td>
</tr>
<tr>
<td>Randolph</td>
<td>2,213,981</td>
<td>33.4</td>
</tr>
<tr>
<td>Tippecanoe</td>
<td>2,155,793</td>
<td>28.9</td>
</tr>
</tbody>
</table>

Counties producing largest average number of bushels per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hancock</td>
<td>1,824,121</td>
<td>42.7</td>
</tr>
<tr>
<td>Tipton</td>
<td>1,381,811</td>
<td>40.7</td>
</tr>
<tr>
<td>Johnson</td>
<td>1,824,933</td>
<td>40.1</td>
</tr>
<tr>
<td>Benton</td>
<td>2,869,415</td>
<td>39.7</td>
</tr>
<tr>
<td>White</td>
<td>1,649,166</td>
<td>39.4</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of corn, according to size, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Miles</th>
<th>Total Production, Bushels</th>
<th>Average Bu. per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>378</td>
<td>2,869,415</td>
<td>7.591</td>
</tr>
<tr>
<td>Hancock</td>
<td>307</td>
<td>1,824,121</td>
<td>5.941</td>
</tr>
<tr>
<td>Clinton</td>
<td>408</td>
<td>2,309,663</td>
<td>5.660</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

The Year 1885.

The principal corn-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tippecanoe</td>
<td>2,994,096</td>
<td>39.09</td>
</tr>
<tr>
<td>Rush</td>
<td>2,660,437</td>
<td>43.09</td>
</tr>
<tr>
<td>Benton</td>
<td>2,448,800</td>
<td>33.01</td>
</tr>
<tr>
<td>Shelby</td>
<td>2,460,677</td>
<td>40.01</td>
</tr>
<tr>
<td>Wayne</td>
<td>2,279,108</td>
<td>42.00</td>
</tr>
</tbody>
</table>

Counties producing largest average number of bushels per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decatur</td>
<td>1,710,365</td>
<td>45.07</td>
</tr>
<tr>
<td>Posey</td>
<td>1,859,720</td>
<td>44.07</td>
</tr>
<tr>
<td>Union</td>
<td>935,376</td>
<td>44.03</td>
</tr>
<tr>
<td>Rush</td>
<td>2,660,437</td>
<td>43.09</td>
</tr>
<tr>
<td>Tipton</td>
<td>1,490,150</td>
<td>43.04</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of corn according to size, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Area</th>
<th>Total Production, Bushels</th>
<th>Average Bu. per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rush</td>
<td>414</td>
<td>2,660,437</td>
<td>6.426</td>
</tr>
<tr>
<td>Shelby</td>
<td>408</td>
<td>2,460,677</td>
<td>6.031</td>
</tr>
</tbody>
</table>

WHEAT.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>43,226,317</td>
<td>2,803,922</td>
<td>15.4</td>
</tr>
<tr>
<td>1885</td>
<td>31,640,086</td>
<td>2,732,250</td>
<td>11.5</td>
</tr>
<tr>
<td>1884</td>
<td>40,531,200</td>
<td>2,990,811</td>
<td>16.8</td>
</tr>
<tr>
<td>1883</td>
<td>31,405,573</td>
<td>3,049,209</td>
<td>10.2</td>
</tr>
<tr>
<td>1882</td>
<td>46,928,643</td>
<td>3,063,348</td>
<td>15.3</td>
</tr>
</tbody>
</table>

The principal wheat-producing counties of the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gibson</td>
<td>1,179,648</td>
<td>17.3</td>
</tr>
<tr>
<td>Posey</td>
<td>1,060,429</td>
<td>15.7</td>
</tr>
<tr>
<td>Clinton</td>
<td>966,031</td>
<td>18.4</td>
</tr>
<tr>
<td>Allen</td>
<td>919,839</td>
<td>17.9</td>
</tr>
<tr>
<td>Montgomery</td>
<td>881,706</td>
<td>16.3</td>
</tr>
</tbody>
</table>
Counties producing the largest average yield per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake</td>
<td>39,713</td>
<td>21.05</td>
</tr>
<tr>
<td>Carroll</td>
<td>872,635</td>
<td>20.9</td>
</tr>
<tr>
<td>Tipton</td>
<td>523,536</td>
<td>18.6</td>
</tr>
<tr>
<td>Clinton</td>
<td>966,031</td>
<td>18.4</td>
</tr>
<tr>
<td>Laporte</td>
<td>760,890</td>
<td>18.4</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of wheat, according to size, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Miles</th>
<th>Total Production, Bushels</th>
<th>Average Bu. Per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posey</td>
<td>420</td>
<td>1,060,429</td>
<td>2,524</td>
</tr>
<tr>
<td>Gibson</td>
<td>472</td>
<td>1,179,648</td>
<td>2,503</td>
</tr>
<tr>
<td>Clinton</td>
<td>408</td>
<td>966,031</td>
<td>2,367</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal wheat-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elkhart</td>
<td>856,577</td>
<td>17.3</td>
</tr>
<tr>
<td>Laporte</td>
<td>838,792</td>
<td>17.3</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>826,103</td>
<td>19.6</td>
</tr>
<tr>
<td>Gibson</td>
<td>80,196</td>
<td>11.8</td>
</tr>
<tr>
<td>Clinton</td>
<td>746,612</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Counties producing the largest average yield per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Joseph</td>
<td>826,103</td>
<td>19.6</td>
</tr>
<tr>
<td>Tipton</td>
<td>541,581</td>
<td>19.5</td>
</tr>
<tr>
<td>Lake</td>
<td>46,817</td>
<td>19.1</td>
</tr>
<tr>
<td>Lagrange</td>
<td>741,369</td>
<td>18.2</td>
</tr>
<tr>
<td>Noble</td>
<td>719,274</td>
<td>18.1</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of wheat according to size, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Mile</th>
<th>Total Production, Bushels</th>
<th>Average Bu. Per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Joseph</td>
<td>330</td>
<td>826,103</td>
<td>2,503</td>
</tr>
<tr>
<td>Tipton</td>
<td>260</td>
<td>541,581</td>
<td>2,083</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

OATS.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>28,330,102</td>
<td>872,261</td>
<td>32.4</td>
</tr>
<tr>
<td>1885</td>
<td>25,228,033</td>
<td>822,934</td>
<td>30.7</td>
</tr>
<tr>
<td>1884</td>
<td>23,576,117</td>
<td>791,843</td>
<td>29.7</td>
</tr>
<tr>
<td>1883</td>
<td>19,567,789</td>
<td>656,286</td>
<td>29.8</td>
</tr>
<tr>
<td>1882</td>
<td>19,615,516</td>
<td>684,822</td>
<td>28.6</td>
</tr>
</tbody>
</table>

The principal oat-producing counties of the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>1,661,501</td>
<td>42.9</td>
</tr>
<tr>
<td>Newton</td>
<td>979,396</td>
<td>42.1</td>
</tr>
<tr>
<td>Allen</td>
<td>810,374</td>
<td>38.6</td>
</tr>
<tr>
<td>Lake</td>
<td>810,058</td>
<td>32.2</td>
</tr>
<tr>
<td>White</td>
<td>783,226</td>
<td>33.2</td>
</tr>
</tbody>
</table>

Counties producing the largest average yield per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>1,661,501</td>
<td>42.9</td>
</tr>
<tr>
<td>Noble</td>
<td>456,381</td>
<td>42.4</td>
</tr>
<tr>
<td>Newton</td>
<td>979,396</td>
<td>42.1</td>
</tr>
<tr>
<td>Hamilton</td>
<td>200,846</td>
<td>42.0</td>
</tr>
<tr>
<td>Elkhart</td>
<td>603,444</td>
<td>40.7</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of oats according to size, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Mile</th>
<th>Total Production, Bushels</th>
<th>Average Bu. per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>378</td>
<td>1,661,501</td>
<td>4,395</td>
</tr>
<tr>
<td>Newton</td>
<td>382</td>
<td>979,396</td>
<td>2,564</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal oat-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>1,045,584</td>
<td>31.07</td>
</tr>
<tr>
<td>Lake</td>
<td>719,293</td>
<td>32.07</td>
</tr>
<tr>
<td>Newton</td>
<td>628,987</td>
<td>28.04</td>
</tr>
<tr>
<td>Allen</td>
<td>607,583</td>
<td>35.1</td>
</tr>
<tr>
<td>Laporte</td>
<td>577,785</td>
<td>34.5</td>
</tr>
</tbody>
</table>
BOARD OF AGRICULTURE.

Counties producing the largest average yield per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fayette</td>
<td>159,007</td>
<td>52.2</td>
</tr>
<tr>
<td>Rush</td>
<td>228,964</td>
<td>50.4</td>
</tr>
<tr>
<td>Union</td>
<td>103,054</td>
<td>46.1</td>
</tr>
<tr>
<td>Shelby</td>
<td>178,065</td>
<td>44.6</td>
</tr>
<tr>
<td>Henry</td>
<td>259,104</td>
<td>43.4</td>
</tr>
</tbody>
</table>

Counties in the State having the largest production of oats according to size, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Miles</th>
<th>Total Production, Bushels</th>
<th>Average Bu. per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>378</td>
<td>1,045,584</td>
<td>2,766</td>
</tr>
<tr>
<td>Newton</td>
<td>382</td>
<td>628,987</td>
<td>1,646</td>
</tr>
</tbody>
</table>

TIMOTHY AND CLOVER.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons</th>
<th>Acres</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>2,590,769</td>
<td>2,372,437</td>
<td>1.1</td>
</tr>
<tr>
<td>1885</td>
<td>3,610,606</td>
<td>2,420,056</td>
<td>1.4</td>
</tr>
<tr>
<td>1884</td>
<td>3,448,202</td>
<td>2,155,337</td>
<td>1.5</td>
</tr>
<tr>
<td>1883</td>
<td>3,450,656</td>
<td>2,106,938</td>
<td>1.6</td>
</tr>
<tr>
<td>1882*</td>
<td>1,599,994</td>
<td>984,982</td>
<td>1.6</td>
</tr>
</tbody>
</table>

* Timothy hay alone.

The principal timothy hay producing counties of the State, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake</td>
<td>41,963</td>
<td>1.4</td>
</tr>
<tr>
<td>Allen</td>
<td>33,361</td>
<td>1.3</td>
</tr>
<tr>
<td>Ripley</td>
<td>31,420</td>
<td>0.9</td>
</tr>
<tr>
<td>Hendricks</td>
<td>29,880</td>
<td>1.6</td>
</tr>
<tr>
<td>Parke</td>
<td>29,090</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Counties producing the largest average number of tons of timothy to the acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Joseph</td>
<td>18,506</td>
<td>2.3</td>
</tr>
<tr>
<td>Tipton</td>
<td>14,355</td>
<td>2.1</td>
</tr>
<tr>
<td>Parke</td>
<td>29,090</td>
<td>2.0</td>
</tr>
<tr>
<td>Howard</td>
<td>15,487</td>
<td>1.9</td>
</tr>
<tr>
<td>Cass</td>
<td>17,371</td>
<td>1.8</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Counties having the largest production of timothy hay according to size, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Miles</th>
<th>Total Production, Tons</th>
<th>Average Tons per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>90</td>
<td>8,352</td>
<td>92.8</td>
</tr>
<tr>
<td>Lake</td>
<td>500</td>
<td>41,963</td>
<td>83.9</td>
</tr>
<tr>
<td>Dearborn</td>
<td>291</td>
<td>23,420</td>
<td>80.4</td>
</tr>
</tbody>
</table>

Counties producing the largest amount of clover hay, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wabash</td>
<td>45,021</td>
<td>1.7</td>
</tr>
<tr>
<td>Gibson</td>
<td>39,783</td>
<td>1.9</td>
</tr>
<tr>
<td>Steuben</td>
<td>33,975</td>
<td>2.3</td>
</tr>
<tr>
<td>Henry</td>
<td>38,173</td>
<td>1.6</td>
</tr>
<tr>
<td>Lagrange</td>
<td>38,164</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Counties producing the largest average number of tons of clover hay to the acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warren</td>
<td>7,395</td>
<td>2.5</td>
</tr>
<tr>
<td>Steuben</td>
<td>38,975</td>
<td>2.3</td>
</tr>
<tr>
<td>Howard</td>
<td>27,746</td>
<td>2.2</td>
</tr>
<tr>
<td>Knox</td>
<td>32,681</td>
<td>2.0</td>
</tr>
<tr>
<td>Hendricks</td>
<td>27,917</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Counties having the largest production of clover hay according to size, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Area, Square Miles</th>
<th>Total Production, Tons</th>
<th>Average Tons per Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union</td>
<td>168</td>
<td>22,232</td>
<td>132</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>330</td>
<td>36,112</td>
<td>109</td>
</tr>
<tr>
<td>Wabash</td>
<td>426</td>
<td>45,021</td>
<td>105</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal hay (timothy and clover) producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randolph</td>
<td>70,610</td>
<td>1.7</td>
</tr>
<tr>
<td>Wabash</td>
<td>69,491</td>
<td>1.7</td>
</tr>
<tr>
<td>Elkhart</td>
<td>65,009</td>
<td>1.5</td>
</tr>
<tr>
<td>Wayne</td>
<td>64,389</td>
<td>1.7</td>
</tr>
<tr>
<td>Gibson</td>
<td>63,330</td>
<td>1.9</td>
</tr>
</tbody>
</table>
Counties producing the largest average number of tons of timothy hay to the acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Tons Produced</th>
<th>Average Tons per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union</td>
<td>7,270</td>
<td>2.00</td>
</tr>
<tr>
<td>Fulton</td>
<td>15,380</td>
<td>1.96</td>
</tr>
<tr>
<td>Miami</td>
<td>20,234</td>
<td>1.95</td>
</tr>
<tr>
<td>Randolph</td>
<td>35,642</td>
<td>1.94</td>
</tr>
<tr>
<td>Howard</td>
<td>14,051</td>
<td>1.89</td>
</tr>
</tbody>
</table>

BLUE AND OTHER WILD GRASSES.

Year:                      | Acres:|
1886:                     | 2,044,917|
1885:                     | 2,147,919|

Counties growing the most wild grasses during 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putnam</td>
<td>123,179</td>
</tr>
<tr>
<td>Jasper</td>
<td>119,954</td>
</tr>
<tr>
<td>Owen</td>
<td>72,396</td>
</tr>
<tr>
<td>Lawrence</td>
<td>70,595</td>
</tr>
<tr>
<td>Hendricks</td>
<td>63,644</td>
</tr>
</tbody>
</table>

BARLEY.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>330,078</td>
<td>13,577</td>
<td>24.3</td>
</tr>
<tr>
<td>1885</td>
<td>150,531</td>
<td>9,186</td>
<td>16.3</td>
</tr>
<tr>
<td>1884</td>
<td>259,106</td>
<td>11,907</td>
<td>22.6</td>
</tr>
<tr>
<td>1883</td>
<td>399,183</td>
<td>20,172</td>
<td>14.3</td>
</tr>
<tr>
<td>1882</td>
<td>1,138,717</td>
<td>44,242</td>
<td>25.7</td>
</tr>
</tbody>
</table>

The principal barley-producing counties of the State for 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dearborn</td>
<td>58,081</td>
<td>23.5</td>
</tr>
<tr>
<td>Franklin</td>
<td>18,021</td>
<td>20.9</td>
</tr>
<tr>
<td>Jefferson</td>
<td>17,616</td>
<td>27.1</td>
</tr>
<tr>
<td>Marion</td>
<td>15,093</td>
<td>19.6</td>
</tr>
<tr>
<td>Randolph</td>
<td>11,705</td>
<td>19.7</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Counties producing the largest yield per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fayette</td>
<td>1,540</td>
<td>36.6</td>
</tr>
<tr>
<td>Montgomery</td>
<td>5,060</td>
<td>33.0</td>
</tr>
<tr>
<td>Dubois</td>
<td>1,850</td>
<td>31.3</td>
</tr>
<tr>
<td>Jefferson</td>
<td>17,616</td>
<td>27.1</td>
</tr>
<tr>
<td>Grant</td>
<td>4,425</td>
<td>26.8</td>
</tr>
</tbody>
</table>

The year 1885.

The principal barley-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dearborn</td>
<td>20,346</td>
<td>15.01</td>
</tr>
<tr>
<td>Marion</td>
<td>10,580</td>
<td>14.3</td>
</tr>
<tr>
<td>Franklin</td>
<td>10,230</td>
<td>13.3</td>
</tr>
<tr>
<td>Miami</td>
<td>5,860</td>
<td>32.7</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>5,793</td>
<td>18.7</td>
</tr>
</tbody>
</table>

Counties producing the largest average yield per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tipton</td>
<td>2,340</td>
<td>39.0</td>
</tr>
<tr>
<td>Knox</td>
<td>2,827</td>
<td>34.0</td>
</tr>
<tr>
<td>Miami</td>
<td>5,860</td>
<td>32.7</td>
</tr>
<tr>
<td>Howard</td>
<td>3,865</td>
<td>27.1</td>
</tr>
<tr>
<td>Vanderburgh</td>
<td>1,040</td>
<td>26.0</td>
</tr>
</tbody>
</table>

RYE.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>522,321</td>
<td>36,581</td>
<td>14.2</td>
</tr>
<tr>
<td>1885</td>
<td>440,597</td>
<td>29,875</td>
<td>14.7</td>
</tr>
<tr>
<td>1884</td>
<td>434,266</td>
<td>32,373</td>
<td>13.4</td>
</tr>
<tr>
<td>1883</td>
<td>358,513</td>
<td>26,604</td>
<td>13.4</td>
</tr>
<tr>
<td>1882</td>
<td>548,405</td>
<td>36,695</td>
<td>14.9</td>
</tr>
</tbody>
</table>

The principal rye-producing counties in the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>33,774</td>
<td>12.1</td>
</tr>
<tr>
<td>Allen</td>
<td>32,101</td>
<td>18.3</td>
</tr>
<tr>
<td>Lake</td>
<td>26,973</td>
<td>21.1</td>
</tr>
<tr>
<td>Pulaski</td>
<td>23,813</td>
<td>14.1</td>
</tr>
<tr>
<td>Elkhart</td>
<td>23,621</td>
<td>12.7</td>
</tr>
</tbody>
</table>
Counties producing the largest average yield per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackford</td>
<td>6,765</td>
<td>26.8</td>
</tr>
<tr>
<td>Tipton</td>
<td>2,284</td>
<td>22.4</td>
</tr>
<tr>
<td>Lake</td>
<td>26,973</td>
<td>21.1</td>
</tr>
<tr>
<td>Delaware</td>
<td>6,545</td>
<td>20.6</td>
</tr>
<tr>
<td>Madison</td>
<td>3,922</td>
<td>20.6</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal rye-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elkhart</td>
<td>33,982</td>
<td>16.5</td>
</tr>
<tr>
<td>Pulaski</td>
<td>28,429</td>
<td>15.8</td>
</tr>
<tr>
<td>Jasper</td>
<td>25,238</td>
<td>12.9</td>
</tr>
<tr>
<td>Starke</td>
<td>24,469</td>
<td>14.5</td>
</tr>
<tr>
<td>Switzerland</td>
<td>19,348</td>
<td>9.3</td>
</tr>
</tbody>
</table>

Counties producing the largest average yield per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>19,153</td>
<td>25.2</td>
</tr>
<tr>
<td>Tipton</td>
<td>1,610</td>
<td>24.03</td>
</tr>
<tr>
<td>Jackson</td>
<td>4,376</td>
<td>23.1</td>
</tr>
<tr>
<td>Henry</td>
<td>1,695</td>
<td>22.7</td>
</tr>
<tr>
<td>Adams</td>
<td>1,960</td>
<td>22.5</td>
</tr>
</tbody>
</table>

FLAXSEED.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>153,128</td>
<td>18,268</td>
<td>8.3</td>
</tr>
<tr>
<td>1885</td>
<td>132,181</td>
<td>17,767</td>
<td>7.4</td>
</tr>
<tr>
<td>1884</td>
<td>185,227</td>
<td>28,166</td>
<td>6.5</td>
</tr>
<tr>
<td>1883</td>
<td>156,181</td>
<td>24,653</td>
<td>6.3</td>
</tr>
<tr>
<td>1882</td>
<td>582,270</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The principal flax-producing counties of the State for 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayne</td>
<td>20,998</td>
<td>7.4</td>
</tr>
<tr>
<td>Huntington</td>
<td>18,277</td>
<td>9.9</td>
</tr>
<tr>
<td>Newton</td>
<td>11,374</td>
<td>9.0</td>
</tr>
<tr>
<td>Randolph</td>
<td>11,216</td>
<td>8.0</td>
</tr>
<tr>
<td>Grant</td>
<td>7,970</td>
<td>7.6</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Counties in the State producing the largest number of bushels to the acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>7,880</td>
<td>10.0</td>
</tr>
<tr>
<td>Noble</td>
<td>430</td>
<td>10.0</td>
</tr>
<tr>
<td>Floyd</td>
<td>120</td>
<td>10.0</td>
</tr>
<tr>
<td>Starke</td>
<td>100</td>
<td>10.0</td>
</tr>
<tr>
<td>Miami</td>
<td>6,292</td>
<td>9.9</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal flaxseed-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randolph</td>
<td>15,951</td>
<td>9.6</td>
</tr>
<tr>
<td>Newton</td>
<td>14,712</td>
<td>7.8</td>
</tr>
<tr>
<td>Wayne</td>
<td>12,166</td>
<td>9.03</td>
</tr>
<tr>
<td>Huntington</td>
<td>10,697</td>
<td>7.03</td>
</tr>
<tr>
<td>Grant</td>
<td>8,003</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Counties in the State producing the largest number of bushels to the acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elkhart</td>
<td>812</td>
<td>13.3</td>
</tr>
<tr>
<td>Cass</td>
<td>1,196</td>
<td>11.9</td>
</tr>
<tr>
<td>Noble</td>
<td>180</td>
<td>10.0</td>
</tr>
<tr>
<td>Ripley</td>
<td>290</td>
<td>10.0</td>
</tr>
<tr>
<td>Starke</td>
<td>130</td>
<td>10.0</td>
</tr>
</tbody>
</table>

TOBACCO.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pounds</th>
<th>Acres</th>
<th>Average Pounds per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>17,802,470</td>
<td>22,134</td>
<td>804.3</td>
</tr>
<tr>
<td>1885</td>
<td>18,404,475</td>
<td>24,386</td>
<td>754.7</td>
</tr>
<tr>
<td>1884</td>
<td>15,592,400</td>
<td>20,711</td>
<td>753.3</td>
</tr>
<tr>
<td>1883</td>
<td>7,706,110</td>
<td>13,092</td>
<td>588.6</td>
</tr>
<tr>
<td>1882</td>
<td>13,593,486</td>
<td>17,234</td>
<td>788.7</td>
</tr>
</tbody>
</table>

The principal tobacco-producing counties of the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Pounds Produced</th>
<th>Average Pounds per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spencer</td>
<td>7,002,700</td>
<td>870</td>
</tr>
<tr>
<td>Warrick</td>
<td>5,161,760</td>
<td>799</td>
</tr>
<tr>
<td>Dubois</td>
<td>1,418,575</td>
<td>824</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1,339,400</td>
<td>635</td>
</tr>
<tr>
<td>Pike</td>
<td>896,150</td>
<td>761</td>
</tr>
</tbody>
</table>
Counties producing the largest average number of pounds per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Pounds Produced</th>
<th>Average Pounds per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>90,800</td>
<td>1,120</td>
</tr>
<tr>
<td>Martin</td>
<td>24,100</td>
<td>1,004</td>
</tr>
<tr>
<td>Jefferson</td>
<td>643,600</td>
<td>908</td>
</tr>
<tr>
<td>Dearborn</td>
<td>59,475</td>
<td>874</td>
</tr>
<tr>
<td>Spencer</td>
<td>7,002,700</td>
<td>870</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal tobacco-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Pounds Produced</th>
<th>Average Pounds per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrick</td>
<td>6,096,750</td>
<td>814.5</td>
</tr>
<tr>
<td>Spencer</td>
<td>5,921,200</td>
<td>786.2</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1,644,800</td>
<td>751.7</td>
</tr>
<tr>
<td>Pike</td>
<td>1,477,100</td>
<td>667.4</td>
</tr>
<tr>
<td>Dubois</td>
<td>1,141,600</td>
<td>689.1</td>
</tr>
</tbody>
</table>

The counties producing the largest average number of pounds to the acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Pounds Produced</th>
<th>Average Pounds per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison</td>
<td>117,900</td>
<td>1101.9</td>
</tr>
<tr>
<td>Parke</td>
<td>17,000</td>
<td>1000.0</td>
</tr>
<tr>
<td>Tipton</td>
<td>8,800</td>
<td>977.7</td>
</tr>
<tr>
<td>Vanderburgh</td>
<td>48,900</td>
<td>905.5</td>
</tr>
<tr>
<td>Warrick</td>
<td>6,096,750</td>
<td>814.5</td>
</tr>
</tbody>
</table>

BUCKWHEAT.

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres</th>
<th>Bushels</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>6,969</td>
<td>105,734</td>
<td>15.3</td>
</tr>
</tbody>
</table>

Counties producing the most buckwheat during the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake</td>
<td>13,569</td>
<td>24.6</td>
</tr>
<tr>
<td>Pulaski</td>
<td>8,078</td>
<td>18.5</td>
</tr>
<tr>
<td>White</td>
<td>6,585</td>
<td>21.6</td>
</tr>
<tr>
<td>Allen</td>
<td>6,344</td>
<td>34.8</td>
</tr>
<tr>
<td>Starke</td>
<td>5,120</td>
<td>16.5</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Counties producing the largest average number of bushels per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>6,344</td>
<td>34.6</td>
</tr>
<tr>
<td>Morgan</td>
<td>596</td>
<td>28.3</td>
</tr>
<tr>
<td>Lake</td>
<td>13,569</td>
<td>24.6</td>
</tr>
<tr>
<td>White</td>
<td>6,586</td>
<td>21.6</td>
</tr>
<tr>
<td>Wabash</td>
<td>1,402</td>
<td>20.0</td>
</tr>
</tbody>
</table>

POTATOES.

COMPARATIVE YIELD.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>5,392,021</td>
<td>72,055</td>
<td>74.3</td>
</tr>
<tr>
<td>1885</td>
<td>5,801,524</td>
<td>74,434</td>
<td>77.9</td>
</tr>
<tr>
<td>1884</td>
<td>5,969,461</td>
<td>87,484</td>
<td>68.2</td>
</tr>
<tr>
<td>1883</td>
<td>8,353,412</td>
<td>87,100</td>
<td>95.9</td>
</tr>
<tr>
<td>1882</td>
<td>7,264,830</td>
<td>72,934</td>
<td>99.6</td>
</tr>
</tbody>
</table>

The principal potato-producing counties of the State for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>343,922</td>
<td>108</td>
</tr>
<tr>
<td>Allen</td>
<td>231,805</td>
<td>82</td>
</tr>
<tr>
<td>Switzerland</td>
<td>157,715</td>
<td>69</td>
</tr>
<tr>
<td>Lake</td>
<td>151,840</td>
<td>58</td>
</tr>
<tr>
<td>Harrison</td>
<td>130,060</td>
<td>105</td>
</tr>
</tbody>
</table>

Counties producing the largest average number of bushels per acre, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dubois</td>
<td>74,815</td>
<td>129</td>
</tr>
<tr>
<td>Carroll</td>
<td>65,610</td>
<td>128</td>
</tr>
<tr>
<td>Wabash</td>
<td>111,340</td>
<td>119</td>
</tr>
<tr>
<td>Blackford</td>
<td>62,240</td>
<td>113</td>
</tr>
<tr>
<td>Marion</td>
<td>343,922</td>
<td>108</td>
</tr>
</tbody>
</table>

The Year 1885.

The principal potato-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>229,815</td>
<td>80.1</td>
</tr>
<tr>
<td>Allen</td>
<td>219,005</td>
<td>80.6</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>169,410</td>
<td>84.3</td>
</tr>
<tr>
<td>Marshall</td>
<td>149,445</td>
<td>95.9</td>
</tr>
<tr>
<td>Vanderburgh</td>
<td>142,690</td>
<td>81.9</td>
</tr>
</tbody>
</table>

22—Bd. of Agr.
COUNTIES PRODUCING THE LARGEST AVERAGE YIELD PER ACRE, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackford</td>
<td>61,425</td>
<td>132.2</td>
<td></td>
</tr>
<tr>
<td>Gideon</td>
<td>41,540</td>
<td>120.0</td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>116,380</td>
<td>116.0</td>
<td></td>
</tr>
<tr>
<td>Union</td>
<td>20,700</td>
<td>113.0</td>
<td></td>
</tr>
<tr>
<td>Henry</td>
<td>78,840</td>
<td>110.0</td>
<td></td>
</tr>
</tbody>
</table>

SWEET POTATOES.

COMPARATIVE YIELD:

<table>
<thead>
<tr>
<th>Year</th>
<th>Bushels</th>
<th>Acres</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>222,390</td>
<td>3,008</td>
<td>74.0</td>
</tr>
<tr>
<td>1885</td>
<td>183,928</td>
<td>2,552</td>
<td>72.0</td>
</tr>
<tr>
<td>1884</td>
<td>142,429</td>
<td>2,509</td>
<td>56.7</td>
</tr>
<tr>
<td>1883</td>
<td>188,876</td>
<td>2,208</td>
<td>73.8</td>
</tr>
<tr>
<td>1882</td>
<td>696,245</td>
<td>10,506</td>
<td>66.2</td>
</tr>
</tbody>
</table>

The principal sweet potato producing counties for the year 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>38,700</td>
<td>115</td>
</tr>
<tr>
<td>Henry</td>
<td>12,070</td>
<td>109</td>
</tr>
<tr>
<td>Benton</td>
<td>12,000</td>
<td>60</td>
</tr>
<tr>
<td>Warrick</td>
<td>11,750</td>
<td>92</td>
</tr>
<tr>
<td>Wayne</td>
<td>9,885</td>
<td>55</td>
</tr>
</tbody>
</table>

COUNTIES PRODUCING THE LARGEST AVERAGE NUMBER OF BUSHELS PER ACRE, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carroll</td>
<td>1,500</td>
<td>125</td>
</tr>
<tr>
<td>Marion</td>
<td>38,700</td>
<td>115</td>
</tr>
<tr>
<td>Henry</td>
<td>12,070</td>
<td>109</td>
</tr>
<tr>
<td>Dearborn</td>
<td>2,675</td>
<td>104</td>
</tr>
<tr>
<td>Ohio</td>
<td>500</td>
<td>100</td>
</tr>
</tbody>
</table>

THE YEAR 1885.

The principal sweet potato-producing counties of the State for the year 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marion</td>
<td>24,955</td>
<td>100</td>
</tr>
<tr>
<td>Warrick</td>
<td>16,120</td>
<td>110</td>
</tr>
<tr>
<td>Spencer</td>
<td>13,066</td>
<td>70</td>
</tr>
<tr>
<td>Benton</td>
<td>10,050</td>
<td>50</td>
</tr>
<tr>
<td>Vigo</td>
<td>9,750</td>
<td>77</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Counties producing the largest average number of bushels per acre, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Bushels Produced</th>
<th>Average Bushels per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knox</td>
<td>2,440</td>
<td>128</td>
</tr>
<tr>
<td>Warrick</td>
<td>16,120</td>
<td>110</td>
</tr>
<tr>
<td>Wabash</td>
<td>2,325</td>
<td>110</td>
</tr>
<tr>
<td>Bartholomew</td>
<td>5,285</td>
<td>103</td>
</tr>
<tr>
<td>Marion</td>
<td>24,955</td>
<td>100</td>
</tr>
</tbody>
</table>

LIVE STOCK.

CATTLE AND HOGS.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No. Cattle in State</th>
<th>Total No. Hogs in State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>1,251,428</td>
<td>1,761,529</td>
</tr>
<tr>
<td>1885</td>
<td>1,183,365</td>
<td>1,698,585</td>
</tr>
<tr>
<td>1884</td>
<td>1,112,373</td>
<td>1,967,901</td>
</tr>
<tr>
<td>1883</td>
<td>1,057,296</td>
<td>1,911,820</td>
</tr>
<tr>
<td>1882</td>
<td>1,110,623</td>
<td>1,655,379</td>
</tr>
</tbody>
</table>

Counties having the largest number of cattle and hogs, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Total No. Cattle</th>
<th>County</th>
<th>Total No. Hogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>24,687</td>
<td>Montgomery</td>
<td>46,059</td>
</tr>
<tr>
<td>Jasper</td>
<td>22,677</td>
<td>Daviess</td>
<td>40,281</td>
</tr>
<tr>
<td>Greene</td>
<td>19,777</td>
<td>Delaware</td>
<td>40,244</td>
</tr>
<tr>
<td>Randolph</td>
<td>18,829</td>
<td>Grant</td>
<td>39,384</td>
</tr>
<tr>
<td>Montgomery</td>
<td>18,786</td>
<td>Boone</td>
<td>35,970</td>
</tr>
</tbody>
</table>

Counties in the State having the largest number of cattle according to area, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Cattle</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hendricks</td>
<td>18,777</td>
<td>48</td>
</tr>
<tr>
<td>Howard</td>
<td>13,914</td>
<td>47</td>
</tr>
<tr>
<td>Union</td>
<td>7,925</td>
<td>47</td>
</tr>
<tr>
<td>Wayne</td>
<td>18,363</td>
<td>46</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>15,444</td>
<td>46</td>
</tr>
</tbody>
</table>

Total number of milch cows in the State, 1886: 447,322

Counties having the largest number of hogs, according to area, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Hogs</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard</td>
<td>31,872</td>
<td>108</td>
</tr>
<tr>
<td>Delaware</td>
<td>40,244</td>
<td>100</td>
</tr>
<tr>
<td>Hancock</td>
<td>30,883</td>
<td>100</td>
</tr>
<tr>
<td>Daviess</td>
<td>40,281</td>
<td>93</td>
</tr>
<tr>
<td>Carroll</td>
<td>34,278</td>
<td>91</td>
</tr>
</tbody>
</table>
### Counties having the largest number of cattle and hogs in 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Cattle, Total No.</th>
<th>County</th>
<th>Hogs, Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>29,175</td>
<td>Montgomery</td>
<td>46,537</td>
</tr>
<tr>
<td>Jasper</td>
<td>20,876</td>
<td>Henry</td>
<td>39,870</td>
</tr>
<tr>
<td>Randolph</td>
<td>18,451</td>
<td>Grant</td>
<td>38,553</td>
</tr>
<tr>
<td>White</td>
<td>18,187</td>
<td>Rush</td>
<td>37,368</td>
</tr>
<tr>
<td>Hendricks</td>
<td>17,902</td>
<td>Hamilton</td>
<td>38,815</td>
</tr>
</tbody>
</table>

### Counties in the State having the largest number of cattle, according to area, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Cattle</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hendricks</td>
<td>17,902</td>
<td>45.9</td>
</tr>
<tr>
<td>Benton</td>
<td>16,815</td>
<td>44.5</td>
</tr>
<tr>
<td>Wayne</td>
<td>17,464</td>
<td>44.4</td>
</tr>
<tr>
<td>Delaware</td>
<td>17,578</td>
<td>44.3</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>14,710</td>
<td>44.2</td>
</tr>
</tbody>
</table>

### Counties having the largest number of hogs, according to area, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Hogs</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fayette</td>
<td>23,115</td>
<td>109.0</td>
</tr>
<tr>
<td>Henry</td>
<td>39,870</td>
<td>99.6</td>
</tr>
<tr>
<td>Hancock</td>
<td>29,547</td>
<td>96.2</td>
</tr>
<tr>
<td>Montgomery</td>
<td>46,537</td>
<td>92.3</td>
</tr>
<tr>
<td>Grant</td>
<td>38,553</td>
<td>92.2</td>
</tr>
</tbody>
</table>

### SHEEP AND LAMBS.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total in State</th>
<th>Average to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>1,401,612</td>
<td>38.0</td>
</tr>
<tr>
<td>1885</td>
<td>1,295,495</td>
<td>36.0</td>
</tr>
<tr>
<td>1884</td>
<td>1,508,713</td>
<td>42.0</td>
</tr>
<tr>
<td>1883</td>
<td>1,497,362</td>
<td>41.0</td>
</tr>
<tr>
<td>1882</td>
<td>1,595,148</td>
<td>44.0</td>
</tr>
</tbody>
</table>

### Counties in the State producing the largest number of sheep and lambs, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Total Number</th>
<th>Average to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagrange</td>
<td>44,859</td>
<td>115.0</td>
</tr>
<tr>
<td>Dekalb</td>
<td>40,628</td>
<td>109.0</td>
</tr>
<tr>
<td>Steuben</td>
<td>38,984</td>
<td>86.0</td>
</tr>
<tr>
<td>Owen</td>
<td>35,512</td>
<td>90.9</td>
</tr>
<tr>
<td>Elkhart</td>
<td>34,064</td>
<td>72.0</td>
</tr>
</tbody>
</table>
AGRICULTURAL STATISTICS.

Steuben raised the most sheep (35,569) alone, while Lagrange raised the most lambs (10,057) from 34,802 sheep; Steuben only 3,365 lambs from near 1,000 more sheep.

The Year 1885.

Counties producing the largest number of sheep and lambs, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Total Number</th>
<th>Average to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montgomery</td>
<td>44,993</td>
<td>124.9</td>
</tr>
<tr>
<td>Steuben</td>
<td>44,074</td>
<td>133.5</td>
</tr>
<tr>
<td>Lagrange</td>
<td>43,126</td>
<td>111.1</td>
</tr>
<tr>
<td>Elkhart</td>
<td>36,078</td>
<td>76.4</td>
</tr>
<tr>
<td>DeKalb</td>
<td>33,985</td>
<td>91.8</td>
</tr>
</tbody>
</table>
## DEATH OF DOMESTIC ANIMALS.

Statement Showing the Death of Cattle and Hogs, and Sheep Killed by Dogs, in Indiana During the Year 1886.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>3,664</td>
<td>284</td>
<td>869</td>
<td>Madison</td>
<td>9,112</td>
<td>268</td>
<td>347</td>
</tr>
<tr>
<td>Allen</td>
<td>19,168</td>
<td>610</td>
<td>688</td>
<td>Marion</td>
<td>8,832</td>
<td>428</td>
<td>261</td>
</tr>
<tr>
<td>Bartholomew</td>
<td>4,103</td>
<td>639</td>
<td>2,751</td>
<td>Marshall</td>
<td>2,058</td>
<td>395</td>
<td>395</td>
</tr>
<tr>
<td>Benton</td>
<td>7,214</td>
<td>222</td>
<td>62</td>
<td>Martin</td>
<td>1,024</td>
<td>320</td>
<td>677</td>
</tr>
<tr>
<td>Blackford</td>
<td>667</td>
<td>121</td>
<td>239</td>
<td>Miami</td>
<td>4,717</td>
<td>510</td>
<td>196</td>
</tr>
<tr>
<td>Boone</td>
<td>7,304</td>
<td>371</td>
<td>413</td>
<td>Monroe</td>
<td>1,098</td>
<td>204</td>
<td>527</td>
</tr>
<tr>
<td>Brown</td>
<td>564</td>
<td>126</td>
<td>169</td>
<td>Montgomery</td>
<td>5,842</td>
<td>407</td>
<td>377</td>
</tr>
<tr>
<td>Carroll</td>
<td>7,103</td>
<td>977</td>
<td>587</td>
<td>Morgan</td>
<td>9,235</td>
<td>362</td>
<td>254</td>
</tr>
<tr>
<td>Cass</td>
<td>7,600</td>
<td>348</td>
<td>1,723</td>
<td>Newton</td>
<td>1,065</td>
<td>353</td>
<td>18</td>
</tr>
<tr>
<td>Clark</td>
<td>1,647</td>
<td>249</td>
<td>1,004</td>
<td>Noble</td>
<td>962</td>
<td>264</td>
<td>290</td>
</tr>
<tr>
<td>Clay</td>
<td>5,547</td>
<td>713</td>
<td>451</td>
<td>Ohio</td>
<td>121</td>
<td>43</td>
<td>33</td>
</tr>
<tr>
<td>Clinton</td>
<td>6,307</td>
<td>380</td>
<td>157</td>
<td>Orange</td>
<td>1,079</td>
<td>226</td>
<td>417</td>
</tr>
<tr>
<td>Crawford</td>
<td>477</td>
<td>144</td>
<td>225</td>
<td>Owen</td>
<td>1,820</td>
<td>312</td>
<td>335</td>
</tr>
<tr>
<td>Daviess</td>
<td>4,508</td>
<td>361</td>
<td>582</td>
<td>Parke</td>
<td>6,575</td>
<td>4,333</td>
<td>380</td>
</tr>
<tr>
<td>Dearborn</td>
<td>684</td>
<td>145</td>
<td>248</td>
<td>Perry</td>
<td>981</td>
<td>336</td>
<td>648</td>
</tr>
<tr>
<td>Decatur</td>
<td>4,789</td>
<td>266</td>
<td>506</td>
<td>Pike</td>
<td>4,614</td>
<td>269</td>
<td>359</td>
</tr>
<tr>
<td>Dekalb</td>
<td>2,120</td>
<td>276</td>
<td>985</td>
<td>Porter</td>
<td>1,893</td>
<td>235</td>
<td>258</td>
</tr>
<tr>
<td>Delaware</td>
<td>4,905</td>
<td>536</td>
<td>316</td>
<td>Posey</td>
<td>4,072</td>
<td>294</td>
<td>173</td>
</tr>
<tr>
<td>Dubois</td>
<td>3,789</td>
<td>566</td>
<td>355</td>
<td>Pulaski</td>
<td>830</td>
<td>472</td>
<td>265</td>
</tr>
<tr>
<td>Elkhart</td>
<td>1,223</td>
<td>185</td>
<td>184</td>
<td>Putnam</td>
<td>3,198</td>
<td>324</td>
<td>382</td>
</tr>
<tr>
<td>Fayette</td>
<td>11,527</td>
<td>134</td>
<td>213</td>
<td>Randolph</td>
<td>7,507</td>
<td>304</td>
<td>383</td>
</tr>
<tr>
<td>Floyd</td>
<td>166</td>
<td>69</td>
<td>63</td>
<td>Riple</td>
<td>792</td>
<td>150</td>
<td>412</td>
</tr>
<tr>
<td>Fountain</td>
<td>7,699</td>
<td>247</td>
<td>604</td>
<td>Rush</td>
<td>9,637</td>
<td>277</td>
<td>188</td>
</tr>
<tr>
<td>Franklin</td>
<td>2,824</td>
<td>295</td>
<td>451</td>
<td>Scott</td>
<td>396</td>
<td>124</td>
<td>614</td>
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<tr>
<td>Fulton</td>
<td>2,048</td>
<td>377</td>
<td>303</td>
<td>Shelby</td>
<td>7,366</td>
<td>280</td>
<td>194</td>
</tr>
<tr>
<td>Gibson</td>
<td>22,191</td>
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<td>460</td>
<td>Spencer</td>
<td>1,826</td>
<td>374</td>
<td>349</td>
</tr>
<tr>
<td>Grant</td>
<td>12,158</td>
<td>413</td>
<td>349</td>
<td>Starke</td>
<td>377</td>
<td>200</td>
<td>265</td>
</tr>
<tr>
<td>Greene</td>
<td>5,655</td>
<td>627</td>
<td>558</td>
<td>St. Joseph</td>
<td>1,914</td>
<td>313</td>
<td>374</td>
</tr>
<tr>
<td>Hamilton</td>
<td>9,583</td>
<td>244</td>
<td>313</td>
<td>Steuben</td>
<td>640</td>
<td>100</td>
<td>139</td>
</tr>
<tr>
<td>Hancock</td>
<td>4,560</td>
<td>320</td>
<td>275</td>
<td>Sullivan</td>
<td>11,116</td>
<td>374</td>
<td>480</td>
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<tr>
<td>Harrison</td>
<td>3,434</td>
<td>306</td>
<td>574</td>
<td>Switzerland</td>
<td>113</td>
<td>92</td>
<td>196</td>
</tr>
<tr>
<td>Hendricks</td>
<td>6,780</td>
<td>259</td>
<td>307</td>
<td>Tippecanoe</td>
<td>9,178</td>
<td>350</td>
<td>279</td>
</tr>
<tr>
<td>Henry</td>
<td>6,015</td>
<td>433</td>
<td>746</td>
<td>Tipton</td>
<td>7,529</td>
<td>568</td>
<td>180</td>
</tr>
<tr>
<td>Howard</td>
<td>4,952</td>
<td>138</td>
<td>199</td>
<td>Union</td>
<td>2,887</td>
<td>89</td>
<td>114</td>
</tr>
<tr>
<td>Huntington</td>
<td>4,139</td>
<td>905</td>
<td>166</td>
<td>Vanderburgh</td>
<td>1,663</td>
<td>129</td>
<td>194</td>
</tr>
<tr>
<td>Jackson</td>
<td>4,412</td>
<td>374</td>
<td>448</td>
<td>Vermillion</td>
<td>6,438</td>
<td>687</td>
<td>283</td>
</tr>
<tr>
<td>Jasper</td>
<td>616</td>
<td>71</td>
<td>135</td>
<td>Vigo</td>
<td>11,228</td>
<td>310</td>
<td>425</td>
</tr>
<tr>
<td>Jay</td>
<td>3,655</td>
<td>277</td>
<td>567</td>
<td>Wabash</td>
<td>5,961</td>
<td>429</td>
<td>224</td>
</tr>
<tr>
<td>Jefferson</td>
<td>994</td>
<td>182</td>
<td>256</td>
<td>Warren</td>
<td>8,623</td>
<td>219</td>
<td>332</td>
</tr>
<tr>
<td>Jennings</td>
<td>1,176</td>
<td>285</td>
<td>266</td>
<td>Warrick</td>
<td>2,214</td>
<td>372</td>
<td>744</td>
</tr>
<tr>
<td>Johnson</td>
<td>10,762</td>
<td>238</td>
<td>140</td>
<td>Washington</td>
<td>2,756</td>
<td>168</td>
<td>371</td>
</tr>
<tr>
<td>Knox</td>
<td>8,539</td>
<td>493</td>
<td>133</td>
<td>Wayne</td>
<td>7,720</td>
<td>280</td>
<td>384</td>
</tr>
<tr>
<td>Kosciusko</td>
<td>1,329</td>
<td>306</td>
<td>848</td>
<td>Wells</td>
<td>4,032</td>
<td>364</td>
<td>368</td>
</tr>
<tr>
<td>Lagrange</td>
<td>999</td>
<td>132</td>
<td>315</td>
<td>White</td>
<td>797</td>
<td>1,128</td>
<td>350</td>
</tr>
<tr>
<td>Lake</td>
<td>858</td>
<td>399</td>
<td>565</td>
<td>Whitley</td>
<td>1,681</td>
<td>323</td>
<td>299</td>
</tr>
<tr>
<td>Laporte</td>
<td>2,543</td>
<td>596</td>
<td>286</td>
<td>Total</td>
<td>402,164</td>
<td>35,333</td>
<td>36,610</td>
</tr>
</tbody>
</table>

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AGRICULTURAL STATISTICS.

HORSES AND MULES.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No. Horses in State</th>
<th>Total No. Mules in State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>513,970</td>
<td>57,283</td>
</tr>
<tr>
<td>1885</td>
<td>512,394</td>
<td>57,739</td>
</tr>
<tr>
<td>1884</td>
<td>510,957</td>
<td>51,318</td>
</tr>
<tr>
<td>1883</td>
<td>485,739</td>
<td>47,977</td>
</tr>
<tr>
<td>1882</td>
<td>493,881</td>
<td>48,515</td>
</tr>
</tbody>
</table>

The counties having the largest number of horses and mules, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. Horses</th>
<th>County</th>
<th>No. Mules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>11,182</td>
<td>Marion</td>
<td>2,595</td>
</tr>
<tr>
<td>Morgan</td>
<td>9,704</td>
<td>Vanderburgh</td>
<td>2,509</td>
</tr>
<tr>
<td>Randolph</td>
<td>9,011</td>
<td>Posey</td>
<td>2,102</td>
</tr>
<tr>
<td>Tippecanoe</td>
<td>8,992</td>
<td>Jackson</td>
<td>1,774</td>
</tr>
<tr>
<td>Marion</td>
<td>8,893</td>
<td>Gibson</td>
<td>1,775</td>
</tr>
<tr>
<td>Wayne</td>
<td>8,778</td>
<td>Knox</td>
<td>1,534</td>
</tr>
</tbody>
</table>

Counties in the State having the largest number of horses according to area, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Horses</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morgan</td>
<td>9,704</td>
<td>23.4</td>
</tr>
<tr>
<td>Miami</td>
<td>8,758</td>
<td>22.8</td>
</tr>
<tr>
<td>Wayne</td>
<td>8,778</td>
<td>22.3</td>
</tr>
<tr>
<td>Marion</td>
<td>8,893</td>
<td>21.0</td>
</tr>
<tr>
<td>Johnson</td>
<td>6,514</td>
<td>20.8</td>
</tr>
</tbody>
</table>

Counties in the State having the largest number of mules according to area, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Mules</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanderburgh</td>
<td>2,509</td>
<td>10.4</td>
</tr>
<tr>
<td>Marion</td>
<td>2,585</td>
<td>6.1</td>
</tr>
<tr>
<td>Posey</td>
<td>2,102</td>
<td>5.0</td>
</tr>
<tr>
<td>Warrick</td>
<td>1,526</td>
<td>3.9</td>
</tr>
<tr>
<td>Gibson</td>
<td>1,755</td>
<td>3.7</td>
</tr>
</tbody>
</table>

The Year 1885.

The counties having the largest number of horses and mules, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>No. Horses</th>
<th>County</th>
<th>No. Mules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>14,146</td>
<td>Montgomery</td>
<td>4,414</td>
</tr>
<tr>
<td>Marion</td>
<td>10,220</td>
<td>Vanderburgh</td>
<td>2,436</td>
</tr>
<tr>
<td>Elkhart</td>
<td>9,612</td>
<td>Marion</td>
<td>2,061</td>
</tr>
<tr>
<td>Tippecanoe</td>
<td>9,404</td>
<td>Jackson</td>
<td>2,047</td>
</tr>
<tr>
<td>Montgomery</td>
<td>9,368</td>
<td>Posey</td>
<td>1,851</td>
</tr>
</tbody>
</table>
BOARD OF AGRICULTURE.

Counties in the State having the largest number of horses according to area, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Horses</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>14,146</td>
<td>35.4</td>
</tr>
<tr>
<td>Marion</td>
<td>10,220</td>
<td>24.3</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>7,795</td>
<td>23.6</td>
</tr>
<tr>
<td>Wayne</td>
<td>8,362</td>
<td>21.3</td>
</tr>
<tr>
<td>Elkhart</td>
<td>9,612</td>
<td>20.3</td>
</tr>
</tbody>
</table>

Counties in the State having the largest number of mules according to area, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>No. of Mules</th>
<th>No. to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanderburgh</td>
<td>2,486</td>
<td>10.1</td>
</tr>
<tr>
<td>Montgomery</td>
<td>4,414</td>
<td>8.7</td>
</tr>
<tr>
<td>Marion</td>
<td>2,061</td>
<td>4.9</td>
</tr>
<tr>
<td>Posey</td>
<td>1,851</td>
<td>4.4</td>
</tr>
<tr>
<td>Jackson</td>
<td>2,047</td>
<td>4.1</td>
</tr>
</tbody>
</table>

TIMBER LAND.

The total amount of newly cleared land brought under cultivation.

<table>
<thead>
<tr>
<th>Year</th>
<th>Newly Cleared, Timber Land.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acres.</td>
</tr>
<tr>
<td>1886</td>
<td>193,001</td>
</tr>
<tr>
<td>1885</td>
<td>144,189</td>
</tr>
<tr>
<td>1884</td>
<td>144,400</td>
</tr>
<tr>
<td>1883</td>
<td>175,961</td>
</tr>
<tr>
<td>1882</td>
<td>225,468</td>
</tr>
</tbody>
</table>

Counties in the State having the largest amount of timber land, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>No. Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison</td>
<td>92,179</td>
</tr>
<tr>
<td>Washington</td>
<td>85,863</td>
</tr>
<tr>
<td>Dubois</td>
<td>83,708</td>
</tr>
<tr>
<td>Allen</td>
<td>83,382</td>
</tr>
<tr>
<td>Jackson</td>
<td>80,536</td>
</tr>
</tbody>
</table>

Counties in the State bringing under cultivation the largest amount of newly cleared land, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greene</td>
<td>8,083</td>
</tr>
<tr>
<td>Marshall</td>
<td>6,504</td>
</tr>
<tr>
<td>Dekalb</td>
<td>5,619</td>
</tr>
<tr>
<td>Posey</td>
<td>5,019</td>
</tr>
<tr>
<td>Bartholomew</td>
<td>3,761</td>
</tr>
</tbody>
</table>

AGRICULTURAL STATISTICS.

Counties in the State bringing under cultivation the smallest amount of newly cleared land during 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>159</td>
</tr>
<tr>
<td>Union</td>
<td>337</td>
</tr>
<tr>
<td>Floyd</td>
<td>415</td>
</tr>
<tr>
<td>Fayette</td>
<td>548</td>
</tr>
<tr>
<td>Switzerland</td>
<td>650</td>
</tr>
</tbody>
</table>

The Year 1885.

Counties in the State having the largest amount of timber land:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison</td>
<td>99,995</td>
</tr>
<tr>
<td>Dubois</td>
<td>90,184</td>
</tr>
<tr>
<td>Washington</td>
<td>86,276</td>
</tr>
<tr>
<td>Allen</td>
<td>84,345</td>
</tr>
<tr>
<td>Jackson</td>
<td>80,591</td>
</tr>
</tbody>
</table>

Counties bringing under cultivation the largest amount of newly cleared land during 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greene</td>
<td>7,942</td>
</tr>
<tr>
<td>Carroll</td>
<td>4,917</td>
</tr>
<tr>
<td>Wells</td>
<td>3,262</td>
</tr>
<tr>
<td>Grant</td>
<td>2,894</td>
</tr>
<tr>
<td>Pulaski</td>
<td>2,800</td>
</tr>
</tbody>
</table>

Counties bringing under cultivation the smallest amount of newly cleared land during 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>189</td>
</tr>
<tr>
<td>Lake</td>
<td>278</td>
</tr>
<tr>
<td>Union</td>
<td>295</td>
</tr>
<tr>
<td>Dearborn</td>
<td>358</td>
</tr>
<tr>
<td>Scott</td>
<td>410</td>
</tr>
</tbody>
</table>

DRAINAGE IN THE STATE.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Rods of Drain Tile</th>
<th>Average No. of Rods to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>19,457,290</td>
<td>538</td>
</tr>
<tr>
<td>1885</td>
<td>17,161,085</td>
<td>475</td>
</tr>
<tr>
<td>1884</td>
<td>14,958,347</td>
<td>416</td>
</tr>
<tr>
<td>1883</td>
<td>11,487,814</td>
<td>319</td>
</tr>
<tr>
<td>1882</td>
<td>9,824,297</td>
<td>273</td>
</tr>
</tbody>
</table>
 Counties having the greatest total number of rods of tile, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Rods of Tile</th>
<th>Average No. of Rods to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinton</td>
<td>718,602</td>
<td>1761</td>
</tr>
<tr>
<td>Decatur</td>
<td>696,301</td>
<td>1871</td>
</tr>
<tr>
<td>Boone</td>
<td>665,410</td>
<td>1584</td>
</tr>
<tr>
<td>Randolph</td>
<td>665,308</td>
<td>1498</td>
</tr>
<tr>
<td>Grant</td>
<td>660,687</td>
<td>1580</td>
</tr>
</tbody>
</table>

Counties having the greatest amount of drain tile in use according to area, 1886:

<table>
<thead>
<tr>
<th>County</th>
<th>Rods of Drain Tile in Use</th>
<th>Average No. of Rods to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard</td>
<td>625,507</td>
<td>2120</td>
</tr>
<tr>
<td>Decatur</td>
<td>696,301</td>
<td>1871</td>
</tr>
<tr>
<td>Clinton</td>
<td>718,602</td>
<td>1761</td>
</tr>
<tr>
<td>Boone</td>
<td>665,410</td>
<td>1584</td>
</tr>
<tr>
<td>Grant</td>
<td>660,687</td>
<td>1580</td>
</tr>
</tbody>
</table>

The Year 1885.

Counties having the greatest total number of rods of tile, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Rods of Tile</th>
<th>Average No. of Rods to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wabash</td>
<td>640,189</td>
<td>1502</td>
</tr>
<tr>
<td>Grant</td>
<td>637,027</td>
<td>1524</td>
</tr>
<tr>
<td>Marion</td>
<td>629,665</td>
<td>1499</td>
</tr>
<tr>
<td>Boone</td>
<td>623,892</td>
<td>1485</td>
</tr>
<tr>
<td>Randolph</td>
<td>617,092</td>
<td>1389</td>
</tr>
</tbody>
</table>

Counties having the greatest amount of drain tile in use according to area, 1885:

<table>
<thead>
<tr>
<th>County</th>
<th>Rods of Drain Tile in Use</th>
<th>Average No. of Rods to Sq. Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard</td>
<td>557,122</td>
<td>1888</td>
</tr>
<tr>
<td>Hancock</td>
<td>559,823</td>
<td>1822</td>
</tr>
<tr>
<td>Decatur</td>
<td>616,454</td>
<td>1657</td>
</tr>
<tr>
<td>Grant</td>
<td>637,027</td>
<td>1624</td>
</tr>
<tr>
<td>Wabash</td>
<td>640,189</td>
<td>1502</td>
</tr>
</tbody>
</table>

COAL.

A comparative statement of the coal mined in the State for the past five years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Production in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886</td>
<td>3,000,000</td>
</tr>
<tr>
<td>1885</td>
<td>2,375,000</td>
</tr>
<tr>
<td>1884</td>
<td>2,280,000</td>
</tr>
<tr>
<td>1883</td>
<td>2,560,000</td>
</tr>
<tr>
<td>1882</td>
<td>1,190,000</td>
</tr>
</tbody>
</table>


The coal-producing counties of the State are:

<table>
<thead>
<tr>
<th>COUNTIES</th>
<th>1886.</th>
<th>1885.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Mines</td>
<td>Number of Employes</td>
</tr>
<tr>
<td>Clay</td>
<td>33</td>
<td>2,600</td>
</tr>
<tr>
<td>Daviess</td>
<td>14</td>
<td>530</td>
</tr>
<tr>
<td>Dubois</td>
<td>11</td>
<td>55</td>
</tr>
<tr>
<td>Fountain</td>
<td>13</td>
<td>220</td>
</tr>
<tr>
<td>Greene</td>
<td>8</td>
<td>200</td>
</tr>
<tr>
<td>Gibson</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Knox</td>
<td>3</td>
<td>92</td>
</tr>
<tr>
<td>Martin</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Owen</td>
<td>6</td>
<td>135</td>
</tr>
<tr>
<td>Perry</td>
<td>16</td>
<td>140</td>
</tr>
<tr>
<td>Parke</td>
<td>15</td>
<td>650</td>
</tr>
<tr>
<td>Pike</td>
<td>17</td>
<td>239</td>
</tr>
<tr>
<td>Sullivan</td>
<td>12</td>
<td>325</td>
</tr>
<tr>
<td>Spencer</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Vigo</td>
<td>14</td>
<td>475</td>
</tr>
<tr>
<td>Vermillion</td>
<td>4</td>
<td>290</td>
</tr>
<tr>
<td>Vanderburgh</td>
<td>5</td>
<td>240</td>
</tr>
<tr>
<td>Warrick</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>Warren</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>208</td>
<td>6,406</td>
</tr>
</tbody>
</table>
STONE.

The stone-producing counties of the State quarried during the year 1886 of sand and limestone as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Cubic Feet</th>
<th>County</th>
<th>Cubic Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>29,507</td>
<td>Miami</td>
<td>16,500</td>
</tr>
<tr>
<td>Blackford</td>
<td>157,500</td>
<td>Monroe</td>
<td>139,000</td>
</tr>
<tr>
<td>Cass.</td>
<td>73,343</td>
<td>Montgomery</td>
<td>546</td>
</tr>
<tr>
<td>Clark</td>
<td>26,700</td>
<td>Morgan</td>
<td>2,920</td>
</tr>
<tr>
<td>Clay</td>
<td>5,003</td>
<td>Orange</td>
<td>100,450</td>
</tr>
<tr>
<td>Daviess</td>
<td>1,385</td>
<td>Parke</td>
<td>5,800</td>
</tr>
<tr>
<td>Decatur</td>
<td>221,000</td>
<td>Perry</td>
<td>17,150</td>
</tr>
<tr>
<td>Delaware</td>
<td>98,784</td>
<td>Pike</td>
<td>2,456</td>
</tr>
<tr>
<td>Fayette</td>
<td>8,268</td>
<td>Posey</td>
<td>500</td>
</tr>
<tr>
<td>Floyd.</td>
<td>47,500</td>
<td>Putnam</td>
<td>473,620</td>
</tr>
<tr>
<td>Fountain</td>
<td>2,400</td>
<td>Randolph</td>
<td>14,106</td>
</tr>
<tr>
<td>Franklin</td>
<td>201,300</td>
<td>Ripley</td>
<td>1,500</td>
</tr>
<tr>
<td>Gibson</td>
<td>302,100</td>
<td>Shelby</td>
<td>223,680</td>
</tr>
<tr>
<td>Grant.</td>
<td>158,802</td>
<td>Spencer</td>
<td>44,391</td>
</tr>
<tr>
<td>Greene</td>
<td>445</td>
<td>Vanderburgh</td>
<td>1,071,195</td>
</tr>
<tr>
<td>Harrison</td>
<td>47,850</td>
<td>Vermillion</td>
<td>8,805</td>
</tr>
<tr>
<td>Hendricks</td>
<td>3,500</td>
<td>Vigo</td>
<td>1,350</td>
</tr>
<tr>
<td>Henry</td>
<td>72</td>
<td>Wabash</td>
<td>9,304</td>
</tr>
<tr>
<td>Huntington</td>
<td>727,850</td>
<td>Warren</td>
<td>1,006,000</td>
</tr>
<tr>
<td>Jackson</td>
<td>15,000</td>
<td>Warrick</td>
<td>1,257</td>
</tr>
<tr>
<td>Jennings</td>
<td>125,054</td>
<td>Washington</td>
<td>352,000</td>
</tr>
<tr>
<td>Lawrence</td>
<td>252,000</td>
<td>Wayne</td>
<td>13,905</td>
</tr>
<tr>
<td>Madison</td>
<td>6,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marion</td>
<td>11,303</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin</td>
<td>2,000</td>
<td></td>
<td></td>
</tr>
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</table>

**Total** 6,030,000
INDIANA SHORTHORN BREEDERS.

The State Shorthorn Breeders' Association met in the rooms of the Board of Agriculture on Wednesday, January 26, 1887, at 1:30 o'clock P. M., with President Robert Mitchell, of Princeton, Ind., in the chair. Sixty-seven members responded to the roll call. Vice President Lockridge was called to the chair, and the President delivered his annual address, as follows:

PRESIDENT'S ADDRESS.

Gentlemen of the State Association of Shorthorn Breeders:

Permit me to extend to you my congratulation on account of the favorable auspices under which we assemble, the occasion being the fifteenth annual meeting of the Indiana Shorthorn Breeders' Association. I should do violence to my convictions and to your comprehension of the great interest this Association seeks to promote if I were to intimate that personal aggrandizement is the highest motive that prompts our action. I prefer to assign to each member of this Association a higher standard of endeavor and a broader recognition of the object we have in view. Admitting all that can be said of self and selfishness, which enters more or less prominently into all business affairs, it would be scarcely less than an insult to your intelligence and character as citizens to intimate that you are not animated, in a large degree, by those higher motives which comprehend the welfare of the State and the prosperity of all the people. The meat question, as well as the bread question, is up for debate in Indiana, and throughout all this broad land. It is a vital question—a question which this Association is seeking assiduously to solve in the interest of the people of Indiana. In this opening address, which precedent requires me to make, you will permit me to say that this Association is a total stranger to envy, when considering what other similar associations are doing to improve the breeds of cattle in Indiana. We believe there is room enough for all. We know there is room enough for Shorthorn breeders, as we are assured that it is not all occupied. As we read of the efforts made by those who favor the Hereford, the Polled Aberdeen Angus, the Devon, the Jersey, the Holstein and the Ayrshire, to extend the area of their conquest, we are in nowise disconcerted. In the past the Shorthorns have maintained their prominence, their advanced posi-
tion, their hold upon intelligent farmers and breeders, and if the efforts of our neighbors to achieve success shall stimulate us to greater zeal, more unity of purpose and action, great good, and no evil at all, can possibly result. The one great purpose of this Association is to inform the breeders of cattle in Indiana. It would be difficult for me to exaggerate its importance. It relates to vital and economic statistics, health and revenue. Hence the cattle question is fundamental, bed-rock, one of the questions which enters into the discussion of political economy, a question worthy of the broadest statesmanship. Indeed, the time has come when the man who is not thoroughly posted on the cattle question, whatever else may be said of him, is something less than a statesman.

As cattle breeders, it is becoming that we should, in all proper ways, seek to magnify the business in which we are engaged, and we have a right to use such data as comes to us under the seal of high authority. By consulting the census reports of 1880 I find Indiana credited with 494,944 milch cows and 864,846 other cattle, not including working oxen; a total of 1,359,790 head of cattle. Other estimates place the cows of Indiana at 600,000, but for my purpose the census figure will answer any demand. For the purpose of easy calculation, I will say there are 500,000 milch cows in Indiana of all breeds. For the purpose of illustration, I will assume that 25 per cent. are Shorthorns and their grades, and 75 per cent. scrubs. This does not include other pure-bred cattle. This would give 125,000 Shorthorns and 375,000 scrubs. I will suppose Shorthorns to be worth $100 a head and scrubs $30 a head. In this case we have values as follows: 125,000 Shorthorn cows at $100 each, $12,500,000; 375,000 scrubs at $30 each, $11,250,000. Total value, $23,750,000.

Now, if the 500,000 cows were all Shorthorns, they would be worth at $100 each $50,000,000, which would be a clear gain to the State of $26,250,000. In round numbers I have said there were in the State 900,000 cattle other than milch cows and working oxen. Adhering to the same per cent., as in the case of cows, I assume that these 900,000 cattle are steers ready for market, that 25 per cent. of them, 225,000 head, are Shorthorns, averaging 1,500 pounds each, and worth in the market 5¼ cents per pound, or $78.75 each; that 675,000 head are scrubs averaging 1,200 pounds each, and worth in the market 4½ cents per pound or $51.00 each.

These preliminaries being settled, we have the following result:

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>225 Shorthorn steers at $78.75 per head</td>
<td>$17,723,250</td>
</tr>
<tr>
<td>675,000 scrub steers at $51 per head</td>
<td>$34,425,000</td>
</tr>
<tr>
<td><strong>Total value</strong></td>
<td><strong>$52,148,250</strong></td>
</tr>
</tbody>
</table>

But supposing these steers were all Shorthorns, the result would be 900,000 Shorthorn steers at $78.75, $70,875,000, a gain of $18,726,750. Now, to this amount you add the gain as I have stated in having all Shorthorn cows, $26,250,000, the total gain to the State would be $44,978,750, and the cattle of the State would have a value other than working oxen of $120,875,000.

You will understand, gentlemen, that I have used this figure to illustrate the idea of the great advantage which would certainly accrue to the State if all the
cattle were Shorthorns instead of scubs. As to the number of cattle and prices I am confident I am correct, but in regard to the number of marketable steers there are in the State, it is assumed for the purpose of illustration. Should the breeders of any other cattle object to my mention of Shorthorn, they are at liberty to insert their favorite breed, my object being to demonstrate that Indiana would be immensely benefited by the disappearance of scrub stock from the farms.

But, gentlemen, in breeding cattle for the block it is of first importance that the question of time should be considered, since in no other branch of agricultural enterprise is the question of time at the command of the farmer. We know the time required for the maturity of crops. Nature has fixed the limit, and no change in varieties of seed can materially change the law, but this thing of breeding cattle for the block permits farmers to consider the question of time, and since "time is money," and preeminently so in cattle breeding, I feel confident farmers generally will make special note of facts bearing directly upon the subject.

A Shorthorn steer properly cared for can be made to weigh 1,500 pounds in three years, while a scrub will require five years to secure 1,200 pounds, and as a result the Shorthorn gains 500 pounds annually and the scrub 240 pounds annually. Estimating Shorthorns at 54 cents a pound, the gain is annually $26.25, and estimating the scrub at 41 cents a pound, the gain is annually $10.60, or $15.65 gain in favor of the Shorthorn. But let us note how the case stands with both at the end of the year. I have stated that the Shorthorn gains 500 pounds a year, hence in the three years it weighs 1,500 pounds and is worth $78.75; the scrub gains 240 pounds a year, and in three years weighs 720 pounds and is worth $30.60, hence the difference in the value of the steers at the expiration of three years is $48.15 in favor of the Shorthorn. In other words, the Shorthorn at the expiration of three years is worth twice as much as the scrub and $17.55 over.

Now, it must not be understood that I give these figures as actual tests, but rather as approximates based upon widely credited information, and as supplying data for other calculations which shall involve particulars to be worked out with greater care. Farmers who will take the trouble to investigate the subject will, I am confident, find that, as a general proposition, I have not misled them nor sought to impose upon their credulity. But there is another question connected with the subject which I deem it important in this connection to introduce, which is the milking qualities of Shorthorn cows. I have given the cows as noted in the census of 1880, showing that at that time Indiana had 494,944 milch cows, and that they produced during the census year 6,723,840 gallons of milk, an average of 7.1 gallons per cow.

You will see at once that such statistics are practically valueless, since 100,000 cows, producing two gallons of milk a day, would yield as the sum total for a year of 365 days 73,000,000 gallons of milk. Dismissing, therefore, such figures as of no practical value to any one, we can suppose a case which shall be within the limit of prudence, and, as a consequence, of some value in discussing the milk question. We will suppose that Indiana had 500,000 Shorthorn cows, one-half of which, 250,000 Shorthorns, were average milkers. The question here arises, What is an average Shorthorn milker? Place it low, and say two gallons a day for 300-
days in a year, the result would be productive of 150,000,000 gallons of milk, or about one-sixth of the milk produced in the whole country in 1880 according to the last census report.

Manifestly the milk question is of vast importance, as it relates directly to the butter and cheese question. Shorthorn cows are known to be good milkers, good butter producers, and at the same time the best beef producers, and these facts properly set forth and widely published would convince the farmers of Indiana that for a general utility cow the Shorthorns occupy a position from which they cannot be dislodged.

I desire to suggest to the association the great importance of unity of action on the part of the Shorthorn breeders of Indiana. What we want is the best results. We not only want accepted standards of excellence, but we want to know the method by which such standard can be reached in the shortest practicable time. If the purpose be beef, we should bring our experience and our information to bear directly upon that proposition. Let the facts be clearly stated and intelligently arranged so that they will be of easy comprehension by the average farmer. If the purpose be milk, the process by which the largest product can be secured should be sharply outlined, and if the idea be to have cows designated general purpose cows—that is to say, cows that will bring a calf every year—produce the largest quantity of milk, and finally produce the largest amount of meat, the best method known to produce such cows should be prominently incorporated into our proceedings and our books of reference.

With no purpose to excite controversy, the statement that Shorthorns stand first as beef-producing animals should have special prominence. But Shorthorn breeders must recognize the fact that the days of four-year-old steers have gone by, and that the demand now is for early-matured beef, as it is the most profitable for the beef producers, as demonstrated by experience and the tests made at the Fat-Stock Shows at Chicago and elsewhere. I feel assured Shorthorn breeders will readily accept the inevitable, and by so doing, solve the problem of putting upon the plate of every man, woman and child in America good beef, and not only in America but in Europe as well.

Statistics showing the annual product of beef in this country would be of great value. No such figures are at hand, at least I have not been able to find them. In the absence of accepted authority, I am left to conjecture. In all such cases we are warranted in making judicious estimates for the purpose of arriving at rational conclusions. It is generally conceded that the United States have now a population of 60,000,000. Suppose we estimate the consumption of beef at four ounces per capita each day of the year; that would place the daily consumption at 15,000,000 pounds, or 5,475,000,000 pounds a year.

Now, to supply the demand would require the slaughter of 6,843,750 cattle, weighing 800 pounds net each. But I suppose that the average weight of cattle slaughtered in the United States would not reach over 500 pounds net, in which case the requirement would be for about 11,000,000 annually. With regard to the amount of beef consumed, opinion will doubtless differ, but my purpose is simply to arrive at such approximation as will stimulate inquiry and demonstrate the
vastness of the subject financially. Assuming that my figures are reasonable approximations, it will be found that the beef annually consumed in the United States represents a cost value of $440,000,000.

But this estimate would be incomplete if reference to the exportation of cattle and beef were omitted. I have not at hand the latest returns, but in 1885 the report gives the figure as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle, 135,805 head; value</td>
<td></td>
<td>$12,908,145</td>
</tr>
<tr>
<td>Beef consumed (weight not given)</td>
<td></td>
<td>4,214,720</td>
</tr>
<tr>
<td>Beef, fresh, 115,780,830 pounds</td>
<td></td>
<td>11,199,481</td>
</tr>
<tr>
<td>Beef, salt, 48,143,705 pounds.</td>
<td></td>
<td>3,619,145</td>
</tr>
<tr>
<td>Beef, other cure, 572,427 pounds</td>
<td></td>
<td>73,895</td>
</tr>
<tr>
<td><strong>Total value</strong></td>
<td></td>
<td><strong>$32,015,386</strong></td>
</tr>
</tbody>
</table>

If to this amount is added the estimated value of beef consumed at home—$440,000,000—we have a grand aggregate of $472,015,386 as the annual beef business of the country, and requiring annually 11,000,000 cattle to meet the demand. In treating this branch of the subject, I think that for the purpose of making appeals to Legislatures and to Congress for protection against cattle diseases, we should have some prudent estimate of the value of the cattle of the country. How can we arrive at such an estimate? By consulting the census report of 1880 I find that the total number of cattle in the country at that time was 35,925,511 head. I think it safe to say there are now in the country 40,000,000 head. Would it be prudent to estimate their value at $20 a head? If so, then the cattle represent a cash value of $800,000,000; of this number I estimate Indiana has 1,500,000 head, which, at $20 a head, represents a value of $30,000,000. With such figures before us, what, I ask, is our duty in seeking to protect cattle from contagious diseases? The facts should be brought to the attention of the Indiana Legislature, now in session, and the urgent need for stringent laws should be constantly set forth until protection is secured. Indiana, by her geographical centrality, is constantly exposed to great calamities in the loss of her cattle by contagious diseases, and upon this subject I request special action be taken. I also invite the attention of this Association to the fact that the slaughtering business of the country is rapidly concentrating in the hands of a few rich firms, and as this centralization proceeds, competition, always and everywhere the life of trade, disappears, until, at last, combination becomes easy, and when the few large concerns combine, as they most certainly will, they will dictate prices to the great detriment of the producers of cattle throughout the country.

The power now in the hands of a few cattle men at Chicago is immense; probably twelve men can meet at that great mart and dictate their own prices for the beef product marketed there. The time was when the butchers were in the market as beef buyers; not so now; these immense slaughtering establishments have silenced the butchers as buyers of beef cattle, and when the butcher wants beef for his use he must buy his carcasses of these slaughtering houses, and I may here remark that the same practice prevails to a limited extent in Indianapolis.

23—Bd. of Agr.
To what extent this monopolizing of the slaughtering business has already taken place, reference may be had to the transaction of Armour & Co., of Chicago, which are startling and suggestive. Manifestly the time has arrived for the better and more thorough organization of the beef producers of the Ohio Valley, and I am persuaded that the time has come for such organization, and that the work can not be postponed without jeopardizing our interests.

Feeling profoundly interested in the cattle interests of Indiana and of the country, I have detained you longer than I anticipated, and I close by expressing the hope that the proceedings of this meeting of our association will be fruitful of large and beneficial results.

J. Strange, S. D. Butts and J. N. Sankey were appointed to review the President's recommendations and report.

Secretary W. J. Quick submitted his annual report, as follows:

SECRETARY'S REPORT.

At the time of my acceptance of your books, January 27, 1885, there were then enrolled sixty-four members, of these, many have fallen out of the ranks because of their retirement from the business, moving from our State, or neglect, and some have departed this life, and their herds have been sold. Of the sixty-four, belonging before 1885, four only have paid dues for 1885, which were due at that meeting. Thirty-four, including these four, have paid dues for 1886, at or since the 1886 meeting last year, and the remainder, thirty in number, are delinquent, and properly are no longer in good standing.

Since taking charge of your books I have received membership fees of ninety new members, making the total enrollment of this Association to this date 164.

I would state further, in explaining the delinquency of these old members, that in the years 1883 and 1884, the Association rescinded the dues, as the treasury was at that time rich enough to pay all necessary expenses of the Association. This has probably caused them to suppose they never again would have to pay dues, judging from the small number who paid for 1885, and thirty-four of the sixty-four who paid for 1886.

Since publishing the State Directory will take more funds than we now have, your Secretary would recommend that these back dues be collected at once. This, with dues of the past year, will amount to only $1.

Your Secretary would further report that he has necessarily been compelled to keep the finances of the Association and the State Directory, now undergoing compilation, together, since it would be too complicated to attempt to keep separate the stationery, postage, etc., of the two.

The funds received from dues, membership fees, Directory fees, etc., since the last Treasurer's report amount to $322.85.
Disbursements, as per Secretary's cash book, including $30 paid

Treasurer ........................................ $165.80
Leaving a balance of .................................. 157.05
Of the amount received Directory fees amount to ............... $220.00
Membership fees ................................ 78.00
Dues, list of members for periodicals, etc ................ 24.85

Total ........................................ $322.85

Mr. E. S. Frazee, Treasurer of the Association, submitted his report as follows:

Indiana Shorthorn Breeders' Association in account with E. S. Frazee, Treasurer:

1886.
January 27, by cash balance on hand ................ $19.75
January 27, by cash to Walter J. Quick ............ 30.00

Total ........................................ $49.75
January 27, to W. J. Quick, as per bill, stationery and postage ................ $6.95
January 27, to W. J. Quick, as per bill, stenographer ................ 10.00

Total ........................................ $16.95
Balance on hand ................................ $32.80

The reports of the Secretary and Treasurer were referred to the Committee on Finance.

On motion, J. N. Sankey, W. F. Christian and H. G. C. Balls were appointed on Finance.

Hon. Thomas Nelson, of Bloomingdale, read the following paper on

THE DIFFICULTIES TO BE SURMOUNTED BY BEGINNERS.

In the question assigned me, "The difficulties to be surmounted by a new beginner and how to do it," I shall assume that the beginner really means a new beginner, and not one that has been in the habit of attending meetings of Shorthorn associations, or in the habit of reading regularly works on Shorthorn literature, as such an one could not properly be called a new beginner, but of one whose attention has first been called to Shorthorns by seeing them exhibited at the different fairs of the locality in which he lives, or has lived, or perchance he may have seen them exhibited at some of our State Fairs, as most of the new beginners have attended some of the fairs where Shorthorns have been on exhibition, before they become fully imbued with the notion that they will raise Shorthorns.
The beginner makes up his mind to engage in the business, and as a preliminary move he pays a visit to a Mr. A, who has long had the reputation of being a successful breeder of Shorthorns, and was formerly an exhibitor at the different fairs, but, having enough reputation in that line, is resting on his laurels and devoting his time and energies to breeding cattle for sale at public or private sale, as the case may be. Our beginner is shown through the herd, and is disappointed, for he does not find the uniformity in this breeding herd that he has noticed in the show herd at the fairs. He asks no questions as to the breeding of this or that animal; in fact, has not yet learned that there are families or tribes of Shorthorn cattle. This is the first difficulty that he has encountered, but, not wishing to expose his ignorance, he goes his way; but in the meantime he has heard of a live-stock paper; he procures a copy, and one of the first things he notices is an advertisement of Shorthorns at public sale. He attends the sale, finds the stock in good shape, the auctioneer loud in his praises of the good qualities of the cattle to be sold, and our beginner secures a catalogue, an article of whose value he as yet has no conception, further than the numbering of the cattle to be sold. He selects animals to his liking and makes a low bid, and is surprised that the animal is knocked off to him, when others are more eagerly sought for and command high prices. Thus is another difficulty presented to the beginner, of which he has no conception, as the value of a pedigree is to him as yet unknown; but one thing he is solid on, and that is color; he will have nothing to do with anything but a red animal. Why must he have a red? Because those on exhibition at the fairs are red, and our beginners are the first to adopt red and the last to see any merit in any other color. But revolutions never go backward, and our beginner has become a reader of livestock papers; he notices among the advertisements one of a book of unfashionable pedigrees. What can that be? He purchases it, and in its perusal he finds that pedigrees of the Shorthorns he has purchased are of that kind called unfashionable. Thus is another difficulty presented, but our beginner has not as yet fully "caught on" to the mistake he has made until he places on sale some of his cattle and finds out that he can not realize on them what he had expected; and then he begins to find out that there are families or tribes of Shorthorns. Another difficulty is presented when he begins to study pedigree, as he is unable to see why a Red Rose by Ernesty is not as good as a Rose of Sharon, or a Mrs. Motte as good as Mazurka, as they in each case are as good individually. But our new beginner is bent on making the raising of Shorthorns a success, and after a great many failures and consequent losses he emerges—through the aid of the livestock papers with which he has supplied himself—from the chaotic darkness by which he has been surrounded, into a full-fledged breeder, trained and educated in all the various ways that the successful business man adopts, and relies on the pedigrees and individual forms of his herd, and does not regard the color question nearly so essential as good pedigree and good individuality. The time has been when there was some excuse for the beginner being led into the troubles here delineated, but that day has, happily, passed, and the young man of our day can start right and make but few, if any, mistakes; and this brings me to the last part of the question, "How to do it."
We will go back to the visit of new beginner to Mr. A’s herd, after an inspection of the herd.

Let our beginner go to Mr. A and say, “I have come to make a few inquiries in regard to the breeding of Shorthorns, as I have about concluded to engage in that business. I do not understand it, and have come to you for advice, and want to put myself under your tutorship, and by so doing start right.” “Well,” says Mr. A, “I shall take pleasure in giving a new beginner advice. I have had considerable experience, and have ‘been through the mill.’ In the first place, take a good livestock paper, watch its columns closely, study well into the form and make-up of first-class Shorthorns, and examine carefully into the merits of the different pedigrees of the different families, or tribes, of Shorthorns.”

The new beginner is advised to read and carefully analyze pedigrees in herd books and such standard works as his case needs, and study carefully any and all points presented; and by these means, before making any purchases, he has become acquainted with the commercial value of this and that pedigree, and, extending thanks to Mr. A, he is soon on the highway for a successful breeder of Shorthorns; and, though he may prefer to raise red Shorthorns to suit the fancy of prospective purchasers, he will not throw away a roan Rose of Sharon, or a roan Kirklevington, or spotted Mazurka, or Cruikshank for a red of the plainer sort.

Thus can the new beginner of to-day start right and make few mistakes, always provided he has the natural inclination toward acquiring knowledge pertaining to the raising of Shorthorns, for it is folly for a person not adapted by nature to studying the habits of livestock to ever make a success in that line, and my remarks are not intended to be of any benefit to such as those.

My *beau ideal* new beginner is one who by nature has the instinct to discern the whys and the wherefores when they are presented of the business in which he proposes to engage. These, Mr. President, are a few of the reasons I assign for the new beginner to accept as a safe beginning toward overcoming the obstacles that beset him in the raising of Shorthorns.

**DISCUSSION.**

*Mr. Folsom, Indianapolis.* Mr. Nelson in pointing out the mistakes of beginners says he is not sure in regard to color, meaning select color. I would ask Mr. Nelson if he would advise to follow in that line or would he permit to select the name without regard to color?

*Mr. Nelson.* I might have been misunderstood. My advice to the beginner is not to pay so much attention to the color, but we will not throw away Rose of Sharon, Mazurka or Kirklevington. I would advise him to take the animal on pedigree, without regard to color. The day is coming when you will not pay so much attention to color as now.

*Mr. Folsom.* The time is coming when the foolish craze for color will be set aside. The American people go to extremes. I think the roans will be in favor as much as the reds. I do not know why the reds should be preferred instead of the roans. If Mr. Nelson should come to me, and I was a breeder of Hereford cattle, I have my doubts if he would accept a red. He would probably want something that had a white face, that is what he would hunt for. He knows that is
the sign of a Hereford, and shows pure breeding. He thinks red in the Hereford might have some bad blood. If he wanted to buy a Polled Angus, he would want black on the same principle of the White-face in the Hereford. This is the true mark of the Polled Angus; he would think something was wrong if the hide was red. The Holstein is black and white. In buying Shorthorns the majority of buyers want red. We have no account of an improvement as roans except in the Shorthorn; why should we reject that which we know to be pure blood and breeding, and take that we know nothing about? Surely if there is any alloy, it can be somewhat under the red coat. Who has made this fashion? Was it not this new beginner? His first idea is to size up the animal; he says: "There is a good animal." But he don't want it, because it is not fashionable. It may be a nice picture, but here comes in a nice red. He buys that; he is starting a herd of reds and discarding fine animals of the roan color, and taking the red. Why not let the man take the animal he wants? The roan is as pure bred as the red. Why not admire the red or roan in the Polled Angus? You might justly prize the red or roan in the Shorthorn. The highest priced Shorthorn bull ever sold was a roan, and so was the highest priced cow. The highest price, Duke of Gifford, was a roan. So we can trace back all the lines of breeding. All the prominent cows and bulls laid this foundation of stock. As an improved race of cattle in the Shorthorns we find roans and reds.

*Mr. Sedgwick, Wayne County.* I have been in the Shorthorn business for fifteen years. There are some points in this paper that attract my attention. One was to go to some breeder of note and get his advice first. If a man comes to you seeking advice, always tell the truth. [A voice, "We all do it."] [Laughter.] I have known a few men in the business who always kept a few of the plainer bred ones in good flesh and blanketted—kept them curried down smooth—and when a new beginner came these were the ones shown and talked of most, and if sold to the buyer he was sold in his purchase. Another point in reference to color, my friend Folsom has hit upon in breeding Shorthorns. We have to breed color to suit the purchasers. The beginner, in that respect, if he is going to suit his section of country, must show some attention to color. There is another thing a beginner has to learn; that is, all of us look too much to flesh. Flesh covers up many weak points in cattle. The beginner has to learn to judge from flesh and quality of shape. I was sold once that way myself. Flesh is good evidence of the quality of that individual animal, but is no evidence of the blood or good breeding of the animal. This is one of the greatest difficulties the beginner has to contend with.

*Mr. Curtain, Howard County.* There are many new beginners who buy Shorthorns and starve them to death. If you buy anything that is recorded in the Herd Book, why should we seek where they are in the hands of a few men? All those high priced cattle in Kentucky sold for from a thousand to twelve hundred dollars. Let a new beginner buy a Mazurka at a thousand dollars, he will go down, unless he feeds well. I want one that is well made, good heart, full, with a straight back, heavy quarters and breast, and I don't care where you get it, you can make money out of it if you feed well. Whenever he buys high priced cattle he runs a risk. There is one point especially I wish to impress on your minds—that is, feed makes cattle.
SHORTHORN BREEDERS.

Albert Mariott, Wayne County. I have been breeding for several years, though not so long as many others. When I selected my herd I sought advice from Mr. Meredith. I bought my first calf of General Meredith in 1874. It was the first Shorthorn I ever owned. My sales of Shorthorns have been reasonably good. Some say they can not do anything for several years until they get acquainted with the whole county. That is a mistake. A man who goes in business in the right way his sales are generally good. I, however, went into the business too strong, buying eighteen head the first year, which cost me $400 a piece. I would not recommend young breeders going in so heavy. I have had good sales and sold some at $1,000.

G. W. Thomas, Rush County. There has been something said about fashion, regarding color. There is a new fashion springing up in some sections of the country, especially in the West, upon which I would like to hear some older breeders express an opinion. It is that of dehorning cattle. It is a course pursued among some Western cattle men. They tie the steer up and saw the horns off close to the head. I want to know if it is best to breed cattle without horns, or is it safe to cut them off? This is something that would interfere with new beginners as well as older breeders. I think it would be proper to speak on this now.

C. A. Howland, Marion County. In speaking of fashion, I would like some of you to tell me who started this fashion?

E. S. Frazee, Rush County. Colonel Sanders, of Kentucky, in 1830, sent for the first Shorthorn cattle introduced west of the Allegheny Mountains. Never buy a Shorthorn from a man unless he is reliable and knows something about pedigree.

Mr. Cotton, Shelby County. There was a thought or two in Mr. Nelson's paper which struck me forcibly. It is said as a breeder I am color blind; that is, if an animal is red that takes me. Now, gentlemen, there is a great deal in the color. My friend Frazee's advice to the beginner was to go to some reliable man. A beginner may perhaps inherit some capital from his parents. His inclination is to have some improved livestock. His fancy may be that the Shorthorn is the breed to invest in. He is able to buy an extensive herd to start with. He buys that herd with care, and it is red cattle. Why does he do it? It is because it is in striking contrast with the green pastures. It is a beautiful scene to behold a herd of red cattle on a green pasture. In buying a horse you take color. Who objects to a brown horse? No man of fancy. The beginner starts with a good herd of cattle. In a few years he has quite a good number, and is just beginning to know how to handle them. Must we say to him, don't buy such or such a one on account of color? It is right for us to inform ourselves as to color and rear those which suit the demand. I have seen reds sell for $7,000, and it has been those of red color that have taken the ribbons more than any other. I have seen some good roans, but they would not bring their value. There is a great deal in color. Perhaps it is not quite right to sit firmly down on the roan, but if we can get the red do so. I would say to the young man, get good pedigree. If you can get good pedigree with a red buy every time.

Thos. Wilhoit, Henry County. I have been in the business for several years, but my ideas are a little different from some others. Mr. Cotton thinks red is finer than the roan. I think not. The prize was given to the roan in the last few
years. When I started out 40 years ago I bought Shorthorns. I did not know much about the business then. When I went to buy I had to pay more for a roan than for a red. Red was the cheapest cattle we had then; that caused me to like roans, and I have kept that color ever since. I show my cattle in different parts of the State, and you generally see the best I have. I can not say what started this rage in color. I want first good pedigree and good individual animals, and as far as color you may have it. I have a white heifer calf I am going to show at the fair this season.

Mr. Seward, Howard County. I am a young breeder, and I like this discussion. Cattle are made for two things, which are beef and milk. If I can get a Mrs. Motte which will make as much beef as the Rose of Sharon or the Lily of the Valley I think it is the best cow, as it seems to be a better milker. There is one thing I notice. The best writers—Mr. Warfield, of Kentucky, among others—when he speaks on this subject of pedigrees and family of cattle, says there is not much in the family and raising, while trouble got up that the Motte family went ahead of all others in Kentucky. At the same time, when you breed cattle to make money there is a discrepancy on the Mottes, not because they are not as good as others, but because they have not a fashionable pedigree. Who made this fashionable pedigree? Did they all originate from the Shorthorns? Why did this fashion come to be? Fashion will do much. We find this in the human family in the way of dress. When you try to get rid of fashion you have a big job on your hands. There is not a gentleman in this room but has some respect for fashion. I love a bay horse, but I don't like a horse with white legs to the knees and a bald face.

Mr. Miller, Decatur County. I think this color is fancy altogether. Some prefer roan while others prefer red. Where a man's trade is in red cattle he must breed that way.

Mr. S. D. Buttz, of Columbus, read the following paper on

THE MILK AND BEEF QUALITIES COMBINED IN SHORTHORNS.

Mr. President:

We live in an age of specialties. It is expected that every man, when he has selected his profession, will select some special department or branch of that profession, and limit himself in his operations to every minuitia in that one line. The object seems to be to have some one perfect, or at least profess to be, in every branch of the various professions. In some instances the specialties have proven failures, while in many they have been successful. The medical fraternity is composed of almost as many specialists as there are diseases in the human family. The law fraternity is rapidly following in the same direction. It seems that no matter what profession among the laboring classes we investigate, we find the same state of affairs. It used to be when a man was a watchmaker he could not only put every piece of the watch in position, but could make any part of it, even to the minutest part.
To-day each workman has his particular part to prepare and perfect. These separate pieces are brought together and placed in position by other workmen, who know nothing of the making of the separate pieces.

While this rage for specialities has not entirely taken possession of the farming fraternity, it is making rapid strides of progress. In another generation, undoubtedly, it will have such a strong hold that we of to-day will be looked upon as mere tools in the hands of necessity.

To-day everything is explained by science, and we are obliged to look at our operations through scientific spectacles. If we raise a crop of clover, wheat or corn, some one will write us a long dissertation upon the same, setting forth the various stages of its growth, and telling just how much potash, nitrogen, etc., has been consumed by said crop, and trying to explain from what sources they came.

If we attempt to raise swine, we are met by some remarkable scientific personage who will tell us just what and how much to feed, and how to care for them. He can figure the profit or loss to the fraction of a cent, and yet, perhaps, has never owned a hog. So in every other branch of husbandry. According to the scientific theories advanced, it requires no experience to become an expert in any branch, for we can go to our books and be informed just the right thing to do.

If we would attempt to combine the milk and beef qualities in Shorthorns, or any other breed of cattle, we are met by this same scientist, claiming that it is impossible to combine the two qualities in one animal, as the form and food that is required to make a good milk cow will not produce a good beef animal. If they are found in one animal that animal will be unprofitable to its owner. They would have us use one breed for beef, another for butter, and another for milk.

Thus we are drifting to a point in the history of cattle breeding, when each and every farmer, if he would have beef, milk and butter, will be forced to keep at least two distinct breeds. Whether or not it is wise to drift our cattle interests in this direction the future will have to answer. We are in the current and are being rapidly carried on by its mighty force. While we occasionally hear a voice calling us back, we have not the power to turn our course, but are swiftly swept on. And another generation will not be able to arise and return the Shorthorn breed to its pristine honors.

The mighty West, with its broad and fertile plains, covered with its luxuriant grasses, has been a great factor in bringing this state of things about. The West could raise cheap beef and send to our markets, and cared not for the production of milk and butter. The Shorthorn being more widely disseminated than any other beef breed, its breeders we called upon to grade up these western cattle into earlier maturity and more succulent beef. To supply this demand Shorthorn breeders have bent all their energies, and let the milking qualities lie dormant. I say dormant, for I remember that they had been bred, built up and established by careful hands, into a beef and milk breed of cattle, and when this quality does not seem to exist, it only remains for the breeder to call it forth and it will answer kindly to the call.

The American farmer wants a breed of cattle that will make him the most money with the least expense. The average farmer keeps from five to ten head of cattle, of all ages. Consequently he wants an animal that will supply the
children with milk, furnish the family plenty of butter, and when ready for the shambles, furnish prime, juicy beef, and enough of it to pay for the care and attention bestowed upon it.

There seems to be no doubt that as a beef-producing breed the Shorthorns are remarkable, as is evidenced by the Smithfield shows in England and the Chicago Fat Stock Show and others in this country. But whether the milk and beef combination exists in our favorites seems to be the question. Yet we scarcely know why this question should be asked, since we have the evidence of its existence in the history of the past. The Shorthorns were bred by the Bateses and Collingses and other noted English breeders as a combined animal, and when brought to this country were heralded as being wonderful at the pail and for early maturity at the block. Allen, in American Cattle, says: “That the inherent quality of abundant milking exists in the Shorthorns no intelligent breeder of them will doubt. Our own observation, in more than thirty years’ experience with hundreds of them, is to ourself evidence of the fact.”

We find recorded in Volume I, page 282, American Herd Book: “Grace, by Victor 177, bred by L. F. Allen, calved January 24, 1841. She gave from twenty to twenty-two quarts of milk per day, and at one time made sixteen pounds of butter per week on less than eighteen quarts of milk per day. Grace was killed in March, 1851. Gross weight, 1,735 pounds; net weight, 1,464 pounds. The shrinkage, after hanging twenty-four hours, was a little less than sixteen pounds to the 100 pounds gross.” I quote from the same column: “On being cut up the beef showed superb. The whole carcass was deeply covered over with fine, firm fat, the lean meat was beautifully marbled, the fat scattered throughout the entire lean fiber, and the whole remarkable for its great amount and depth of lean meat.”

In Volume XIX, page 13,975, American Herd Book, are the records of forty cows yielding from twenty to thirty-six quarts of milk per day. In the same volume Mr. Thornton, of England, commenting upon the sales of 1879, says: “There is a slight increase in prices on account of the increased demand for milk.”

In Volume XX, American Herd Book, is another long list of cows yielding from twenty to thirty-six quarts per day. On page 14,941 of this same volume is an account of the remarkable cow Plumwood Lass (vol. x, page 773, American Herd Book), bred and owned by Mr. R. G. Dun, of Ohio, and exhibited at the Chicago Fat Stock Show in 1880. In commenting upon her the editor says: “While breeding she was a liberal milker, both in quantity and quality.”

We also find in this same volume that the herd of D. Sheehan & Son, of Osage, Iowa, averaged during October, 1880, one inch of cream per cow per day, from which was made one pound of butter. From these and other illustrations that might be presented, notably the fact that almost every breeder of Shorthorns advocates stripping the cows both morning and evening after the calves have been turned away from them that no milk may be left in the udder, show conclusively, to our mind at least, that Shorthorns have been good for both beef and milk. Whether they will continue to rank par excellence as a beef and milk breed rests with the breeders. It is in their hands. If the milking qualities are lost sight of and let die, the man who wants an animal of that character will have to seek it elsewhere. But we see no necessity for looking elsewhere. There are breeders to-
SHORTHORN BREEDERS.

day who are maintaining these qualities, and will continue to maintain them, and they will find many followers, while no doubt there will be many who will continue to hold to the theory that the beef and milk qualities can not be combined.

If we would be true to the trust that has been left us, we would as eagerly and as enthusiastically seek the development of all the qualities that combine to make a perfect Shorthorn as did those who laid the foundation of the breed. Let us awake to this responsibility and follow the specialty that will lead to the fuller development of Shorthorns. Then we will see the "red, white and roan" the peer of all breeds.

DISCUSSION.

G. W. Thomas, Rush County. Can you name the animals having those milking qualities?

S. D. Butts. I think the animal we want is the one of individual merit. It does not make any difference if traced to the Rose of Sharon or Mrs. Motte. The Shorthorns are a combined animal, having been built up in that way, and still remain.

Judge J. S. Buckles, Delaware County. It is not my purpose to discuss the paper just read. If it would be satisfactory to the Chair, I would like to make a few suggestions, as my engagements are such that I can not remain with you long.

Consent being granted, Mr. Buckles said:

Mr. President:—My expectations have been more than realized in reference to the apparent growth of this Association. You remember when we came here with fifteen or twenty members, we made our little speeches and enjoyed ourselves well, yet we felt there was not enough interest taken; we hoped that some day there would be a change. We had hope that the benefit to be derived from a Shorthorn Association would be enjoyed by more. Our hopes have been realized to a limited extent at least. If we, as Shorthorn breeders, will put our shoulders to the wheel, we will have no occasion for the encouragement of any other breed. We will occupy a position in Indiana that will live, or in other words we will have accomplished what is to be accomplished, that the average farmers have all in one respect become Shorthorn breeders. It is to their interest they should be so, and when that interest is brought home, they will not be slow to adopt it and put it in practice. In this connection it may be considered there is danger of over-doing the business. Allow me to say there is no earthly danger. Individuals may, but the State will never do it, because we are a meat eating people. We eat 150 pounds a year per capita, and we like to have a good article; the better the meat the more we will eat of it. The United States is the greatest meat producing country in the world, and Great Britian eats more per capita than any other country, from the fact that they raise a better article. It has been said sometimes that the market would be overstocked from the number of cattle on the Western plains, but look at those herds and then turn east and see what a population there is. The population is daily increasing.

In New York a few years ago they had seven or eight hundred cattle, where now they have four or five hundred in proportion to population; but for the rapid increase of cattle in the West they would be without meat. Our population is
growing so rapidly, and the demand for a good quality so urgent, that you will have ample room in the future to exercise your powers in this industry. This beef question is an important one to the people of Indiana. It is an all-important question, for this reason—we have been raising corn, hogs and wheat, getting well paid, but we have exhausted the soil, and there is no other method by which we can restore fertility except by purchasing the fertilizers of commerce or rearing more cattle. Rearing cattle is the cheapest thing we can do. If we buy fertilizers at from five to six dollars per acre, farming will have to pay better than now or we won't make much money, but if we can rear better stock and get a good market we save this five or six dollars per acre of fertilizer money. We should devote more time and attention to the improvement of stock, taking care of and protecting it. Indiana has been having more confidence in her luck than any other people I know of. We have been sitting here without making any provision for taking care of or protecting our live stock. The Governor has no law under which to issue a proclamation to quarantine against Kentucky or any other State bringing this cattle plague in our State. Swine men have a statute that if a man has a pig sick with the cholera it may run where it pleases, but if it dies he has to bury it. [Laughter.] Cattle men are not so fortunate. We don't have such a statute for burying a steer. There is a necessity for protection! At present there is no protection. Your Legislature is now in session, and there is a bill before it authorizing the creation of a Sanitary Commission, to consist of three members appointed by the Governor, making it the duty of this Commission to appoint a competent Veterinary Surgeon, who is under its control. This Commission is given control and management of all diseases to which live stock are subject. In the misty ages of the past it was thought there was no remedy for the prevention of the spread of smallpox, but history records the fact that there has been perfected a remedy through which the disease has been greatly averted. Had it not been discovered the human family would have fallen short of what it is. Under the general idea, that wherever there is a clear manifestation, it may be through mechanical science, medicine or veterinary surgery cured, or at least prevented from spreading.

I saw an estimate of the loss in Grant County this year from live stock diseases, which was $150,000. Delaware has perhaps lost as much. Spread this cattle plague over Indiana, what an enormous loss we would sustain. Think of it! What would be the result if two or three car-loads were turned loose in Indiana that had contracted pleuro-pneumonia, developing in the midst of our herds? Untold thousands would be lost. When we have no means to protect ourselves, is it not then important that something should be done? The live stock interest of the United States, as expressed to-day in round numbers, amounts to three billion dollars, an amount equal to that expended by the National Government in liberating four millions of persons and suppressing the most gigantic rebellion the world ever witnessed. I think it would be well for us to look after this interest. In preparing this bill I have searched different State laws, as well as National, on the subject, and consulted those familiar with such laws, which, perhaps, is as good as we can make under the circumstances. I want each member of this Association to see his Senator or Representative before leaving the city, and talk to him about this matter. Our members of the Legislature have not thought much about it. A farmer
Representative came to me to-day and said, "I want to amend that bill, or I must vote against it." He said: "When my stock take the disease I have to have them quarantined and leave them there until liberated by this Commission." I asked him what he wanted to do with them. He said: "I want to sell them."

We could not undertake to protect the live stock of the State and allow people to take disease all over the State. There are just such ideas in the minds of men in giving this matter consideration. It is the same way with some men who have hogs exposed to cholera—they want to sell.

Suppose you allow the farmer to sell cattle exposed to pleuro-pneumonia to Tom, Dick and Harry, you may have 20,000 in the State exposed to the disease. We think we are safe; we never had cattle disease here; no danger in Indiana. They entertained that opinion in Ohio, but during the past few years they have had a siege of pleuro-pneumonia. The same is true of Kentucky, Missouri and Illinois. How long will it be until Indiana will have it? Indiana has the best opportunity to plant this disease in her midst, with no protection against it. What is to be the result? We will wake up some morning and find our State covered over with pleuro-pneumonia. It is said that Congress will pass a bill protecting the cattle interest, but I do not know whether it will or not. Notwithstanding that may be true, we need a sanitary commission here invoking congressional aid. If that power is not within our reach, then we may be able to suppress the disease ourselves. This bill provides that no animal shall be paid for out of the State Treasury which may have been brought into the State in a diseased condition or from a district where pleuro-pneumonia is known to exist. I want every member of this association to read this bill, and see his Representatives and Senators and talk to them about it. Thank the Lord it is the only thing that is clear of politics [laughter], and we can approach both Republicans and Democrats with impunity. If you would pass a resolution and give your Representatives it might have a good influence. This veterinary surgeon is to be paid according to what his service is worth, the bills to be approved by the Governor. When this bill becomes a law if there is an animal diseased in the neighborhood it is your duty or mine to report the same to the Secretary of the County Board of Health, and it is his duty to examine and quarantine such animal until he gets assistance from the Sanitary Commission. They can quarantine properly and control the stock. We want our interests protected in that direction and we should go to work at once and try to effect something. The members of the Legislature should serve our best interests in this live stock industry of Indiana, representing as it does more capital than any other protective industry in the State. We see what has been done in other States in this matter, so let us act at once.

Thank you, gentlemen, for your indulgence.

E. S. Frazee. A few years ago we had a bill similar to this, and one carefully prepared, and it was killed in the House. The farmers of Indiana were partly to blame for that. As long as professional men take the lead we will be left out in this matter.

J. Strange, Grant County. In our county association we took time by the forelock and passed a resolution informing our Representatives, both State and na-
tional, to support this measure. Did I understand, Judge, that this was to be under the control of the State Board of Health?

Judge Buckles. No, sir. It has been suggested the propriety of making it a part of the duty of the State Board of Health; but, after consultation with livestock men in the State, it was determined not to do that, as the State Board of Health had enough to do. We want a commission whose sole object is to look after the livestock interest. We also want a veterinary surgeon. That is the reason we give this to a commission which has power to discharge the Veterinarian if found incompetent. If this was submitted to the State Board of Health it would be a source of trouble. Looking after the health and protection of the livestock is a different line of business, and we thought best not to give it to the same board. We cannot afford to let this go back. In Indiana there is a hundred million dollars’ worth of livestock. We have a couple of millions invested in the State House, and we want it protected, yet we are slow to make any provision for protecting the hundred millions of property.

Mr. Blake. It is necessary to see each Representative and Senator on this subject. It seems necessary to have, as a body, the sense of this meeting. I, therefore, move that a resolution be prepared for that purpose.

The motion prevailed.

Mr. J. N. Sankey, of Vigo County, offered the following:

WHEREAS, The livestock interests of the State of Indiana are entirely unprotected from the introduction and ravages of contagious diseases of livestock; therefore,

Resolved, That the Indiana Shorthorn Breeders’ Association demand of the Legislature now in session the passage of House Bill No. 109 now pending, providing for the establishment of a Live Stock Sanitary Commission.

Pending the adoption of the resolution the following discussion ensued:

S. F. Lockridge. I do not like the word “demand” in that resolution.

J. N. Sankey. I don’t think of anything discourteous in that word. I think it is a good word. We have been asking long enough; we must now demand.

J. Strange. We should say “recommend that they pass the bill.” We are not in authority and they are. I would therefore move to amend the resolution by striking out the word “demand” and insert the word “ask.”

S. D. Butts. We, as a body here, represent one million dollars as breeders of cattle; we represent fully five millions as livestock breeders, and we should say “demand.” We have a right to say “we demand you to protect our interests.”

Prof. W. C. Latta, Purdue University. I do not know whether the word “demand” is right. It occurs to me that “earnestly request” would be preferable. It would be better in the phraseology.

S. F. Lockridge. It is customary for people to use the word “demand” who are in authority and have power to enforce. We should put this in the way of a request and we will accomplish just as much as to use the word “demand.” Some members of the Legislature are just on a balance as to how they will vote on this bill. Why put in this resolution language that will have a tendency to irritate instead of “pouring oil upon the troubled waters.” There is policy in peace as well as in war; for that reason I am in favor of the amendment.
E. S. Frasee. I move that we say "earnestly request."

The resolution was amended to read "earnestly request" and adopted.

S. R. Quick. I move that the Secretary of this association be instructed to have five hundred copies of this resolution printed for distribution, especially among the members of the Legislature.

The motion prevailed.

H. B. Cole, of Morristown, Shelby County, read the following paper on

"GENERAL CARE OF HERDS."

The question as propounded does not admit of a very wide scope of thought, as it debar the writer from having much to say concerning the formation of the herd, whether it be a large or small herd, headed by one or more bulls, etc., but taking it for granted that a herd is composed of a number of cows, calves and one or more bulls, we will only state what every breeder will readily admit—that each animal should be provided with a good, warm, comfortable shelter, as this much every man owes to the animal kingdom, and unless the breeder has provided sufficient quarters for every animal comprising his herd, he has not taken the first step toward bestowing that kind of care on his herd that will anything like warrant his success as a breeder—not fine barns or costly domiciles, but good substantial stables. Just the time in autumn to bring the herd from pasture to occupy those quarters must be left to the judgment of the owner of the herd, or shepherd; but as soon as the biting frost begins to blacken nature with its chilly hand, we would say bring up the dams with their young, inclose them within their winter quarters over night, and should cold rains be pouring down, it would be advisable, on a humane principle, to say nothing of the thrift and comfort of the herd, to allow them to remain indoors on all stormy days, only allowing them an interval out for exercise and water. Of course the radical change from the succulent grasses to dry feed will be attended with a loss of appetite, which must be met by the owner with good judgment. Cut oats and hay, with a sprinkle of ground feed, will invite their attention favorably, and no trouble or discontent will follow.

Over-feeding just now should be avoided, for to founder an animal at this time will last all winter. So a tempering of appetites for the change which must soon come, should claim no small consideration, for now that the wintry blasts are here and the leaden sky indicates that "he who doeth all things well" has withheld, for a season at least, the flowing of the sap in the grasses, and daine nature asserts her rights to hold earth in icy chains, we must be in earnest about the care of our herds. Business begins in earnest. Every animal must be assigned his permanent winter quarter. This being done, let us take a stroll through the barns and sheds where the herd is to remain the most of the time for the next two months. Here are the cows whose young are not weaned, chained in open stalls with an apartment adjacent for their calves which are allowed to suckle, and then be driven
into their apartment where feed is kept constantly by them. Should there be much
difference in age and size, the larger ones are kept in separate divisions. An
abundance of clean straw must be supplied after the bedding of the previous night
has been removed.

After a strict adherence to cleanliness in the calf stable, follows a close regard
to ventilation. Good ventilation is a necessity, for the foul odors constantly
arising must find a way of escape. The same caution is necessary in the dams'
department, and an eye kept to the cleanliness of their stalls, not only for the
health and comfort of the dam herself, but that the urine and droppings may be
kept from adhering to the udder and teats of the dam, thus causing the calf to
shake his head with contempt when attempting to suck.

I would urge that plenty and the best of bedding be used without stint. Straw
in my opinion, from a long experience in its use, has no superior for bedding.
Next to bedding will come feeding. Regularity in feeding is probably overlooked
by the average herdsman. We would advise system in feeding as well as regular-
ity. And by feeding the same hour each day and beginning at the same stall to
feed each time will so habituate the herd to systematic feeding that much of the
annoyance from bellowing cows and calves can be avoided.

Contentment is a boon to whomsoever it may come. So in the herd secure
contentment by a systematic course of treatment. First, teach every calf to stand
halted; then to lead. No animal should be unbroken in the herd. In the way
of feeding, a variety in winter is a necessity; and we have only to consult our own
mechanism to convince the most critical that the cow will tire of one continual
routine of food. Hence, show yourself master of the situation by studying the
wants of your cattle. If you find crushed or ground corn and cut hay relished
supply them with it. If a cow is dainty supply her with slope, steamed hay, etc.;
in fact, learn to regulate your feeding operations according to the requirements of
the occasion.

As to care of bulls: They should have a lot to run in at least a part of the
time, with a stable adjacent. I would prefer the bull-lot and stable independent
but convenient to the cow department.

Time of breeding: A good calf can not come at a wrong time of year, but for
aged or breeding cows I prefer to couple so as to have my calves dropped from the
middle of February to April 1; and for heifers, breed them to drop their first calf
at from twenty-eight to thirty months of age, and the time of year May or June.
Having gone over the ground hurriedly, I will say in conclusion that the care of
the herd will require much labor as well as knowledge, and he who would succeed
as a manager of the herd must be a close student not only of feeding and the laws
of breeding, but the care of the cow during gestation to avoid abortion; assist at
any time the labors of the dam during the birth of a calf; be on the alert for milk
fever, enlargement of udder, etc.; proper diet before and after calving, as well as a
number of minor duties too numerous to mention in this article.

Should our experience be of benefit to any we will feel amply repaid for all
our time and trouble.
DISCUSSION.

E. S. Frazee. I think the production is a credit to the gentleman. The time a heifer should have her first calf, in my opinion, is in May or June, so the udder will be extended.

S. D. Butts. How many cattle can a person care for well? I would like to hear an expression from some of the older breeders on this subject.

H. B. Cole, Shelby County. That depends on certain conditions. I can feed quite a number if I am fixed for them.

Convention adjourned to 7:30 P. M.

EVENING SESSION.

The propriety of appointing delegates to the Ohio Valley Association of Cattle Breeders, to be held in Cincinnati February 2, was introduced for

DISCUSSION.

Judge J. S. Buckles. The fat stock show at Chicago reaches over very much country, yet it does not reach all that it should. The object of these fat stock shows is the same as a school teacher teaching by object lessons, and fixes impressions on our minds. The fault of that show is, it don't reach enough men who are active in the protection of cattle, and what we want in Indiana and the Ohio Valley is, to bring these object lessons nearer home, where we would likely have a larger number of farmers in attendance, and thereby start the improvement we so much desire. It is thought it will be in opposition to the Chicago convention, but we can manage it like State and county fairs—one is larger than the other, and the lesser will not affect the greater show. The Ohio Valley convention won't injure the Chicago organization, but will, most likely, reach a large number of men and afford an opportunity of seeing these things and being more familiar with them than at Chicago. It is suggested that we hold these meetings alternately at Indianapolis, Cincinnati and Louisville, comprising the territory of Ohio, West Virginia, Kentucky, Indiana, part of Missouri and Southern Illinois, making it practical by means of object lessons. If the object is improvement in the knowledge of breeding and handling live stock, I do not see why we should not give it our active support. It is bad policy to decline appointing delegates to this Ohio Valley convention. One purpose of this meeting at Cincinnati is to take some action in regard to the Miller bill, now pending before Congress, providing national protection for cattle. It is the purpose of this meeting, held at this early day, to request action of the American Congress on this question. It is thought a united effort of the cattle men in the Ohio Valley may be of advantage in this direction, and that the convention may be used for that purpose. At the city of Chicago the packing business is in the hands of a few men. The fact of that is, a great number of live stock men think it is partly at the expense of the the producer, and are able to concentrate their power so as to control the market and drive the butchers out of the market. This may tend in some degree to
counteract that power. If it gives any trouble whatever in that direction we will feel it, for the more competition in the markets, the better it is for us. If we get concentration at Cincinnati we would get it in different hands, and it is better to have it that way than to have it all at Chicago. The effect of the organization would, doubtless, be to build up slaughtering establishments at St. Louis and Cincinnati, benefiting Indianapolis toward building up a market for the purchase of beef animals. We can not be injured by increasing the capacity of our markets.

Thos. Nelson. I would inquire if it is desirable to benefit the Shorthorn Association only. There are other cattle men here who wish to take part in this discussion.

Mr. Mitchell. I am glad the gentleman has brought that point out. If it is desirable on the part of the convention I would very much favor the adjournment of this Association, and the remainder of the evening be devoted to a general discussion from advocates of the different breeds of cattle.

Judge Buckles. I move that this Association adjourn until 9 o'clock tomorrow morning, and that the remainder of the evening be devoted to a general discussion from different breeders of cattle. Carried.

Convention adjourned till 9 o'clock A. M.

Thursday, January 27.

Association met, President Mitchell in the chair.

On motion of Mr. Quick, H. G. C. Bals, Indianapolis; Isham Sedgwick, Richmond; John B. Conner, Indianapolis; G. W. Thomas, Homer, and E. S. Folsom, Indianapolis, were appointed delegates to the Ohio Valley Cattle Growers' Convention, to be held at Cincinnati February 2.

S. F. Lockridge, of Greencastle, not having prepared an address on "How to Apply the Scale of Points in Judging Shorthorns," as requested, said: I am totally opposed to scale of points with which to scale cattle; it is not practical. A judge, in applying the score card, is apt to take in detail instead of judging in a general way. He is inclined to place too little importance on the quality of the animal and too much on the form. In other words, he reduces it to a mathematical demonstration, which is no way of judging beef animals. Now, Mr. President, I do not wish to say much on this subject, but with your permission I will read two or three short extracts from Mr. Warfield, of Kentucky, and Judge Jones, of Ohio, bearing upon this subject. [Mr. Lockridge then read a few extracts on the subject from the gentlemen named, both of which pointed out strong objections to the use of score cards.]

Thos. Willhoit. We should have something to judge by, but people differ some regarding the various points.

Thos. Nelson. I have a little paper in my hand regarding scale of points. It is a scale presented by Mr. Kinsley, of Shelbyville. I am of the opinion I could not scale an animal with this. I determine with the eye. I can not determine with the points Kinsley presents, unless I am educated to it; consequently I think there is not much in this matter of scaling. I may not be able to see the number of points on the loin and crop, but I can not scale with his points unless I am educated to it.
SHORTHORN BREEDERS.

William Kinsley, Shelby County. I think that it is the only correct way to judge stock of any kind. Breeders of almost every class of stock have adopted a scale of points that they may breed to one standard. It insures uniformity in breeding. Take the Herefords for instance. They are very uniform and making rapid strides toward the front. While the Shorthorn breeders are having no standard, every man breeds to his own idea. As breeders the only thing that will insure success in the future is to establish a standard of profit that excels anything else and breed to it. We do not expect to get one animal to fill the standard, because the standard should be placed so near perfection that we could not fill it. That is an important point in judging the establishment of a standard to breed to, and then for judging in the show ring there is no other way to accord strict justice to exhibitors but to select a man who is competent to judge. Let him have a card on which he can mark the defects after the cattle have been passed on. The exhibitors can see exactly where the judge makes a point. If they were judged by a committee it depends altogether on the fancy of the men judging as to which one has the premium. After the committee decides according to their fancy, the exhibitors don't know why they get a premium or why they do not, and go away without being any wiser, and don't know whether they have the best cattle or not. But if we have a man that the Fair Association and the competitors think competent to judge, and have this standard and description of this ideal animal, they will then see just exactly why they are beaten, and if the judge is not correct they have an appeal. They can refer to the points which have been misrepresented by the judge. A breeder can apply them on his own stock and examine the score card at home at his leisure and tell where he may find a weak point. He may be able to select a mate that he may breed too, to improve upon this point. I find it takes an expert to know when he has a good animal. The majority of men breeding cattle know but little about my points of excellence. As to whether my judgment in formulating this standard of excellence is correct or not is for you to judge. I think it is correct, and I ask your criticisms on that point. So far as arranging a scale of points I think it has never been beaten, and gives the judge as complete control over justice as anything we can get. It is divided into sections and subdivided into parts that each part may be examined separately. The sections are also divided into equal parts; each section calls for ten points representing perfection in that section. But in using a scale of points it is necessary to use brain. We can not make any machinery run without brain work. Any person competent to judge on a committee at shows is much more competent to judge with a scale. Our scale cards are meant to represent perfection. For instance, if the defect is equal to 1/10 part we cut it one point in decreasing. On this principle the idea is perfection.

James Daily, Vigo County. I went to Ohio last fall and bought a fine hog that I thought would scale 100 points. I had two experts to scale that hog and they varied from twenty to thirty per cent, after giving them a fair chance to examine the hog. In my opinion there is nothing in it.

G. W. Thomas. In speaking of cutting the animal in scale of points, Mr. Kinsley says if they go either below or above the standard we cut one. Is it right? If he exceeds perfection, which is impossible, can he be cut by being over perfect?
Mr. Kinsey. If an animal is over full in one part it destroys the sale of the animal. We must make allowance on this point.

G. W. Thomas. It is impossible for any one to become over perfect. According to this standard, if one is over perfect clear through you mark it above ten.

Mr. Kinsey. If he was perfect or over, there would be no cut.

G. W. Thomas. The object is to bring all up to a standard.

Mr. Kinsey. We want a standard so that no living animal can reach it. This is the idea in judging poultry.

G. W. Thomas. The Booth and Bates cattle are both raised in this country. The Booth cattle are smooth and in symmetry very fine. The Bates cattle are growthy and a little coarse. Suppose a Bates and Booth were led into the ring, how are you going to scale these two animals with these cards?

Mr. Kinsey. If the Booth is the best we take it.

Wednesday, January 25, 1888, at 1 o'clock P. M., was the time appointed for the next meeting.

Mr. Folsom offered the following, which was adopted:

WHEREAS, Contagious pleuro-pneumonia now exists in active form in several localities in the United States, threatening the great cattle-growing industry of the entire country; and,

WHEREAS, It has been fully demonstrated that local authorities are wholly unable to exterminate or keep it in check; therefore,

Resolved, That we hold it to be the duty of the National Government to undertake the suppression of this disease, and to this end we urge our Senators and Representatives in Congress to work and vote for House Bill No. 10,357, known as the Miller bill.

Resolved, That the Secretary of this association is hereby instructed to forward copies of this resolution to our Senators and Representatives in Congress.

Mr. Rolen Yerkes, of Fountain County, read the following paper on

"WHY AM I ENGAGED IN RAISING SHORTHORNS?"

I have been asked the oft-repeated question, Why am I breeding Shorthorns? I answer, because I can not afford to breed any other. Having only a moderate sized farm, and like almost every one else having a desire to improve and add to the property left to me, so that the rising generation may be benefited in like ratio with myself, it becomes necessary that I should work the farm to the best possible advantage. Consequently I pursue a course of mixed farming. I consider mixed farming the safest course to pursue on a small farm, because if one product fails we don't lose a year's work and time and capital invested, for we have another to fall back on. And again, all the hay and grain we raise is consumed on the farm, thereby enhancing its value, providing better means for shipping to a distant market, and leaving behind the necessary element to grow another crop—the manure-
The kind of cow to breed on a farm of this kind should be not only as near a general purpose cow as could be found, but one that suits your fancy as well, for I don't think any one can breed successfully a kind of stock they do not like.

In looking over the different breeds of cattle I could find but one that met with all of the requirements. That one is the Shorthorn. Other breeds that are claimed to be general purpose are either deficient in size or so coarse and rough that it takes too much feed and too long a time to mature them.

In the Shorthorn I find the disposition, color, longevity and hardihood, milk and butter, and feeding qualities. In disposition they can not be excelled. They are very quiet and tractable, seldom showing any inclination to hook each other, and this means a saving of several dollars in the course of a year in the way of feed, as well as a prevention of loss that would occur by the stronger overpowering the weak, were they of a wild and unruly disposition. As to color I think there are no colors richer or prettier than the red, white and roan, with their different shades and intermixtures.

For longevity and hardihood they are remarkable in both sexes. A number of bulls, both in England and America, might be named, which have continued successful sires to twelve and fifteen years, a few to even a greater age than that. It is not uncommon for the cows to continue breeding until fourteen and sixteen years old—a few as high as twenty years old.

The cows, as milkers, when bred and reared for the dairy, have proved equal to any other breeds—extraordinary milkers and butter yielders. In their earlier importations to America the cows, as a rule, were good milkers, as many now continue to be.

At the late Fat Stock and Dairy Show, at Chicago, the first and second premiums on butter were both won by Shorthorns. The females produced by a cross of the Shorthorn male on the native cattle are in almost every instance good milkers. As beef cattle they have no superiors. They have met in open competition, in the many show rings of the United States and England, the very best Herefords, Polled Angus and Galloways that the world has produced, and have invariably carried off a majority of the premiums competed for.

In conclusion I would say that this article was not written with the intention of waging war against any other improved breed, for there is room and a demand for all. They are all more or less successful in the different lines in which they have been bred, and any of them is a decided improvement over the scrub.

DISCUSSION.

Mr. Galt, Lafayette. When a man is engaged in raising Shorthorns he raises them for the money there is in them. It does not matter so much about the color of the animal so the money is there. It don't matter about the color of the clothes we wear—whether the coat be black, blue or brown—but if we want to keep our credit we pay the money down. The animal that will produce the most valuable beef is the animal to breed. The gentleman says we breed for milk, butter and beef. A red don't give any more milk than a roan. The best I ever saw gave seventy pounds of milk in a day, and 22 per cent. of that was cream. We are
breeding Shorthorns here for our benefit, and we are not breeding red to suit our
Kentucky friends. We are breeding here for our own profit, and the general
farmer expects to sell at home, and don't care so much for color as a good animal.
My experience in handling Shorthorn cattle has been as salesman more than any-
thing else. I closed out my herd last fall and am now out of the cattle business,
and I got satisfactory prices for them. The main secret of success in raising cattle
is to take good care of them. It is the quality of the animal and not the color
that makes them sell well. It is not in the auctioneer's power, but the animal
must show for itself.

Mr. E. S. Frazee, of Rush County, read the following paper:

SHOULD ONE BULL BE USED ON THE ENTIRE HERD, PROVIDED THE HERD IS
NOT TOO LARGE AND NONE AKIN?

This depends upon circumstances. A vicious bull should not be used on any
herd. To some extent the disposition of a bull is transmissible; to a great extent
it depends upon what kind of hands he is in from birth to maturity; a quick-
tempered, passionate man can spoil the temper of the most docile calf. It is im-
portant that the herdsman should be a man of patience and good common sense;
not irritable, nor inclined to be noisy and abusive. As the progeny partakes as
much of the nature of the sire as the dam, it is important he should be a first-class
animal, and as far as possible remedy the defects of the cows constituting the herd.
If the cow is coarse in the head and horn, then the bull should be the opposite.
If the cow has a heavy, thick neck, the bull should also remedy that defect. It is
very important the cow should be full on the crops, with a straight, level back,
wide in the hips. Should she be defective in any of these points the bull should
be able to remedy these defects in the progeny. The cow should be well developed
around the heart and come down well in the flank. Never breed to a bull that is de-
fective in either of these points. If the cow is large and growthy, and not inclined
to early maturity, she should be served by a small, flocky, close-made bull; that
will mature early.

A bull for most cows should be neat and smooth in the head and neck, with a
mild eye, well developed on the crops, a level back, a well-sprung rib, well down
in the twist, good around the heart; if defective in the vital organs he should
never be used. He should come down well in the flank; and, above all, he should
be a good handler—that is, a loose, mellow hide, soft to the touch; if he is a harsh,
bad handler, better make a steer of him. Among Shorthorn breeders there is not
sufficient attention paid to the handling qualities of the bull. Breeders of Short-
horn cattle have suffered greatly of late years on account of the silly prejudice for
red bulls; on account of a craze for red some of our very best calves have been
steered, and inferior ones (because they were of a solid red) used in their stead.
From a calf, the bull should have a grass lot in which to run, that he may develop
and harden his muscles and breathe the fresh air. Impotency in bulls is usually
the result of two causes—a want of sufficient exercise in the open air and too much corn. While corn is the best and the cheapest food to lay on fat, it is too heating in its nature to be the principal ingredient in the feed for the bull. Sheaf oats or clover hay cut fine and made into chopped feed, with two parts bran to one of corn-meal, ground coarse, makes good feed for a bull. Another serious mistake Shorthorn breeders have made in selecting breeding bulls is in paying more attention to pedigree than to individual merit. Never save a bull calf for breeding purposes that is not from a good milch cow.

DISCUSSION.

Isham Sedgwick. I would ask Mr. Frazee if in his examinations of herds he finds many uniform enough to use more than one bull?

Mr. Frazee. If he can afford it he had better have two bulls.

Thos. Wilhoit. My opinion is that one bull is sufficient. In the first place, no matter how your cows are, you want the best bull you can get, if the herd is not too large, and he will make an improvement on any of your cows. If all the cows are red they will breed that way. The main thing to do is to put the best bull on our cows all the time to get the best results. You give me four crosses of good individuals on the cows and four crosses all good individuals on the bull and I place that bull on the cows, and every calf will be stamped that shape. It is the four last crosses that make them, and if these are good individuals the calves will be about alike. As to color, let us get rid of it. It is fashion only, and is working against our interests. If it is right to have roans, let us have roans, and encourage them. Some gentleman said yesterday the fashion brought ribbons to the animal. Suppose I am, a new beginner and pay a big price for a few cattle, and one brings me a roan bull calf, another brings a white, and I paid as big a price for the white as the roan, must I sacrifice this? Let us not let the color rule, but stick to the best animal without regard to color, and not be so particular in this respect. I had a man who had been in the business for thirty years say of a bull: "If it wasn't for that white spot on him I would take him." A man came to my place to buy a young May heifer, and found one that just suited him, but she had three white spots on her. I asked him $400. He said he would pay $300 if those spots were not there. Those three spots made a difference of $400 with him. I had a solid red, but I was not going to let him have it. [Great laughter.] He went away and bought a red heifer at one of the sales of Mr. Meredith for $450, which proved to be inferior. I would advise all to take hold and think as much of your roans as reds, and assist one another. While we are holding out for color we are working against the Shorthorn interest.

Mr. Earhart, Clinton County. I have learned something since coming here. There is one point in Mr. Frazee's address of which I wish to speak. The great secret lies in the treatment of bulls. Take an animal that is fractious, by kind and careful treatment he will become quite docile. My experience in what little time I have been breeding Shorthorn cattle and Poland China hogs has obtained for me the best results with good treatment.
Mr. Sedgwick. Mr. Frazee thinks we should have two bulls, and Mr. Wilhoit advocates but one. You will recognize these men as good breeders. It leaves us younger men in an unsettled condition. If we adopt their sayings without our own reason on the matter we are left so we can make no choice, because we have two lines of advice opposite to each other. What are we going to do about it? We must go into the field and watch as those men have done. The men who go in the field with Mr. Frazee's advice will meet with good results, and the same with Mr. Wilhoit. I want to know about these things. This meeting is my first experience in a Shorthorn convention, but I have handled Shorthorn cattle for fifteen years. My own idea is that when the characteristics are opposite the prominent characteristics of one are apt to prevail over the other; they are so near alike and have been bred so near alike that the chances are in favor of uniform animals. If we can, by adopting some scale of points arrange some uniform style of animal, it would not take long to get a uniform herd, as in the Hereford animal. Last year I went to see the herd of Adam Earl, of Lafayette; a prominent breeder of Hereford cattle. I was surprised at so much difference in the different animals; some were higher off the ground than others, and imported animals at that, yet each animal was uniform in symmetry. My idea of the Shorthorn would be like this: An animal of good size, that makes pounds fast and grows to 1,800 to 2,000 pounds at two years old, and one that takes on flesh up to three years old from his birth. Such a class of animals make good beef animals at any period of life. This degree of uniformity has two theories, as to whether one or two bulls is enough. I do not know which is best as a rule. I am glad to adopt Mr. Wilhoit's theory, and breed as near like the former animal as we can get. I believe that one bull is possibly the best all the time.

Mr. Cotton, Shelby County. Mr. Wilhoit is a good breeder, and is known far and near. He has attended fat stock shows and placed his hands on the bullocks to be slaughtered. I wish he would tell us the handling qualities, that we may know when an animal is slaughtered that the beef would be marble and fat not all inside.

Mr. Wilhoit. I have had the experience of a butcher for 21 years. We want something that looks soft, and a good handler—an animal that when butchered the fat is not on the outside; it is mixed through the meat and makes it good and juicy. If it were on the outside it would be hard and dry. The animal that mixes the fat through the meat is tender and easily cooked, and is most palatable. You can tell this marble beef by feeling the animal.

Mr. Cotton. Can you tell this in a poor animal?

Mr. Wilhoit. Not so well as in a fat animal.

Mr. Cotton. Was it improved stock you killed?

Mr. Wilhoit. It was not first-class grades, about two-thirds scrub, but fair animals.

Mr. Ziek. Does the hair indicate quality?

Mr. Wilhoit. The hide of a good animal is some indication. A poor animal is not pliable.

Albert Marlatt. My experience has been with one bull. I endeavor to use the best I can get and a uniform breeder. You want a good shaped animal, one that will keep well irrespective of color.
Thomas Nelson. This bull question is an important one. My experience in buying a bull is that we want one with good top crosses. With due deference to Mr. Frazee, I think that having two or more bulls in use will result in a herd of a type that will not have much uniformity about it. Some bulls are very uniform. If a new beginner gets a two or three year old that proves himself a uniform getter it is the one he wants. I have little faith in using two bulls on the herd, and try to change the defects in the herd by having one bull without defects. We want to keep him as long as we can in the herd.

Mr. Gall. In buying an animal I want to see it, but I never would buy unless I feel it. I could almost feel that animal when Mr. Wilhoit was giving an explanation. A breeder of good Shorthorn cattle will never have cattle but what is about right as to handling.

G. W. Thomas. I differ a little from the gentleman on the floor and Mr. Wilhoit. I attended the Fat Stock Show at Chicago, and from what I learned there the gentlemen are surely mistaken. The Hereford bullock that took the prize was soft and mellow. When that bullock was butchered he was fat on the outside; he had that mellow feeling, as I paid particular attention to it. There has been a mistaken view somewhere on this matter; that is clear to my mind. Those soft animals are not marble flesh. If you will go there and feel those bullocks you will see that those animals that have marble flesh are not soft animals.

Thomas Nelson. Was this prize animal a hard handler?

G. W. Thomas. No, sir; he was a medium animal, neither soft or hard.

Thomas Nelson. This animal you speak of is too thin. The kind Mr. Wilhoit wants is solid, but not leathery.

G. W. Thomas. I do not want to be considered in opposition to Mr. Wilhoit, but I want a uniformity of views on this matter. I feel that it is a duty that this matter be discussed and corrected. The medium is the marble flesh in my opinion. This matter should be corrected before we leave it. I hope Mr. Wilhoit will give us an explanation of it.

Thomas Wilhoit. If I had an animal here I think I could show you so you could understand. If I am wrong in this I am almost ready to give all up. I have had experience in this and talked with men of experience. It is not a soft like fat, but has a feeling of elasticity about it. An animal that is hard rolls up like paper and is not good. When you lay your hand on, it must spring back and have no adhesion. We will learn this by handling and noticing these things.

S. R. Quick offered the following resolution, which was adopted:

WHEREAS, Through the providence of God, who rules the destinies of men and nations, our beloved brethren and citizens, J. A. Thompson of Edinburg, and I. J. Farquahr, of Winchester, have been removed from us by death; therefore,

Resolved, That we feel that we have lost two valuable members of our association and good citizens, and that we cherish their memory with grateful recollections and deep sympathy with their families and friends in their loss, and that our Secretary be directed to mail to their families a copy of this resolution.

Robt. Mitchell offered the following resolution, which was adopted:

WHEREAS, The Consolidated Cattle Growers' Association of America, organized for the purpose of securing legislation for the suppression of contagious dis-
cases of live stock is endeavoring to unite all the cattle interests of the country under its bureau; therefore,

Resolved, That this association take out a membership in the above named organization.

The Finance Committee submitted their report, which was adopted.

Joshua Strange, from the Committee on President's Address, made the following report, which was approved:

COMMITTEE ON PRESIDENT'S ADDRESS.

We have examined the President's address with great care, and find it full of interesting and impressive thought. We find that the source from which he has obtained his statistical information is misleading. In conference with the President we have changed the same to meet the facts in the case. While we know he did not mean to cast reflection on other pure breeds, which he apparently classed with the scrum cattle, we have suggested that the following substitute be placed at the proper place in the address: "This does not include "other pure-bred cattle," which meets the hearty approval of the President.

Your convention has already taken appropriate action upon the suggestions of the President in regard to a sanitary commission.

We earnestly commend the suggestion that there be a greater unity of action of the Shorthorn breeders, believing this to be the means through which the Shorthorn interest is to be advanced. We would commend the suggestion that this Association indorse and do what we can to further the organization of the Ohio Valley Association.

The following officers were elected for the ensuing year:

President—Robert Mitchell, Princeton, Ind.
Vice President—Thomas Nelson, Bloomingdale, Ind.
Secretary—Walter J. Quick, Columbus, Ind.
Treasurer—E. S. Frazee, Orange, Ind.

G. W. Thomas offered the following resolution:

Resolved, That we request our Legislature to provide for the annual, instead of the biennial, publication of Indiana statistics.

The resolution was referred to a committee composed of Robert Mitchell, G. W. Thomas, J. B. Conner and E. B. Martindale, and directed to report to the State Board of Agriculture.

Pending the adoption of the above resolution, there was elicited the following

DISCUSSION ON STATISTICS.

E. B. Martindale. I think the publication of the statistics of the State should come under the supervision of the State Board of Agriculture, and should all be published in one volume, which would be much cheaper, and the information would then come from a source that would more likely be read than now. I suggest this resolution be referred to a committee with instructions to obtain their annual publication, and the same be placed under the State Board of Agriculture.
and published with its report, because it is agricultural statistics that is developing our State. I don't care if it is an independent officer; but the reports should be combined so we can find all this information in the agricultural report of the State. There was a mistake in coupling this with the benevolent institutions. The reports of the benevolent institutions to the Legislature include their report of statistics, which are gathered and published annually, and I can give no reason why agricultural statistics should not be coupled with the report of the State Board of Agriculture, where they can be sent abroad, showing the advance of blooded stock and improvement and advance in the drainage of land and development of the State of Indiana, teaching them what they do not know, and, perhaps, laying a foundation for a fortune. I move this resolution be referred to a committee looking to the preparation of, and passage of, a bill.

J. B. Conner. The Judge is mistaken in regard to the character of the annual reports. While it is true the report contains about one-fourth statistics relating to agriculture, the other three-fourths relate to labor, manufacture, mining, railroads, etc., and do not especially pertain to agriculture. The suggestion I was going to make in the matter of agricultural statistics was the have an agricultural bureau, through which all agricultural statistics might be collected. In the older States they have bureaus for different departments, such as labor department, commerce department, and several others. It has been found hard to find an expert who would take hold of those other questions and gather facts about them in tables and put in shape. These others don’t pertain to agriculture, such as labor, mining and manufacture.

E. B. Martindale. One man should not perhaps do all the work. I think there should not be two volumes embodying the same thing. This office, as it now is, is transferable on partisan issues. This would not be the fact if it were under the control of the State Board of Agriculture. Changing from one man to another is not so desirable, as it requires some time to understand the manner of compiling such reports.

J. B. Conner. Experience is a good thing to be governed by. The older States have found it desirable to divide this work. Ohio has separated from the Agricultural Bureau. They have their labor, commerce, etc., and publish their reports in two large volumes; so has Massachusetts, and all the older States have divided this work. It is a separate work, and requires a separate investigation. While the Secretary of the State Board would be capable of gathering statistics for agriculture, he might not be able to tabulate all the other topics, which publish from 400 to 600 pages.

E. B. Martindale. If Mr. Conner's theory is true, if carried out, we would have a volume for each department. If you can include the statistics of all these departments in one volume, what is the use of having more? What is the objection, when you put a man there capable of getting up statistics in all these departments and place him under the control of the Department of Agriculture, and publish the statistics with the Agricultural Report? Any one wanting to find anything in reference to manufacture or mining resources can find it in this work. The only point the gentleman makes is from the experience of the Eastern States to separate and put them in the hands of different men to get up these statistics.
It certainly would be better, if in the hands of the State Board, which is non-partisan. That is the point I make. I wish to say the States of Nebraska and Kansas and the Territory of Dakota spend money in furnishing statistics to the Eastern people who want to buy homes, while we spend nothing in that way for the development of our State, while theirs are building up.

J. B. Conner. If the Judge's argument is good, it should go farther. It should contain all the statistics from all the benevolent institutions. The Geological Department was with it when this was first brought about. The geological resources in the matter of the minerals are important to the agriculturist, yet the Legislature two years after the creation of this department divorced these two departments. They remain divorced. There is not that alliance of interest in this work that will likely bring about this kind of union of work.

Mr. Nelson offered the following resolution, which was adopted:

Resolved, That this Association appreciate the kindness that prompted the recognition of reduced rates by the managers of the several railroads centering at this place, and tender our sincere thanks for the favor.

The committee appointed on constitution and by-laws last year submitted, through its chairman, Mr. S. F. Lockridge, a new constitution and by-laws, which were adopted.

Messrs. Smith, Folsom and Bals were appointed an Editing Committee for the Shorthorn column of the Indiana Farmer.

The Committee on Programme, through its chairman, Mr. E. S. Folsom, submitted the following for the next annual meeting, which was adopted:

1. President's Address.
2. History of Shorthorn Cattle in Indiana, J. W. Robe, Greencastle, Ind.
3. Diseases of Cattle, Dr. Armstrong, Indianapolis, Ind.
4. At What Age and to What Extent Should a Bull be Used? Judge J. S. Buckles, Muncie, Ind.
5. To What Extent May In-Breeding be Carried with Profit? J. R. Brickart, Bluff Creek, Ind.
6. Shall We Specialize our Shorthorns Into Beef and Milk Families in Order to Compete with Beef and Dairy Breeds? George McCaslin, Franklin, Ind.
7. Winter Feeding and Care of Shorthorn Cattle, Isham Sedgwick, Richmond, Ind.
8. Local Shorthorn Associations—Their History and Importance, S. R. Quick, Attica, Ind.

The convention then adjourned sine die.
ANNUAL MEETING OF THE INDIANA JERSEY CATTLE BREEDERS' ASSOCIATION.

A very interesting and profitable meeting was held by the above Association on Tuesday, February 1. While the attendance was small, the interest shown was much greater than at any previous meeting of the Association. In the absence of the President, Vice President Howland presided. A communication was received and read from Mr. Frederick Bronson, President of the American Jersey Cattle Club, stating that a committee consisting of C. B. Stuart and Adams Earl, of Lafayette, Ind., and Samuel McKeen, Terre Haute, Ind., had been appointed to represent the club in the interest of the fraudulent pedigree bill now before the legislatures, and urging upon the members of the Indiana Jersey Breeders' Association to use all efforts to have the bill become a law.

On motion of Mr. W. J. Hasselman, a committee consisting of D. H. Jenkins, T. A. Lloyd and E. J. Howland, was appointed to look after this matter. Mr. Howland offered a resolution as an amendment to this bill, to the effect that associations issuing herd registers be made equally responsible with the offenders for errors or frauds, and liable for losses sustained by false pedigrees or registration. Mr. Howland stated that the idea was to make corporations or societies more careful. The resolution was opposed by several members, and was finally referred to the Legislative Committee.

The convention also expressed their approval of the bill now before the Indiana Legislature, establishing a Live Stock and Sanitary Commission. The Secretary reported the membership fee had been sufficient to pay all expenses of the Association, leaving a balance in the treasury, and that the first eighteen volumes of the Herd Register had been purchased and paid for.

The annual election of officers resulted as follows: President, Judge J. D. Conner, of Wabash; Vice President, D. H. Jenkins, Indianapolis. Directors: J. W. Sliger and C. C. Crocket, of Richmond; H. H. Wheatcroft, of Southport, and Peter Raab, of Indianapolis. The new Board of Directors organized and elected T. A. Lloyd, Secretary; W. J. Hasselman, Treasurer. The time for holding the next meeting was set for Monday, January 23, 1888, to be followed by a banquet, a committee being appointed to arrange programme for next year's meeting, consisting of Judge Conner, T. A. Lloyd and W. J. Hasselman.

There is reported to be $250,000 worth of Jersey cattle in Indiana, and there is no reason why every State should not have a prosperous organization of Jersey breeders to protect this interest. There are thirty-six members of the Association, and we hope that each one will use his influence to the end that we may have a profitable and pleasant gathering one year hence, and try to add as members those breeders who are not now associated with us.
THE QUEEN OF THE DAIRY.

BY J. D. CONNER, JR.

While article after article has been written and printed concerning the Jersey cow, it seems as though she is developing so many good qualities, and her worth as a town and dairy cow is being so conclusively proven by actual tests and experience, that she furnishes an inexhaustible subject upon which to write and comment. Reared on the Island of Jersey, 'mid the richest of flora and where the song of the feathered tribe is heard in all its richness and perfection, she seems to have been impressed by her surroundings, and she comes to us with the imprint of beauty and perfection in every part. With a coat, the color and shading and penciling of which rivals the work of the finest artist, and with limbs that equal the race horse, she possesses an outline that shows that the granite hills of her native home have also assisted the fertile valleys in giving her a rugged constitution and one adapted to make glad the owner of the dairy in which her milk and butter are deposited as he counts his profits at the end of the year. Inasmuch as the dairy is becoming one of the great sources of wealth of this country, it has become a matter of the greatest importance to discover, if possible, the most profitable dairy cow; one that will produce the greatest amount of profitable product from the least consumption and waste of food; and when this question is solved the subject will forever be at rest.

Of course, all the different breeds have their friends, who claim superiority for their favorites, but you can generally tell which way the wind blows by the way the straws fly, and I will venture to say there never has been a cow reared in this country, or imported here, that has caused such a furor, or been such a thorn in the flesh of the breeders of other cattle, as the Jersey. And why? Simply because she has distanced them in the race for favor with the practical farmers and dairymen of the country. And to-day, and for the past ten years, she has been the standard for comparison, and when the owner of any other breed has any mud to throw he fires it at the Jersey, but, like water on a duck's back, it does not seem to affect her, and she simply turns around and smiles good-naturally and goes right along picking grass from which to make a quality of butter that all admit is superior to all other. The most laughable thing is for a breeder of beef cattle to raise his voice, comparing the butter qualities of his breed to the Jersey, when we all know that it takes about two of his best milkers to raise one calf; and when he is talking of the great butter qualities of his cattle, you either find him buying butter of his neighbor, who keeps a Jersey, or he has a Jersey that he keeps hid behind the strawstack, when anyone is around, that furnishes the butter for his table, and the milk that he uses to color the cream of his ten milk cows he is obliged to keep for family purposes. I suppose the reason his feeble voice is raised is because when you call on a Jersey for anything she responds, and it has been found that if you cross beef bred cows on a Jersey bull the steers mature about one year sooner; and it is also said by those who have been fortunate enough to eat a steak from a two-
JERSEY CATTLE BREEDERS.

year-old Jersey, that in comparison with the steak of the ordinary beef cattle it is like a pie made of birds of Paradise—it makes a fellow’s mouth water to even think of it. But no, my friend, you need have no fear that we will try to make a beef animal out of her, as we can make enough out of her milk and butter in a year to purchase four or five beef bred steers, and have left the product of the twenty or thirty acres that it takes to support the beef animals. The fact of the matter is that it is only the friends of one or two breeds of cattle but who have given up and conceded to the Jersey the position we claim for her, Queen of the Dairy. Our Holstein friends claim, however, to still be back in the procession somewhere trying to catch up. I don’t know why it is, but whenever I hear the name Holstein I always think of “The Old Oaken Bucket That Hung in the Well.” This must be because as the bucket draws its supply from the well, which is fed from the entire farm, so does it take the products of an ordinary farm to support five or six Holsteins, or possibly it may be the near approach of the quality of their milk to the water of the well. While I never owned a Holstein, I have talked with men who have, and they tell me that they eat more than two or three Jerseys, with very little profitable return, except in the manure, and they seem to think that if a device could be discovered whereby a manure spreader could be attached, that as farm enrichers they would be a success, but not as dairy cows. The only objection I have ever heard to the Jersey are the prices they command in the market, and that they are the rich man’s cow, and their size for beef. It is true that they have brought fabulous prices in the past, and were too high to be within the reach of all, but under the business depression of last year, like on everything else, prices came down, and for one I am glad, and they are now within the reach of all; and the statement that she is the rich man’s cow is conclusive evidence to my mind that if those who have wealth with which to procure the best cow living take the Jersey in preference to all others, which is true, that she is indeed queen of all.

All seem to admit that the Jersey cow is the best and most profitable town cow there is, and why? Well, they say she is small and does not take up much room; that she makes more butter annually for the amount of food consumed than any other; that the quality is of the best; that the milk contains more butter to the quart than the milk of any other breed, and the cream rises quicker and is more easily churned; but they generally wind up by saying that she isn’t the cow for the farmer, because (1) she does not give a large enough quantity of milk, and (2) she is too small for beef. Now, I have never heard any other objections to her, and if we can answer these objections, by either showing that they are not true or that she ought not to possess those qualities of which they complain she lacks, certainly her right to the title she claims—Queen of the Dairy—should be conceded to her by all reasonable persons.

The only persons who say she does not give enough milk are our Holstein friends, and I don’t wonder at that, because they have to brag about some quality their cow possesses in order to create some favor for them, and all they have to brag about is the quantity of milk their cows give; but the quantity their cows give is easily explained, I think, on natural principles. The analysis of the milk of the Holsteins shows that a very large per cent. is water. Now, isn’t it more than
likely that the quantity they give is due to the fact that these big, slab-sided Holsteins eat and drink so much that the pressure of the food on the water forces the water into the udder, and of course it comes out with the milk; hence the quantity; but what of the quality? If we used milk for bath purposes this would be all right but even then it could be more easily obtained from the pump and at less expense. But my understanding is, that in determining the value of a dairy cow the only question is, what breed will make the most butter and cheese at the least expense and trouble?

If new milk is examined under a microscope it presents the appearance of a vast number of small granules, varying in size, which float in a thin, transparent medium. These granules are called cream globules, and it is from them that the butter is made, and the butter quality of the cow depends on the size of the cream globules, as the richer the milk the larger they are and the sooner they will reach the surface in the form of cream. The analysis of the milk of all breeds of cattle has shown that the cream globules of Jersey milk are larger than those of the milk of any other breeds, consequently the cream rises more quickly, which constitutes its peculiar merit for butter purposes. In milk that is poor in quality the cream globules are very small, and indeed some of them are so small that they would not rise through three inches of milk in a week, if the milk could be kept sweet that length of time, which explains why the coating of cream on the milk of large milkers is so thin.

Think of the struggles of some of these little globules trying to get up into the cream story through six or seven gallons of poor milk! I am not surprised that they never get there.

The expenses in keeping a cow are, the room she occupies, the feed she consumes and the time required to milk and to take care of the milk. The smaller the cow, of course, the less room she requires, and the less food it requires to keep up the carcass, consequently the less food a cow uses to support her carcass the more she will have out of which to make and enrich the milk; therefore, as a milk cow, the size of the Jersey is a point in her favor.

Again, all admit, and if they didn't the records of 1,500 to 2,000 Jersey cows, with records of fourteen pounds of butter and over in seven days, prove that her milk makes more butter to the quart than any other breed, consequently it is of necessity much richer, so that there is more profit from the same quantity, with the rich quality thrown in, than from the milk of any other cow. Again, it takes less time to milk one or two gallons than three or four, and less time to take care of it, and it occupies less space, which is another point in favor of the cow that gives rich milk. In short, what advantage is there in handling and caring for a barrel of milk and water to get enough cream for a few pounds of butter, when you can use an ordinary gallon crock and lift from it a yellow pancake of cream that has to be handled with care to prevent its striking against something and turning to golden butter? You answer, no advantage.

After the fact had been demonstrated beyond a doubt that the Jersey was superior to all others for rich milk and butter, some of our competitors that had tried to catch up and failed said, We admit you have a better butter cow, but when it comes to making cheese our cows are superior. Well, out of the kindness of our
hearts, we did want to leave them something to brag about, but they got too noisy, and while we had not tested the cheese question, we knew all we had to do was to halloo "Cheese!" in the ear of our Jersey Queen and she would respond.

We said all right, gentlemen; trot out all of your best cheese cows and we will make you "cheese" that cry also. Well, they all trotted out their brag cheese cows, and, like the whipped dog, went back with their tails between their legs, cleaned clear out, as the Jersey had established the fact that if there was anything she was real handy at it was making cheese.

Now, if the Jersey cow brings these advantages to the home of the town people, she will do the same for our farmers; and as these are the very foundations of economy and profit in a milk cow, she must be a source of profit to whomsoever she belongs.

As to the beef qualities, I don’t believe any one ever claimed that she was a beef animal, and as some one has said, “A Jerseyman would as soon kill his Jersey cow for beef, be she old or young, as would an East Indianam think of slicing a loin steak from the sacred white elephant.” Again, as a family, or breed, of cattle, more of them are large butter makers than any other breed, as is evidenced, as I have said, by the fact that there are reported from 1,500 to 2,000 with records of fourteen pounds or more in seven days. The proof also shows that they mature younger, consequently are profitable, and are giving milk while other cattle are being kept at an expense, without any profit.

Again, while there are phenomenal cows, as they are called, of other breeds that will make as much as twenty pounds of butter in a week, yet for a Jersey this is not phenomenal, as there are a great many that will make that much and we do not call them phenomenal until they make from 36 pounds to 46 pounds of butter per week, as the proof shows they have done.

And like everything that touches the American shores, and upon which the magical fingers of Uncle Sam’s children are placed, is improved until you would hardly recognize it as the same—so with the Jersey cow. Since she came to our shores her milk and butter records have been increased, as also her size, and to-day better Jerseys are found in the United States than on the Island of Jersey. And, with these facts before us, coupled with the recognized skill and care with which breeding is carried on in the United States, I prophesy that the Jersey of the future will be so far in advance of all others in excellence and perfection as a dairy cow that she will have no competitors, and all will acknowledge her queen of the dairy.

The people of our own great State of Indiana, with that disposition to obtain the best which has at all times characterized them, have invested their means to a considerable extent in Jerseys for city and dairy purposes, and she is found in every town, city and county of our State; and the quality of the Jerseys in our State gives the Jersey breeders of this State a standing of which we may justly feel proud.

And the above facts I think conclusively show that to-day this Queen of the Dairy occupies with reference to other dairy cows the proud position held by Maud S. and Jay-Eye-See, namely, so much superior to all others that none are able to successfully compete with them in a race.

25—Bd. of Agr.
TROTting AND PACING Horse BReEDERS.

The Third annual meeting of the Indiana Trotting and Pacing Horse Breeders' Association met in the rooms of the State Board of Agriculture, in the city of Indianapolis, January 28, 1887, at 2 o'clock p. m., D. L. Thomas, of Rushville, presiding.

President Thomas delivered his annual address, as follows:

ADDRESS OF PRESIDENT D. L. THOMAS.

In all ages the human race has had amusements peculiar to the people and the times. Rude barbarians invariably have sports corresponding to their conditions in life. And as civilization advances the character of the sports vary with new conditions. Society is always in a state of transition, and public taste is continually changing. That which delights at one period may be stale enjoyment to succeeding generations. But the inherent desire and necessity for amusement is ever present in human nature. And no nation of people needs diversion and recreation more than the busy American. Then, since there is a demand for amusements that can not be stifled, the duty of the hour is to supply them in a legitimate way and free from vice.

A glimpse at the sports of other nations and times may assist us in reaching a correct solution of the question at the present time. Nearly two thousand years ago the Greeks reached the acme of human wisdom and civilization. An account of their national games will ever be read with interest by students of history. These were fostered by the sympathy and enthusiasm of all the people. Their principal games consisted of boxing, wrestling, leaping, running, and hurling the spear. And every city of any size made provision for these sports, which were witnessed by the men, women and children. All classes came, far and near, to behold the gymnastic contests.

The most popular games were of a religious character, in which prizes of crowns were awarded. In the Olympic games, sacred to Jupiter, the crowns were of the wild olive; in the Pythian, sacred to Apollo, they were of laurel; in the Isthmian, of pines, and in the Nemean, of smallage or parsley. The competitors required a long and severe course of preparatory training. Those who taught the gymnastic arts prescribed to the athletes the kind of food, the quantity, and the hours when they should eat. Also, the hours for exercise and rest. Everything calculated to impair the nervous force was prohibited. In the Olympic contests these preparatory exercises extended over a period of ten months, during the last of which they were conducted under the supervision of appointed officers. The contests took place in the presence of a vast multitude of people. The games were
opened by the proclamation of a herald whose office it was to give out the name and country of each candidate, and especially announce the name of each victor before the multitude. The judge was selected for his spotless integrity; his office was to decide disputes and award the prize. The stadium or foot-race course was, in English, 600 feet and 9 inches. It was an oblong area, open at one end, and rounded in a semi-circular form at the other, along the sides of which were the raised tiers of seats on which the spectators sat. The judge was stationed by the goal, which was clearly visible from one end of the stadium to the other. There were certain rules prescribed for the races which the athletes were obliged to observe. They were to run on the part of the track assigned to them and were not to trip or jostle one another. In many respects the methods governing the Olympic games where the ambitious young Greeks were the performers are quite similar to those governing the training and trials of speed of the horse to-day.

Doubtless St. Paul, when at Ephesus and Corinth, attended these games, which were then so popular, and from them drew some of his most beautiful metaphors found in the best of books. The whole month of May was thus consecrated to the glory of the goddess Diana at Ephesus.

In like manner the trials of equine speed at the trotting and pacing gait is peculiarly an American amusement. This popular national sport has been smirched by fraud and vice. But these are extraneous, and are no more a part of turf sports than gambling in margins is a part of farming and raising meat and grain. Trickery, like a fungus growth, has adhered improperly to a legitimate amusement. But this excrescence is on the wane, and the masses patronize the turf sports for pleasure and recreation. There is no necessary connection between trials of speed and immorality. And vicious pretenders are being relegated to the rear. This Association can, and doubtless will, aid greatly in this reform.

Our Association has been organized for a two-fold purpose. While the feature of amusement always keeps prominent, with us the main object is to develop and advertise Indiana horses so that we may find a ready market at remunerative prices for what we breed. In short, we seek to combine pleasure and profit. We wish to demonstrate to the world that we have horse stock fitted for every requirement—size, speed, endurance and disposition. In the sulky we find the horse suitable for the plow, the team, the road and the family. We must keep it before the people. Should we attempt to rest on laurels already won, sharp competition will drive us to the wall. These are some of the thoughts your speaker entertained when he made the call that originated this Association.

Since our last annual meeting a dark shadow crossed our pathway. The King of Terrors called our cherished President, Francis M. Busby, to that bourne whence no traveler e'er returns. Genial, honest and efficient, we miss him and mourn our loss. Amid our labors and our sports we are reminded that we are ephemeral and death awaits us all.

I refer with pleasure to the success of the past year. Considering the infancy of our Association—without prestige and without wealth—the exhibition of our stake races was a success in every respect. With the hearty coöperation of our horsemen the organization is destined to take front rank and fulfill the purpose of the Association.

**DISCUSSION.**

*Geo. H. Gifford.* I wish to call the attention of the meeting to the importance of appointing a delegate to the National Association to confer with other delegates as far as possible and adopt a uniform rule for the United States to determine more definitely where the colt is bred to entitle it to trot in the races of this association.

*W. P. Ijams, Terre Haute.* If we are to infer from what the gentleman has said that there is to be a meeting at some given point for this purpose I have not heard of it. If that is the case it would be well for us to appoint a delegate.

*W. H. Wilson.* Indiana might take the lead and ask for it. I suggest that the Indiana Trotting and Pacing Association correspond with the Breeders' Association of the United States and ask to have delegates appointed to settle this question. We want it so we can all agree on the same given point. There should be a uniformity in this matter throughout the United States so as to regulate the paternity of the trotting colt. We want this regulated so as to ascertain who the breeder of the colt is. This is something we should understand.

A motion embracing the above recommendation was carried.

*W. P. Ijams.* I wish to ask the chair if we are going to do anything at this meeting in reference to the Breeders' Meeting of Trotting and Pacing Horsmen next summer. I should like very much to have the next meeting at Terre Haute. We will get the grounds free, and it is where we can handle rates and get more people to attend the races than we can here. We have a better track and better accommodations. It is to the interest of those who hold stock to make the best time possible. I want to get this idea before the Association.

*D. L. Thomas, Rushville.* It has been the policy of the Association not to set the time before corresponding with men in different places, and after we are advised of the advantages and inducements presented, it has been customary for the committee to decide where, in their judgment, it would be to the best interest of the Association to hold the State races. The Chair holds the opinion that it would be right to now hear views in favor of time and place.

*W. P. Ijams.* I do not aim to set the time, but I would like to state to the Association that we would be glad to have it held at Terre Haute, when it is held. We will give the grounds free. I would like to hear from the members of the Association on this subject now.

The convention went into the election of five members to fill vacancies on the Executive Committee, resulting as follows: John T. Stevens, N. A. Randall, J. N. Dickerson, Charles Curtis and R. J. Wilson.

*D. L. Thomas.* We do our work so fast we don't get it before the public as we ought to. We should have more time and not hurry matters through so rapidly as we have done heretofore. I have a circular from the State Board of Agriculture; they give a program. As no arrangements have been made for a program, shall we adopt the roll of business here laid down?
Mr. Ijams. It would be well for the Secretary or Executive Committee to adopt a form of rules for the transaction of our business. We come here and enter upon our business in a haphazard manner, which is unsatisfactory. We should have a regular program, and then when we are through with that, we will feel that the business of the meeting is completed. I do not know whose business it is, but we must have something of this kind. Either the President or Secretary should look after this, and adopt a regular form or order of business. I suggest that hereafter, at our annual meetings, we adopt the following order of business:
1. President's Address.
2. Calling the Roll.
3. Reading minutes of preceding meeting.
4. Reports of Secretary and Treasurer.
5. Reports of Committees.
6. Motions and resolutions.
7. Unfinished business.
The order of business as designated above was adopted.
W. P. Ijams offered the following:
Resolved, That it is the sense of this meeting that we have the next breeders' meeting at Terre Haute.
Pending the adoption of the resolution the following discussion ensued:
J. T. Stevens, Peru. We are not quite ready to go to Terre Haute. I would like to have it at Peru. We will give as good grounds as can be found in the State of Indiana, and the privilege of holding the meeting as long as you wish. We will put the ground in good order, work for it, and give $200 for the meeting. Not that I have objections to Terre Haute, but it is right to move around.
R. J. Wilson, Rushville. I would like to have it at Rushville. We have an excellent track there.
A. C. Remy, Indianapolis. They have good grounds at Rushville, but Indianapolis is larger. You will find no more clever people than at Indianapolis, if the association meets here. Some inducements might be offered by the State Board. Besides, it is the geographical center of Indiana, and no one can grumble on that score. I like the people of Terre Haute, but I feel that somebody should say something for Indianapolis.
W. H. Wilson. In order to elevate the value of trotting horses we must have good tracks to trot on. Unless we do we can not show our colts to advantage. With good tracks Indiana can show some excellent trotters. In order to place our horses successfully before the public you have got to find a fast record. I have trotted horses in various places throughout the State, and I must say that the track at Terre Haute is far better than any other in the State. I want to say that I am favorable to Terre Haute.
G. H. Gifford. While there are many good citizens in Indianapolis who would like to have the races here, I must say that the track is bad. Of those who attended last year, but few were residents of the city, but were people from over the country who spent what little money they had to see the show. I feel that Indi-
anapolis is the best place for the races. We like to advertise the capital of the State. It is the point we can all reach most readily by railroad. Many who would come here would not go to other places. It is a point at which to hold a State meeting and not a sectional meeting, and it becomes of that character if we go out of the city. They formerly had a good track at Peru. I like my friend Mr. Ijams and the people of Terre Haute, but I think it is not best for the association. Indianapolis will do us more good; but on the other hand there are difficulties regarding the present track. When we went to Cambridge City a few years ago to make an exhibition, we came out in debt. Let us stick where success is promised, and hope that the State Board of Agriculture and wealthy citizens will aid in making a track where we can trot our colts and develop at a central point the horse interests of Indiana. As far as giving our horses a record, it might be well to go to Rushville or Terre Haute; but in the long run it is better to remain here.

W. P. Ijams. The gentleman has made a good speech, but the inducements are not sufficient to bring it here. I have lived at Indianapolis for ten years, and the business men nor the State Board of Agriculture will do anything toward making a better track. If you wait until the business men build a track and put up money to trot, you will never get there. If I am going to breed horses I want to sell on record, and I want to make the best record I can. To do that we must have a good track, and I think the best one is at Terre Haute. I won't start a horse on the track at Indianapolis. They won't offer any inducements to go. The people won't patronize it. You made only nine dollars more than expenses last year. You can not get a record here. The fastest last year was only 2:50, and one or two colts were worn out with one or two heats. We must have a better track if we have to go somewhere else to get it.

Mr. Wilson. If we want to find a good track let us go to Terre Haute. In speaking in favor of Terre Haute I thought it was for the interest of the Association. I will be one of 100 men who will give $1,000 apiece toward raising $100,000 for building a trotting course at Indianapolis. It is as good a place as any in the United States. If we can find enterprising men enough to do this it would be the proper thing to do.

Mr. Remy. I will be one that will give another $1,000 dollars toward building a track at Indianapolis at any time. I appreciate the remarks of Mr. Ijams except one thing—that of wanting the Association to meet at Terre Haute. He can get here if the track was good. Let us do the best we can until we get a better one. If those gentlemen turn out well this season, and we can not get the State Board to improve this track, then I will join with Mr. Ijams to go to Terre Haute. Indianapolis is geographically in the center of the State, which is an inducement for visitors to come here.

Mr. Voss. I am glad to see people willing to put up money to build a track in Indianapolis. I will be another who will donate $1,000 and give my time and labor to it. I have done much to get people to come out and use their influence to get others, and had a hard time to get them here. We have good horses here that can make as good time as any horses in the country. Why we should stand back and let the world go ahead of us I can not understand. If we take hold of
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this matter in earnest we can have a track at Indianapolis second to none in the United States.

Mr. Ijams. I have just as much interest in Indianapolis as Terre Haute. While the grounds here belong to the State of Indiana and are controlled by the State Board of Agriculture, they are too small. At the time of the fair they are so full of people you can't turn around. Our fair grounds do not rank anywhere with the large fairs. You can't get money out of those men for the benefit of the State at large with no right to control it. I am not going to do it. If they will cut loose from the State Board entirely and talk about this fair association I will go every time. We need eighty acres of ground, and they have only about forty. We have no place here to make a record, and if Indiana ever expects to take rank as horse breeders we have got to go where we have tracks. The track here is in such condition we can't go fast. I am willing to help the State Board if they will help us. If I am going to trot I want to breed horses for that purpose. This thing of fighting record, you stand in your own light if the colt can't go fast; he is no credit to the dam. We can not go fast in Indianapolis. In getting up subscriptions to build this track I will do as much as any man when the time comes. I want to get the sense of the meeting as to what we should do. You have all been to the St. Louis fairs. Horses go there from different parts of the United States. Did any of those horses come here? Not any. Why don't they come here? Because there are no inducements offered. If a horse did start on the track you could not see him. There is no comfort out there, it is so crowded. I have the State Fair interest at heart, agricultural societies, State Board, and everything that tends to develop the interests of the State, but I don't want to bring my colts here and start them on such a track as we have now.

Mr. Wilson. This hundred thousand dollars we want to raise is to buy land, build a track, as I understand, and not fix up the State Fair track.

Mr. Remy. When we meet for the purpose of selecting a place let us all agree, and then go ahead and do the best we can.

George Gifford, Tipton. I therefore move that a committee be appointed to canvass the city and State and see how much money can be raised with which to buy land and build a track. The motion prevailed, and the following committee appointed: A. C. Remey, Indianapolis; R. J. Wilson, Rushville; J. Voss, Indianapolis; M. L. Hare, Indianapolis; J. W. Browning, Indianapolis, and A. N. Randall, Indianapolis.

M. L. Hare, Indianapolis. I have listened with much interest to the remarks in regard to our next meeting. What is of interest to one is of interest to all. It is of interest to the State as well as to ourselves to breed horses to trot fast. If we breed good colts we want to get somewhere to trot them. We can breed horses here to go as fast as in Kentucky, New York or California if we give them the right treatment. For myself I want to go where I can trot fast and see that the track is good. It is to the interest of this association to go where there is a good track. I am more interested in the City of Indianapolis, but I am favorable to going to Terre Haute if it is thought to be to the interest of the association. I can beat 2:40 on this track.
B. T. Beyford, Danville. I want a good track. We can not gain a record unless we have it.

J. T. Stevens, Peru. We have as good a track at Peru as there is in Indiana. I would like to have the meeting there. We propose to be liberal and furnish a track as long as you want it, and we will give a bonus of $500 if the meeting is held at Peru, and agree that the track shall be in good condition. A track a mile long, 70 feet wide, good stalls and water and every convenience for the comfort of the horses. While gentlemen are discussing the merits of different places I want to hear something about a bonus. We want something to help us out. The location of Peru is a little out of the way, but I will give bond right here that a bonus of $500 will be in readiness.

Mr. Ijams. Gentlemen, a bonus of $500 is a strong inducement, and I move that the invitation and proposition entertained by John T. Stevens, of Peru, be accepted.

The motion prevailed.

Mr. Gifford. Indiana as well as other States is interested in trotting horses. The National Association as managed in the East fails to give pacers recognition. I would like to have the feeling of this association as to whether we shall ignore it or send a delegate to represent us. We should demand recognition. Nearly all the best trotting horses have come from pacing blood. We should send a man with ability and courage to meet those gentleman and demand our rights in the National Association, and not stop there, but confer with Illinois, Michigan, Kentucky and our sister States and vote these men down, and have the pacer's rights recognized. I, therefore, offer the following:

Resolved, That this association send a delegate to the National Association to represent our pacing interest, and ask every association in the Northwest to do the same.

Mr. Voss. Now is the time that this can be got through. Harry Brooks, the best colt in the world, had a pacing dam. We have not asserted our rights. I think we should send a delegate there to see that we are recognized, and have an effort made for breeders to give prizes and sister States to take more pains in writing up pedigrees.

The resolution was adopted and Mr. Gifford appointed a delegate to the National Association.

D. L. Thomas. We need some legislation in our interest. I hope there will be something done before the adjournment of the Legislature.

W. H. Wilson. I hope that every member will do all he can to aid the passage of House Bill No. 84.

J. W. Browning. I move that the Chair delegate four or five from this association to wait on the committee of the Legislature having this bill in charge, in order to get the bill through.

The motion prevailed, and J. W. Browning, N. A. Randall, M. L. Hare, J. Voss and George H. Gifford were appointed as such committee.

The following resolution was adopted:

Resolved, That the Indiana Trotting and Pacing-Horse Breeders' Association approves the bill now before the Indiana Legislature giving a lien upon the prod-
uct of any stallion kept for service, and hope the General Assembly will pass the same during the present session.

The Association adjourned. The Executive Committee convened immediately upon the adjournment of the Association and organized for the election of officers.

On call of the members of the committee thirteen responded. The balloting resulted as follows:

President—D. L. Thomas, Rushville.
Vice President—Geo. Gifford, Tipton.
Secretary—J. S. Darnell, Lebanon.
Treasurer—A. C. Daily, Lebanon.
Convention adjourned sine die.
WOOL GROWERS.

The Wool Growers' Association, of Indiana, met in the Rooms of the State Board of Agriculture, January 25, with President Nelson in the chair.

J. W. Robe was appointed Secretary pro tem. in place of I. J. Farquhar, deceased.

Promptly at 2 o'clock P. M. Vice President Henly was called to the chair, and President Nelson delivered his annual address as follows:

GENTLEMEN OF THE WOOL-GROWERS' ASSOCIATION: It is with unfeigned pleasure that I greet you again at our annual meeting, remembering that our interests as wool-growers and sheep breeders one year ago seemed to be under a cloud, so much so that it required courage of a very decided order for a person to proclaim himself a wool-grower, and one that was there to stay under all the adversities that beset us at that time. But thanks to the perseverance of our small but Spartan band, we are here to-day with countenances beaming with satisfaction at the prospect before us. The Rubicon has been passed, and to-day a healthy demand exists at fairly remunerative prices for the products of sheep husbandry. The prices of wool have advanced at least 25 per cent. since our last meeting, and that of mutton in about the same ratio, and while the demand for wool may not be strong at this season of the year, the feeling among holders is that of firmness; there are no anxious sellers, and the indications point reasonably to good and remunerative prices for the forthcoming clip. The flocks of the State, as far as my observation has extended, are in a reasonably healthy, and for midwinter, a prosperous condition, and the possessor of a beautiful flock of sheep of any of the improved breeds is to-day serenely happy, and desires, above all things, that there should be no more agitation on the subject of tariffs on foreign wool, as the prospect is good for reasonably cheap woolen goods and fairly remunerative prices for the products of sheep husbandry. All parties, seemingly, can do well, the wool-grower and manufacturer of woolens alike, so we desire to be let severely alone, and I deprecate any allusion to tariff reform as regards wool and woolens at this time by our association as unwise and contrary to our best interests. Let us have peace.

While the wool grower is in a fairly good condition as regards the health of his flocks, what is the condition of our contemporaries of the Cattle Breeders' and
WOOL GROWERS.

Swine Breeders' associations? They are sorely perplexed with the dreadful apprehensions—and well they may be—of those terrible diseases and scourges, pleuropneumonia and swine plague, the latter of which is devastating the lands in almost every hamlet of the State. They certainly deserve and ought to receive our sincere sympathy, and I would recommend that suitable resolutions expressive of our cooperation in their behalf for the passage of stringent laws by our State and national legislatures as will effectually suppress and wipe out all contagious and infectious diseases that now threaten the health of all domestic animals. This is somewhat of a digression from the consideration of the interests of wool growers, but I hope it will not be considered as entirely out of place.

During the past season a somewhat unusual demand existed for our medium wool from foreign countries—England and France—and while we are importing large quantities of foreign wool, those countries named are buying largely of our medium wool. I regret that I have not at hand statistics showing how much has been exported in this way.

What has brought about this rather unlooked for demand for our medium wool? The climate of our country is perhaps next to England and Scotland the best for the production of medium wool of any part of the globe, and while Australia has capacity to raise enough wool to supply all the demand needed for the world's supply were it of the right kind, yet Australia, with all its advantages as a wool-producing country, has too dry a climate for the favorable production of medium wool. The finer grades will succeed better as the sheep producing that class of wool are better able to withstand the dry climate of those countries; hence I take it that Indiana will be likely to find good sales for all the medium wool that her flockmasters can produce. What should be the lesson that Indiana wool growers ought to learn, presuming that the above recital in regard to wool producing in other latitudes is correct? It certainly should be to pursue the even tenor of their way, striving more in the future than in the past to secure the best of the improved breeds now so easily obtained, and for which our State has proved to be well adapted, and still press forward improvements in the way of securing a better sheep for our climate than has yet been produced. I doubt very much if perfection has been reached in the production of a sheep combining all the requisites of a first-class wool-producing, as well as a first-class mutton-producing animal, as we well remember that what Bakewell, and others contemporaneous with him, regarded as a good combination sheep is no longer regarded in that light by the professional sheep breeder of the present day.

DISCUSSION.

S. W. Dungan. It is customary to appoint a committee to which the address should be referred. I have been much pleased and encouraged with our President's address, and, therefore, move that a committee be appointed for that purpose.

I. N. Cotton. I suggest this committee prepare appropriate resolutions concerning our dead Secretary.

The Chair appointed Messrs. S. W. Dungan, Fielding Beeler, J. L. Thompson, John McGaughey and C. A. Howland a committee on the President's address.
Fielding Beeler. In connection with the death of Mr. Farquhar there have been two other deaths, that of Oakly Pursell and Charles Moffit, both of whom have been members of this association. I move that the death of these two be referred to the same committee.

The motion prevailed.

Mr. Mitchell. There is a strong effort being made by the stockmen to meet together in conference, for the purpose of getting a general expression in regard to legislative action for the suppression of contagious diseases among live stock. I have taken pains to call the cattlemen for a conference and see if we can get enough influence before the Legislature to pass a bill for the protection of our live stock. I suggest this meeting be held here at 10 o'clock tomorrow. This is done to get a general expression from all breeders, and secure influence enough to get up an appropriate bill for the Legislature to pass. A bill is now in the hands of Judge Buckles, and comes up for special action at 2 o'clock to-day.

Mr. J. L. Thompson, Treasurer of the association, submitted his annual report as follows:

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<th>Description</th>
<th>Amount</th>
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</thead>
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<td>$3 43</td>
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<tr>
<td>Received from Secretary Farquhar for dues.</td>
<td>23 00</td>
</tr>
<tr>
<td>Amount on hand Jan. 25, 1887</td>
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</tr>
<tr>
<td>Paid Secretary Farquhar per order, Nov. 1, 1886</td>
<td>$3 83</td>
</tr>
<tr>
<td>Paid W. J. Carter, reporting (see voucher)</td>
<td>11 00</td>
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<td>14 83</td>
</tr>
<tr>
<td>Balance on hand Jan. 25, 1887</td>
<td>$11 60</td>
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S. W. Dungan read the following paper on

"SOCIAL RELATIONS AMONG BREEDERS NECESSARY TO ADVANCEMENT."

Man is a gregarious being. Men in every stage of civilization segregate themselves into communities, thus exhibiting the social element which enters so largely into his nature. Men have always formed families, though sometimes in a rude form. The family formerly grew into the tribe, and the tribe expanded into the nation. Men have always sought to dwell in neighborhoods, in towns or in cities. People will forfeit the enjoyment of liberty, sunshine and fresh air to dwell in great cities until these cities enumerate 100,000 or 1,000,000 or more inhabitants. One of the greatest evidences of man's social nature, and, at the same time, one of the highest compliments this quality has ever received, is the fact that the Christian religion is perfectly adapted to it. "Pure and undefiled religion" will not flourish in the frigid regions of aristocracy. It grows best where there are warm, generous hearts, and deep fraternal feelings. The fact that there have been cloisters, and there has been rigid asceticism in religious name does not vitiate this argument, for Christianity, as its author gave it, must be perverted to produce these things. The anchorite and the hermit are not its legitimate results.
WOOL GROWERS.

The first place the Master took his disciples, when they entered upon their great work, was to a wedding feast. Here, amid social festivities, they sought a reaction from the stern and severe preaching of the prophet of the wilderness. The deep hold which the social faculties have upon human nature is seen in that one of the stubborn obstacles to temperance reform in America, is that, in this country, men drink socially. Thousands of men are ruined by drink in this nation because the devil has fastened this vice onto the social nature.

If a man is hungry or cold he goes and buys food or clothing for himself, but if he expects to drink, he seeks extensive companionship, and by the time half a dozen or a dozen men have each treated all the others, they are all "gloriously drunk." Mr. Murphy, the great temperance lecturer, said in our town (Franklin), recently, that there was more sociability in the saloons than there was in the churches. I am sorry to say that there is too much truth in this remark, although some took exceptions to it.

Again, the power of the social nature is marked in the effect upon our lives which our companions have upon us. We are all as susceptible and plastic as wax. We all unconsciously strive to conform to the standard established by some friend.

The pupil is dutiful because of his regard for his teacher's opinion of him. Men and women are noble and true largely because of the good opinion their friends have of them. We are galled if we think we forfeited the esteem of a valued friend. So our ability to lead correct lives is increased by the number of friends we have whose moral standard is high. Thus, friendship becomes a golden chain in which each friend is a link, and this chain holds us in our place.

Mr. Garfield, in addressing a body of his constituents just before his election to the Presidency, said that his friends in his Congressional district had been a wall of fire around him, and their good opinion of him sustained him in a life of rectitude.

Again, the cultivation of the social qualities is necessary for the successful prosecution of all kinds of business. The selfish, cold man is unfit for the transaction of business. There is an intrinsic value in a genial, fraternal disposition. It was once said of a Vice President of the United States (Colfax), that he was a great man because he knew everybody. Every man whose heart does not throb in unison with his fellow-men, and who has not the milk of human kindness in his breast, is shorn of power. It is no matter of wonder that one of the great benevolent orders has caused one of the three mystic links to represent "Friendship."

Again, the cultivation of the social faculties is largely conducive to man's happiness in all the relations of life. We cannot live within ourselves. We are all dependent on each other for happiness. "From the cradle to the grave" we seek companionship. I was about to say that the man who has the largest number of true friends is the happiest man. Friends contribute to our happiness by sustaining us in times of calamity. In California girders are made by the trunks of trees which are laid upon the ground and fastened to houses to sustain the house, or possibly to keep it from falling into a chasm when earthquakes occur. Every friend, every social relation is a girder which sustains us in every day of adversity. And friends contribute to our happiness in times of joy. If we hear
good news the first impulse is to find some one to whom we may tell it. We can
not enjoy good fortune without companions. Heaven would not be heaven with-
out the throbs of friendship, and this world would be too cold and cheerless for the
abode of man but for its warm, genial and fructifying influence. Yes, we repeat,
we are dependent on each other for happiness. No man liveth unto himself. We
live by, with and for each other. We are all exerting unconscious influences upon
each other every day. A thought, like a pebble cast into the ocean, may send its
waves to foreign shores. When a great man (Henry Clay) died one wrote:

"The impulse that his spirit gave
To human thoughts' wild, restless sea,
Will heave and throb in every wave
Of that great deep eternally."

We cannot better close this part of our subject than by quoting these words
from Scotland's bard, they being taken from his "Advice to a Young Friend:"

"Ay, free, off-hand your story tell
When with a bosom crony,
But still keep something to yourself
Ye'll scarcely tell to any."

Social relations among breeders are necessary to advancement. People in every
occupation or avocation of life form societies for the promotion of each others'
interests. The word society implies "fellowship, or union of many in one inter-
est." They are profitable for the exchange of views and opinions; therefore the
social powers are brought into requisition at once, and we affirm are absolutely
necessary to the growth and advancement of any organization. The cold, selfish
man has no disposition to exchange opinions and sentiments with his fellowmen.
If he knows anything that would contribute in any way to their good or happiness
he would not tell it.

These organizations help us to defend the common interests of its members, to
dignify and magnify the same. Organization and social relation are synonymous
terms; one can not exist without the other. The Indiana Wool-Growers' Associa-
tion had its origin in a social meeting. Three neighbor wool growers of Johnson
County met some time in the early autumn of 1876; it was not their first meeting;
they had been in the habit of visiting each other at their respective homes for the
purpose of examining their flocks, telling each the other what they knew about
raising sheep, and occasionally weighing a big lamb and reporting it to the Indiana
Farmer. One of these men was Mr. Brewer, the first President of this Association,
and one of the pioneer breeders of pure Cotswold sheep in Indiana, and who would
be with us to-day but for advanced age and bodily infirmities. The other one was
Mr. Pearson, who passed from earth some four years ago, and whom we believe is
in the presence of the Great Shepherd above. He was a man of superior social
qualities and possessed many noble, manly virtues. He was a charter member of
our Association, and faithful and true to its obligations to the last. The third
one, the writer of this paper, completed the trio. When the parting time came at
this particular meeting of which I speak, Mr. Brewer, if I remember correctly,
said: "Gentlemen, these social meetings and visits have been both pleasant and
WOOL GROWERS.

profitable to us, but I have been thinking for some time about us making an effort to organize a wool-growers' association, so that we may be enabled to take all the wool growers of the county into our experience meetings." The suggestion met with marked approval, and before we separated we had arranged to call a meeting through the county papers. The time for the meeting came, and we were not a little surprised to meet ten or a dozen wool growers of the county ready to go into an organization. Time will not permit me to give a full history of our beginning, suffice it to say that our organization soon extended its membership to other counties, and in a short time a motion prevailed to make our organization a State Association, and a meeting was called at Indianapolis.

I shall never forget that meeting. It was the coldest and most disagreeable evening of the cold January in 1876. The Indiana Swine Breeders, had been in session a day or two and were holding a short final session that evening. Mr. Heron kindly offered us a room, and I assure you it was amply large for our accommodation, as there were only four of us. I felt "awful" cheap (as I had been a strong advocate of forming a State association, while some predicted a failure if we undertook it). But I now began to feel that my ideal State Wool Growers' Association was only a delusion. However, we held a short consultation and decided to go into the other room and hear the Swine Breeders through and state to them the object of our meeting, with perhaps only a faint hope of enlisting their sympathies. In a short time the Swine Breeders adjourned, and we called the house to order and kindly invited them to tarry with us awhile, after making a statement of the situation. The Swine Breeders treated us very cordially, and encouraged us to go on and make another appointment. It was but a short time, however, until they pounced onto the dog and pelted him until nearly 11 o'clock. Every man stood with us and we found by their talk, and experiences with the dogs, that some of them had good flocks of sheep, and before we adjourned several expressed a desire to become members if we succeeded, and after a good, jolly, social time, we adjourned with fair prospects of success. Now I speak of this meeting more particularly to illustrate the importance of breeders and associations of men representing certain classes of domestic animals, recognizing and cultivating social relations with similar organizations, representing other domestic animals, and I can not leave this part of the subject without saying that had the Swine Breeders shown a selfish spirit and said by their actions, "Well! you're a pretty looking set of fellows to organize a State Wool Growers' Association; you'd be better off at home; we can't help you; it is all we can do to look after the hog," we possibly might not have had an Indiana Wool Growers' Association, and the able papers and discussions on topics pertaining to the delightful branch of sheep husbandry, which has occupied a space of fifty or more pages in our Indiana Agricultural Reports annually for the past eight or ten years, would have been lost to the thousands of readers who have reaped much benefit from them. We can not particularize as to the growth and advancement of our association, but will say that in less than four years from the meeting of the four discouraged Wool Growers we had a membership of nearly one hundred and fifty, among whom were many of our most distinguished stock breeders and agriculturists. As I am, perhaps, more familiar with its history than any one else (being the only charter member now in it, and never
having missed more than one or two meetings in its entire history) I want to say that in my opinion the social feature of our organization, which has ever been a prominent one, has contributed more to its growth, advancement and continued prosperity than all other elements combined. I doubtless voice the sentiments of all my brother Wool Growers here to-day, when I say that the kind friendships and pleasant associations I have formed at these meetings will live fresh and green in my memory, when the many topics we have discussed shall have been forgotten. Yes, these will live as long as memory itself lives.

And as I think of the noble and true men who met with us in former years, whom fortune has dispersed and death has removed from our number, and the many who are still in the ranks, true to their colors, whose hands we hope to clasp at this meeting with an inaudible “God bless you,” we are made to exclaim, “Oh, how holy is friendship, and how sacred the thought of true friends.”

DISCUSSION.

Dr. Ryland T. Brown, of Indianapolis, was invited to address the Association, and responded as follows:

I am very much advanced in years, and can not attend all the State meetings of the stock raisers that occur during the months of January and February, and I have abandoned any effort at trying, but I never let the wool growers' meeting pass, if I am in the city, without attending. That is not because I am a wool grower by any means, but the result of early impressions. I was born a shepherd, and it was my business as long back as I can remember. I lived with the sheep all the time I was on the farm, and had the care of them. I became familiar with their habits and instincts. There was one thing I noticed, that was, of all our domestic animals the sheep is the most social, and living with them and caring for them cultivated my social nature largely. All history shows that the shepherd leads a seemingly solitary life, yet some of the finest social qualities grow out of the shepherd's lot. The great poet king of Israel obtained many of his fine qualities by living with the sheep, I have no doubt. Again, I think, with all the apparent discouragement the wool growers of the United States have encountered lately in the poor demand and low prices of wool, notwithstanding all that, I think that this country is destined to be a great wool-producing country. After looking over the entire field, I know of no other country but this that can produce to perfection every kind of wool we demand from every kind of climate without regard to temperature, moisture and elevation. We have it all. We can locate on low ground for our coarse and common wool, and look after more elevated regions for the medium, and our dry pastures for fine wool. We can equal any of the mountain regions of Spain or of Saxony. There is another matter. When we talk of laying a duty on foreign wool we escape one of the troubles that lies ahead of the man who looks at the tariff problem in other matters. The time will come when we will more than supply all the demand. If the manufactured articles exceed the demand of our own people in the United States, then we must
WOOL GROWERS.

enter foreign markets, and in doing so we must enter into competition with the same article produced with labor at half the price. This problem is not solved yet. But wool growers will never be able to meet the demand of the American people for wool. By and by it will be understood, and is now to a great extent, that of all the material it is indispensable, and that at all seasons of the year wool is the best article for clothing. Any man who studies hygiene understands that wool, for all seasons of the year, is the best article for clothing for the price. Wool comes within the range of everybody, and is best adapted for comfort and health. The wearing of woolen goods retains on the body a uniform standard of heat. A man in health is no warmer when the thermometer indicates 90° than when it is at zero. The thermometer donates that health demands a uniform temperature, and by the use of woolen clothing this may be attained to a very great extent. The temperature outside is now too hot and then too cold; it varies every day in the year, from morning to noon and from noon to night. We want to interpose in this ever-varying atmosphere around us a uniform temperature and non-conductor. If we are too cold it won't convey the heat away from the body, and when the heat gets up too high it won't conduct this to the body. If we can put something like this, as a non-conductor, between the body and outside atmosphere it will be a wonderful help against atmospheric changes. When I practiced medicine people used to laugh at me for riding with a long flannel coat on during the heated days of summer. Others would don their linen. When I went in the long sunshiny lane with this coat on it served its purpose well. When out at night my flannel was just what I wanted. While wearing this kind of clothing I maintained good health. Wool is the clothing of this country.

C. A. Howland, Marion County. I was a spectator at the first meeting of this association, and was somewhat amused with that convention. There were but few here, but all enthusiastic in the cause. I have no doubt, as the essay says, and as Dr. Brown asserts, that those who are associated most with sheep become gentle, and I do not know but what the sheep business has been as profitable and done as much for Mr. Dungan as he has done for the sheep. [Laughter.] For truly there was and has been considerable improvement in the gentleman since that convention. [Renewed laughter.] Whether we should say that such and such are self-made men, or whether it would be better to say they are sheep-made men [continued laughter], I will not judge of the point, but it does strike me that the social qualities of the sheep breeders are above any other breeders of live stock.

Nixon Henley, of Monrovia, read the following paper on

"THE SIGNS OF THE TIMES."

GENTLEMEN—The subject assigned me to prepare a paper on, is one, perhaps, that there may be a vast range of speculation upon. It is suggestive of speculative thought—"The Signs of the Times." It does not require prophetic vision to look back over the pages of the past. A wise statesman once said, "We have no way of judging the future but by the past," and in looking over the wool growing and mutton interests of the United States for the past year, we find some new contingencies to the interest, especially of the wool-growing interest.

26—Bd. of Agr.
1st. We find ourselves the subjects of a republic that has undergone some radical changes in consequence of the great change in the administration of government. It is a fact, revealed to us by history, that when capital is idle it will accumulate at the money centers, and in consequence thereof skilled labor becomes less required as factory after factory and foundry after foundry is closed for want of capital to push their business forward; when interests run high and produce low, and wages consequently low, and the laborer becomes dissatisfied and discouraged because the skill he has acquired by hard labor and close study, and upon which he relies as much for the support of his family and the education of his sons and daughters as does the capitalist upon the safe investment of his capital for his resources for the same purpose. But to get to the signs of the times for the wool and mutton interests. When we go back to the beginning of the year for the wool market, we see it opened, in January, very quiet, and with but a moderate stock of wool in the eastern market, and but little in the country to come on the market. At this time manufacturers found that foreign markets would admit of their importing wool more largely, and, also, that increasing quantities of cheaply made yarns and goods were being sent to this country and underselling domestic productions. The uncertainty produced by labor troubles, and by Congressional agitation in regard to the reduction of tariff, had the effect to cause manufacturers to refrain from purchasing up to May 1. In fact, so little was sold from January 1 up to May 1, that many buyers were in the market before the clip arrived in order to get the needed supplies. On the 1st of May the early wool of Texas, California, Kentucky and Southern Ohio commanded a higher price than was anticipated, ranging as follows: Ohio fleece, washed, from 27 to 35c.; unwashed, from 23 to 28c.

It seems from the reports of the markets on the 15th of May that the growers are not willing to sell at last year's prices, but will expect an advance, and at this time it looks as though they would see some advance, as from report the manufacturers have but a light stock and must buy soon. From May 15 to June 1 there was a depression in wool, caused by the decline of foreign markets, which permitted large importations of cheap wool and cheaply-made yarns. But the advance at the Antwerp sales, and the reaction in the London and other European markets, caused an improved feeling in this country, and at this time, June 1, the manufacturers here were watching and looking forward to the London sales for June 15, and the result of those sales cut quite a figure here, for the prices realized caused quite a firmness in American markets, and buyers were not afraid of being undersold by imported goods. Then on June 15 the market is still strong, but not any material change in prices, all buyers looking forward to the European markets. July 1. The markets have been active, and the London sales not only confirmed the steady and firm advance, but established higher prices. At this date the Colorado and New Mexico wools are put on the market and are meeting good sale at from 17c to 20c. The 15th of July we find prices still advancing. Manufacturers have, at this date, bought more freely, but insist that the advance in wool is but temporary and not warranted by the prices of manufactured goods, but as the wool markets of the world have all been marked by the same advance, we may fairly consider the values now as permanent. By comparison of prices East and
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West at this date, we find the Western market equal to, and in some cases better than the Eastern. August 1 we find the wool mostly out of the growers’ hands, and those who are holding the supply more confident. Foreign markets keep firm, and but little wool can be imported to compete with domestic. August 15 we find no material change in prices. The market for woolen goods does not appear to have advanced equivalent to the advance in raw material. At this time we also find that the American demand is noted in the English markets, and that there has also been an advance on the London sales of the 16th of June. And after a careful examination of the prices and noting their steady upward tendency for almost a year, we may. I think, conclude that the outlook is favorable, and sheep husbandry, carefully managed, will be more remunerative in the near future than it now is, and we might note, too, that all grades of wool have advanced in nearly the same ratio. One other point, I think, is favorable: In the depression of the past few years when there was so much decline in the price of wool, many farmers sold off their flocks, and many others reduced theirs, and, as a natural consequence, the best were kept, and in this way the flocks that were kept were much improved, and we have a better grade of sheep. And, I might say of the mutton interests that, in reviewing the markets we find an increasing demand for good mutton, and judging by the past, we may safely conclude that there will be more discrimination between good mutton and that which is simply placed on the market because it is too old, or from some other cause is of no use on the farm. By good mutton I mean that produced from good, young sheep, carefully fed and cared for so as to go onto the market in the best of condition, and such as will be wanted by our best buyers.

In conclusion, I will say that after having watched the interest of sheep husbandry for some time, I have come to the conclusion that to be successful in this branch of husbandry at the present prices, I must have the best stock I can procure, give it careful attention, breed such a class of animals as I can find, by experience, best adapted to my locality. In this we must consider the markets we expect to put our stock upon. We can not expect to be successful as producers of breeding stock unless we have that class of stock that will command the respect of those who are expected to buy of us. No more can we expect success with our butcher stock unless we have that which will command the highest market price. In summing up the outlook from the various standpoints, I have confidence that there is no part of husbandry that will pay better than the growing of sheep for mutton and wool, and I think the outlook is for it to be more remunerative in the future.

Discussion.

S. W. Dungan. I am pleased with the tone of the address; it shows investigation and thought. The subject, “Signs of the Times,” is something in which we are all interested. It would be a very proper way to spend a half hour or such a matter that the wool growers may talk of the “signs of the times” with them, as to what it is, and how many wool growers they have in their section, and what is the present outlook. Is there a demand for lambs, ewes, or anything of general interest to the sheep breeder. The sheep industry is advancing, and it will have a good
effect on breeders breeding different classes of sheep for sale. There are many here who spend much money and time in trying to have the best breeds of sheep, and we want to know what are their prospects in this line.

J. L. Thompson, Grant County. The signs of the times are favorable for our industry. Wool has advanced all over the world. The sales abroad have caused it to advance in price; the great demand has brought about cheaper products. I do not think we need to bother with it any more. I find in our county there are more sheep now than we have had for several years, both ewes and rams. Those who sacrificed their flocks a few years ago are now wanting to keep a better breed of sheep. It is better to raise sheep whose lambs will bring $4 or $5 in the winter. It is better to do this than keep them and get only $8 at four or five years old. I find a great demand for sheep—more than I can supply. I have attended fairs, and I find a good demand there for breeders. I also find good sales at home. The general tendency of farmers is to stock up with something better. In our county the hogs are dying with the cholera, and men who are loafing hogs are turning their attention to sheep, and a good class of sheep at that. There will be a good demand for all the good sheep we can supply. I have been in the habit of putting my sheep out on the shores, as I find I have more than I can care for properly. I find that in small lots they do better, and this season I put out my whole flock. Flocks of from five to ten do much better than large ones, and instead of selling I am putting them out from one to three years, and they are doing uniformly well. In our county there are many fat sheep. In feeding sheep farmers are getting good prices for their corn. I think next winter there will be more sheep than this winter. Everything is encouraging to go ahead. Sometime ago it looked very blue, but I think we have great encouragement to raise sheep now.

C. A. Hordland. In giving your experience, Mr. Thompson, will you tell us the kind of sheep that are most profitable. We want to learn what kind to keep for the best. Does fine wool, medium, or long wool do best?

Thos. Nelson, Parke Co. To make sheep fat how long should they be fed well? J. L. Thompson. I am not prepared to answer that; none of us have fed just right. We do everything in this State, in the way of taking care of stock, in too extensive a way. I take part of that myself; we do a little too much to do right. We are apt to think there is more profit in taking care of a hundred sheep in a half way manner than fifty properly. We undertake, in our county, to feed a good many sheep, generally feeding in a rough way, but we are taking better care this winter than heretofore, and are putting our sheep out on the shores. We concluded to handle a few good wethers we bought, until we had something over 500. From these I selected about 360, all straight wethers. We have been feeding these wethers and they now average 135 pounds. They are a class of sheep that were utterly impossible to get in this country a year ago. We are feeding these sheep shock corn, which we think is good feed, scattered out on the pasture. The most convenient way to get the fodder out is to load it on a sled and haul it to where you want to scatter it. These sheep we have divided into two lots, 170 in one and 190 in the other, giving them all they will eat, both fodder and corn. During the snow we fed in one place and did not waste any. After the snow was gone I found there was not more than a peck of corn lost. Our straw piles afford shelter for a
part of the sheep. I put up forks, on which I put rails and threw straw over that on the north and west sides for wind breaks. With these straw stacks for protection, and feeding twice a day with good shock corn, my sheep have done well. They should be salted regularly and have access to water all the time. They will do but little good without water. I think it is more profitable to handle sheep than cattle. In November I weighed one hundred and eighty sheep and again last Saturday. They were rough fed through the bad weather, and we had a gain of seven pounds each. We think in the next four or five months we can gain ten or fifteen, or even twenty pounds, with the grass. We should have grass. If a man has sheep and no sod, and it came this kind of a time, I don't know what he would do. It is not best to lose the manure in the mud. A man should prepare buildings. It is a better way to do than we are doing. If you prepare sheds and divide your flocks up into small lots, feed from good racks, with plenty of grain and water, and never turn them out in the wet; then you get fat sheep. It is better than the way we are managing with the same amount of feed. Still if we had sales we would expect to make as much as men do out of twice the amount of grain fed to hogs. You are all well aware that sheep are low in price in the fall. You can buy in the fall at four cents per pound and now sell at five cents. But I have a class of sheep that is better than the best grades. I am offered now five cents. We have been breeding the Shropshire for several years. I think, perhaps, they meet our wants in Indiana the best. I have had some experience with some other breeds; have had the Southdown, but am not so well pleased with it as the Shropshire. The Shropshire has some faults, but is getting better, and perhaps is as good a breed as we can find. If some want to breed Cotswold, let them breed them. I do not like them as well as the Shropshire. I am putting out these grade Shropshire ewes for one year, furnishing a pure blood ram to go with them, and we divide the wool and lambs each season equal. If he keeps them for three years we divide the wool each season and divide the flock at the end of the time. If you want to put sheep out on the shares it is not a bad business, if you get them in good hands. It is not profitable for you unless they are well taken care of.

S. W. Dungan. The increase in pounds, as Mr. Thompson stated, appears to me, was a loss instead of a profit. They were about two and a half months in gaining seven pounds each. This is surely making a small gain.

Mr. Thompson. I spoke of handling sheep in a rough way. The sheep gained seven pounds, and one dollar on the hundred in price. The Pittsburg price was four cents when I bought them, and now they are worth five cents. Uniformly you can get an advance on sheep, but not on cattle.

S. W. Dungan. If you are feeding that number of sheep, don't you believe the difference you get in feeding the right way would be enough to secure shed shelter?

Mr. Thompson. Didn't I say so?

Mr. Dungan. I lost that.

I. N. Cotton, Marion County. There is no process by which we can feed sheep and buy at $4 and sell at $4 in the spring. We have got to make in the rise of price. We can not add enough by the feed it eats from the last of November to the first of March to make a profit. It must be in the rise of price.
J. R. Tomlinson, Shelby County. Is it needful to shelter?

J. L. Thompson. You must keep the sheep dry, comfortable and clean. I would feed mixed feed of bran and shorts about all they will eat clean. But, as Friend Cotton suggests, there is no profit in feeding at four cents in the fall and selling at four cents in the spring. Last spring I undertook to feed a few cattle. I thought I would make some money. My brother-in-law fed some sheep. I made $50 out of my cattle, and he made $300 out of his sheep. We are feeding sheep this winter.

President Nelson. You get this rise in the market by getting your sheep better. A poor sheep will be a poor sale any time. I can see quite a profit, while Mr. Dungan and men of more experience can not, even at a gain of seven pounds.

Mr. Dungan. Selling at the same price you bought?

Thomas Nelson. You put the advance on by making him fat.

J. L. Thompson. There is one thing we have overlooked in this discussion. Feeding sheep with corn which we take to the poorest place in the field, and also stacking the straw where the soil is thin, will make the ground too rich for grass. Feeding sheep is one of the best means of enriching the soil. There is another point that has been overlooked—that is the fleece. It has not been considered much, but it is considerable. I expect to shear ten pounds from each of my sheep next spring. We shall sell at home, and hope for five cents after the wool is off. We are already offered twenty-five cents per pound for the fleece. We aim to make those shorn sheep weigh 130 pounds each.

C. A. Howland. Mr. Thompson has given us some good advice and we should give him some in return. He said sheep raising is a good business, but the way he has been doing is not in accordance with the best mode of handling sheep. Instead of making $300 he might make $600, by putting up sheds and not feeding out in the open field, and permitting his sheep to lie around straw stacks. He should put up sheds for their comfort and convenience, and the knowledge that he is doing God's service in caring for God's sheep ought to tempt him to do this.

J. W. Robe. A good many men have built cattle barns in Putnam County, and now feed in them. They find that cattle don't put on any more pounds fed in barns than out of doors. Cattle in barns often become frightened, which is an injury to them. Yet they say they can winter on one-third less feed than out of doors. Might we not loose much in the sheep becoming unhealthy by housing.

J. B. Conner, of the Indiana Farmer. I suppose this matter of economic management was discussed at the proper time. By permission of the chair I wish to call this discussion back to that question, the all-important question to wool growers. We have agreed that the price of wool has been restored by reason of the drouth abroad and decimation of the flocks at home, but the question is, is that the way to bring back the price—by destroying it. Every man knows that previous to the reduction of the tariff in 1888 there was but little disturbance in the wool-growing business. The reduction of the tariff was somewhat detrimental to the wool-growing interest; yet it was not so bad as the attendant scare. Any change of public policy affects business, and has the effect of disturbing values. It is not quite my idea that we quietly submit to such disaster. I know it has
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been deprecated; that the wool growers are calling for the restoration of the tariff. It is the continual demand of the great wool-growing interest for the restoration of the tariff of 1867, and I believe that fact has prevented wool from being put on the free list entirely. The great factors in the restoration of prices are the droughts in Australia and South America, diminishing the importation of wool into this country. These things and the decimation of flocks here have served to restore the price in a measure. It is not quite my idea of the business, yet we have to accept it as the conclusion of this matter. The continual agitation of the restoration of the tariff has been a great factor in the restoration of prices, and we must believe wool would have been on the free list but for this continual agitation since 1883. We should not accept as a rule for action that when prices become low the way to revive an industry is to almost destroy it.

James Daily. In Vigo County, where I live, I am in the habit of putting my sheep in sheds during the winter. I raise both Cotswold and Southdown. I have stables for each of the two breeds. My feed racks are made out of oak slats, made sloping, so all the trash and gleanings will fall in the rack. I feed potatoes, turnips and clover hay during lambing time. I don’t let any stock run out of doors. I think I save very much feed by feeding in racks under shelter. My sheep are quite tame and gentle and don’t get frightened.

J. L. Thompson. This coarse grade of wool which comes from other countries is not used in the manufacture of cloth—it goes into carpets. It comes here at about eight or ten cents per pound. We are doing the best we can to care for our sheep. We had a sheep barn built, which will hold 200 sheep, and we winter our lambs in there. In stabling sheep it is more profitable to have them in small lots and everything kept clean. Care should be taken to have a good feed rack. I want my breeding ewes wintered with as much exercise as is reasonable, and that is a good deal. I would feed them out of doors all the time, and I find nothing better than shock corn distributed away from the building. It is the way I raise my strongest lambs. This keeping in close quarters is not the best. I have received information from several parties that their ewes are doing no good. They keep them housed up, and the lambs dropped are weak and unhealthy.

Mr. Mitchell. Do you let your lambs run out night and day during lambing?

Mr. Thompson. No, sir; we keep them in the barn in small stalls with rack and manger. When a ewe is about to have a lamb we put her up, leaving her in a few days, and not feeding very much. Just after dropping a lamb is the time to take the best care, as there is danger of inflammation.

J. B. Harkless, Henry County. My experience has been somewhat different from that of Mr. Thompson, but I raise a different breed of sheep. I am raising Cotswold, and I endeavor to care well for them by stabling every night and feeding in the stable; turn them out in the morning to get the benefit of pure air. My sheep are tame, and I have no trouble in separating. This thing of sheep becoming frightened when you are handling them is the result of improper training. My sheep are so tame that after I turn them in it is difficult to keep them out of my way. As to the kind of sheep to raise, that is according to your fancy. We
can not take too good care of our sheep; we should feed as long as we have the sheep. I feed my ewes shelled corn, threshed oats and bran. I show at the fairs and don't allow any one to beat me.

Mr. Daily. I keep fat sheep. I wish to know how you make your racks.

Mr. Harkless. You have the same plan as I have. I feed all the clover hay they will eat twice or three times a day.

Fielding Beeler. I have a sheep rack and trough combined, which is twelve feet long, with studding on each side of 2x4 scantling. The sheep can eat from both sides. The troughs are fixed so the grain goes down and fills them; everything is clean and nice. They are portable and may be moved from one point to another. I can turn them around and make a pen in one corner. I always have to turn my sheep out while I put feed in, as they are tame and crowd on me. I will not have a man among my sheep that is always kicking and abusing them.

John McGaughey read the following paper on

THE COMMON FARMER AS A MUTTON AND WOOL GROWER.

My subject indicates that "The Common Farmer" is a "Mutton and Wool Grower." He is not. That is, the majority of farmers do not raise sheep. Their reasons are numerous, and most of them false, when viewed in their true light.

Their principal and strongest one, perhaps, is founded on the idea that there is no money in the business, and we would have to admit the truthfulness of their position if we agreed with their manner of conducting it. Here is where the trouble lies. We assume that the business is all right, and reasonably profitable if rightly conducted, but in its management most of us are very deficient. So general is the idea of "no profit" in the minds of the farmers that almost every one we talk with on the subject declares with emphasis that money invested in sheep is dead capital. If this is true the farmers certainly exercise good judgment in keeping hands off. If it is not true, then some one ought to rise up and convince them of their error, for certainly no man can be expected to engage in a business that he is convinced beforehand is unprofitable, and this will be no easy task, for there is perhaps no class harder to convince of an error or more reluctant to give up a conviction than the farmer. I do not mean that he is obstinate or incapable of discerning a truth, but he is slow to adopt the opinions of others unless demonstrated in a practical way. In general he is slow to experiment, and when a position is once taken it is hard to drive him from it. He is not liable to be airy or farcical in his views; but to his solid and practical intelligence the world owes much. An appeal to his judgment on matters of general welfare would doubtless bring as good results as would come from any other class of men.

We do not wonder at the farmer failing as a wool-grower when we consider the education he has on the subject. The real truth is, few men know how to manage their flocks, or, knowing, fail to put their knowledge into practice. If you will observe the treatment of flocks in most cases you are led to believe that sheep, like weeds, will grow without care or cultivation; and so they will, and be about as valuable as weeds. Neglected, left upon starvation fields or barren highways, unsheltered from beating rains and driving snowstorms, and the piercing
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blasts of northern winds—where is there an animal so much abused—and is it any wonder there is no profit in them? Sheep will live on very rough food and endure a great deal of exposure, and certainly they get about all they can stand of both at the hands of the "common farmer." On the other hand, no animal will respond more freely to kind treatment and good food than the sheep. But neglect seems to be the great fault of the farmer as a wool-grower, and because his flock fails to give returns under ill-treatment, it is pronounced unworthy. The truthfulness of my assertion can be established by examining the flocks in the hands of farmers, or by going to the stockyards in our city, and see the sheep that are put on the market there. When you do that you will undoubtedly say the farmer is right when he declares there is no profit in them. The average fleece of wool does not weigh much over four pounds, and the average sheep does not yield more than fifty pounds of mutton, and that of an inferior quality. What would be the result if, by improvement, these flocks would be raised to ten, or even eight, pounds, and the growth of mutton increased one-half? The difference in dollars and cents in the pockets of the farmer would make him look with some degree of pride on his flocks, besides the pleasure he would experience in knowing he had done something in the way of progression.

Improvement is one thing necessary in our flocks. Not that every farmer should have all thoroughbreds—that would not be profitable—but grade up the flock by the selection of the best common ewes and the purchase of thoroughbred bucks. A few extra dollars placed in a good buck will be returned greatly multiplied in the enhanced value of the lambs. No man can afford to disregard the quality of the buck he uses. * * * It has been said we take on in some degree the disposition of the animal we deal mostly with. If this be true, then every farmer ought to have at least a few sheep. Most of us would be bettered if we carried in our natures some of their characteristics. "From time immemorial the lamb has been an emblem of innocence," and, far back in the beginning, the noblest of occupations was that of a shepherd. * * *

The man who does about all the shearing in my neighborhood told me he went to clip a flock of seventy-five head, and it took the owner two days to hunt them out of the woods, and among the number was nineteen scrub bucks. Another case is that of a man who, in most respects, was a good flock master. He did not overstock his farm; was particular as to breeding; provided nutritious food and good quarters during the winter season, but in summer the commons about him afforded good pasturage and he availed himself of that. He was all right for awhile, but finally his flock was driven away in the night and sold to the butchers in the city; he recovered some of them, but has never been very enthusiastic on the sheep question since.

I give these examples to show how some men raise sheep, and by their example and experience discourage others who might do differently and succeed better. My experience with the flock has taught me that it is profitable.

When farmers have to size their flocks according to their farms and facilities for caring for them, they can not fail to reap reasonable rewards.

J. R. Tomlinson, of Fairland, was called upon to read a paper on "Fitting Sheep for the Show Ring." He said: "I have nothing prepared and would
rather not say anything on the subject at present. I regard the paper just read as being one of the very best. People are getting interested and are drifting into this industry. As far as I can discover at present everything is encouraging. I hope you will excuse me from saying anything on the address assigned me."

Thos. Nelson. There is a question I wish to bring before this convention for its consideration—that is, the removal of the State Fair Grounds. Quite a number here are delegates to the State Board, and we want the wool-growers to give an expression as to their opinion of the propriety of removing the fair grounds from their present location. I hope some one will put this in proper shape for discussion.

Oel. Darnell. Was that not settled at the last meeting of the State Board?

Mr. Mitchell. There was a resolution presented to the January meeting of the State and Delegate Board, and the vote was unanimous to let it remain where it is. That question has been continually agitated for years, and I do not think it amiss to have a voice on the question. If there is anything inconvenient where we are we want to know it. We want to do everything we can to accommodate the live stockmen at our shows. I have attended many fairs, and I think it is not unfrequently detrimental having railroad lines run to the grounds. The Farmer is continually agitating the question. I think if they would attend some of those large fairs and see the inconvenience that is apparent by having a line of railroad running to the grounds they would oppose such a measure. When the fair breaks up all want to go, everybody wants to go, and at that moment it is impossible for the cars provided to take them all out, besides there is great danger of accidents occurring should steam cars be used. In the way of express all the breeders would have to wait their turn. At Chicago we have to wait thirty-two hours; here it is not over thirteen hours. It is not best to be on the line of one railroad, in my opinion. One gentleman told me that when he unloaded at Indianapolis with his stock he was at the fair grounds within one hour. I want you stock men to speak out and say where you have had any inconvenience. At St. Louis there are 150,000 people who attend the fair, and they get away on the street cars and omnibus lines with little or no inconvenience. Mr. Kingsbury has not been to these fairs or he would not advocate this measure.

Mr. Kingsbury, of the Indiana Farmer. The gentleman says we have had no experience. With what little I have had I will say I rode with my wife in a wagon with drunkards and beer drinkers; I have had to ride with one foot on the step at the rear end of the car to get to the city. If St. Louis has street cars it is no reason why we should depend on that mode of transportation. We are not compelled to depend on one railroad like Chicago.

I. N. Cotton. This subject does not belong to this Association. It belongs to the State Board, and I rise to a point of order.

Mr. Robe offered the following resolution, which was laid on the table:

Resolved, That we, the Indiana Wool-Growers, favor the removal of the fair grounds to more commodious grounds.

Mr. Mitchell. At the State Board meeting there was something said about farmers' institutes. It would be a good idea to hold these meetings at home and get our neighbors interested. There was a resolution passed by the State Board to
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get up a system of rules and organize such meetings all over the State. Let us go to work and get them in good running order and build up the live-stock interest in the State. Such a work in Illinois is doing much good. Let everyone consider himself a committee of one to work up the interest in his neighborhood. I am satisfied there is nothing so good as to get the farmers together and talk these matters over.

Mr. Robe offered the following resolution, which was adopted:

Resolved, That this Association favor the holding of farmers' institutes throughout the State, and pledges its support to the State Board in the work of organization and conducting such institutes.

Convention adjourned to 8:30 a. m.

WEDNESDAY—MORNING SESSION.

Mortimer Levering, of Lafayette, read the following essay on

DISTINGUISHING CHARACTERISTICS OF THE SOUTHDOWNS, OXFORDDOWNS AND HAMPSHIREDOwNS.

The title of this paper is not one of my own choosing, and it is doubtless the expectation of the author of the subject that we should give such unmistakable points of difference and contrast in appearance between the varieties of sheep named that any one may be able to tell conclusively to which of the four leading breeds of black-faced sheep an animal belongs, whenever and wherever a doubt arises as to its proper class. We have taken the liberty of adding the Shropshire family to those already embraced in the subject, though the Shropshire does not belong to the "down" families, yet it is no mean variety, and it is commonly mistaken for either of the others, that it seems expedient to name some of its characteristics at this time.

It is not within the province of my subject to give the history, merits and points of superiority of each breed claimed by the devotees of the Southdowns, Hampshiredowns, Oxforddowns and Shropshires, as we might encroach on subject-matter of other writers, and at the same time wander from the text. It would be easier, and following a precedent, to do as our average preacher, take a text and speak about everything, and at tiresome length, but keep well away from the subject as stated, and never touch upon the text again after its announcement.

It has been the practice of many of us, when looking over the different pens of sheep on exhibition at our fairs, to ask of every well-known sheep raiser who may be present, such questions as these: "Of what breed is that sheep?" pointing out a handsome black-faced sheep; he may say, "A Hampshiredown." The next question that follows is, "How do you know?" and in most cases an argument arises at once, not because he called a handsome sheep "a Hampshiredown," for most of the sheep are handsome when fattened, trimmed, colored, combed, trained to stand stylishly, and pomaded for the show ring. But we want an undeniable reason. A certain well-known breeder of Shropshires said that he could "tell a pure-bred Shropshire at sight from among the other black-faced varieties, and
without the possibility of error, but could not tell how.” The conclusion follows that he, with many others, judge from a kind of intuition, and from certain indescribable impressions, such as expert money handlers tell counterfeit bank-notes, yet can not give the reasons. This difficulty of distinguishing between dark-faced sheep is not confined alone to this side of the water, for in an article in the Journal of the Royal Agricultural Society of England in 1875, it says, “there were entered under the department styled ‘Hampshire and other short-wooled sheep,’ five classes, though afterward proven to be virtually of one flock.” This has also been practiced with some financial success by some sheep dealers on this side, yet we think we have now “a punishment to fit the crime” for future offenses of that character.

Little, if any, serviceable information on our topic can be derived from studying the points of excellence adopted for each of the four breeds by their different associations, as the advocates of each picture an ideal sheep as a standard that meets the views and fills the requirements of each set of rules. When a sheep is large, with round body, deep and full in the breast and around the heart; wide, flat back, straight from shoulders to tail; underline straight and parallel with back; body close to the ground; good carriage; grandeur of style; head well up; elastic movement; great symmetry of form; wide and full in the thigh; deep in the flank; ears not too large; head short and broad; legs broad, stout, straight, well set apart; well wooled to the knees, etc.—we might go on and give such excellent features throughout the whole makeup of the sheep, and leaving out the one point of color (and that is nearly the same in all), every hearer, be he Southdown, Oxforddown, Hampshire or Shropshire breeder, would say, “that is the description of a perfect sheep of the kind we are breeding, and he has read from our own particular points of excellence.” And it would be truthfully said, for all good judges are agreed upon what should be the perfect, middle-wool, mutton or general-purpose sheep, and breeders of each of the four varieties of sheep named are striving, by all honorable means (I hope), to make their particular kind fill the standard.

But in reality there is a marked difference, and particularly so if the sheep are in a normal condition, and not fitted up in the usual manner for the show ring. And we must give the appearances as they occur to us of the different breeds, as taken upon the average, as they are, and not from ideal sheep.

The Southdown is most easily distinguished from the three other varieties by its size and color, it being the smallest and lightest in color of the four breeds named. To those who breed the Southdown its characteristics are so familiar as to be readily observed by them. It has great uniformity throughout the world, and owing to the fact that it is one of the oldest pure-bred varieties of sheep, and can trace an unbroken line of pure descent from a period antecedent to William the Conqueror, and, further, being the most popular mutton breed for centuries, until within the past twenty years, it is not to be wondered at that it is well-known. The Southdown has a speckled gray or brown-gray face and legs, the head and forehead covered with fine curly wool, space between the eyes and noes narrow, lips very thin, under jaw narrow, eyes full and bright, and with a restless, half-frightened expression, holding the head as if expecting a blow from behind; ears very thick and
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Wide, and covered with fine curly wool of light or white color and set well upon the head; eye-cap not full, but smooth and even; body very round, compact, "pony built" in size, rather small, seldom weighing over 150 pounds; wool white, free from grease, very flossy in texture, of about three inches in length and of uniform length over the body, not disposed to mat, as the wool is deficient in felting quality.

Oxforddowns are not so well known as the other varieties, being of recent origin. This breed was commenced about 1833 and originated from a cross of a Cotswold ram on Hampshiredown ewes. This breed is the largest in appearance and heaviest of the four breeds named. It attains great size and weight, and owing to its long light wool gives appearance of additional size. The face and legs are of a soft brownish color resembling buckskin, face large, forehead well covered with wool not very curly, wide between the eyes, eyes large and soft, expression mild and quiet, ears rather large and thick, covered with fine curly light-colored wool, ears are set high on the head and overline of the eyes, and stand strong and erect; the body is large and round, but the sheep is sluggish in appearance, wool of medium fiber, about four inches long, very white in appearance, and contains but little oil or color. This sheep upon the whole resembles a mammoth Southdown.

The Hampshiredown has been well-known for about 100 years, feeding on the short dry grass that covers the chalky hills or "downs" of Hampshire County, England, from whence it derives its name. It is the tallest of the four kinds of sheep under consideration. It is large-boned, long-bodied and long-legged, and easily identified as a breed by its face and ears. The face is long with prominent frontal bones or bony protuberances over the eyes; the face has a decided Roman profile; thick hanging under lip; face and legs are glossy black. The best authorities say: "That black tips to the ears, as well as very black faces, are deemed essential, and any light color or specks on face or ears, as sometimes seen in Shropshires and Southdowns, are regarded with dislike and discredit." The ears are very long, thin and oily to the touch, deficient in wool covering and seem almost bare; are set close to the eyes, low down on side of head, and inclined to droop to the hind feet; wool is of medium length, about two and one-half inches, and is thick and even, containing considerable natural oil, and of fine fiber, with an inclination to mat on under side.

The Shropshire, although so widely diffused and well advertised, and its merits so frequently written up in journals, is sometimes a difficult sheep to correctly distinguish in the show pens, owing chiefly to the division among its breeders as to the correct shade of color preferred on face and legs, but they can best be known by their uniform smoothness of fleece, large round bodies, well sprung ribs, deep brisket, short legs set wide apart; faces and legs must be dark brown and often black, head well covered with wool down to the eyes, face small, wide between the eyes and ears; ears very small, covered with short velvety wool, same color as face, and set far back behind the eyes, and completely surrounded with wool, rather pointed and held at an angle of about thirty-five degrees; legs frequently covered with short dark-colored wool down to the hoofs; wool is even, smooth, free from taggy ends, and has the appearance of having been clipped. It is of medium texture, lustrous and has a sweet, mellow touch over the back and loins. Bodies are
large and heavy, head set on thick short necks giving them a stylish appearance, and withal a sturdy look. It has been the practice of the partner of the writer to point out a striking resemblance in different sheep to some of his human acquaintances, and frequently calls them by the name of the person they resemble, and if we may be allowed the privilege, without in any sense being disrespectful to the persons, we would say that the Southdown looks somewhat like Gen. Phil. Sheridan, the Oxfords resemble President Cleveland, the Hampshires the late Disraeli, and the Shropshire like our friend from Johnson County [S. W. Dungan].

The four breeds of sheep referred to herein are commonly known as "general-purpose sheep," as they combine in the highest degree both mutton and wool qualities, and are now firmly established in the front rank in point of popularity, having superseded the once popular "fine wools" and "long wools." This fact is owing chiefly to two reasons, viz.: First, the consumption of animal meat as a food has grown upon the human race so rapidly in the past fifty years that statisticians say that nearly ten times as much animal food is eaten at the present time as was consumed half a century ago. In England the number of sheep imported for butcher purposes in 1832 was 673, and that number has so rapidly increased each year, until in 1886 nearly two million were imported for slaughter. This fact has made a great demand for sheep having best mutton qualities. Secondly, owing to the increased facilities for manufacturing silk, cotton and flax, and change in styles of fabrics, the demand for very fine and very coarse wools has greatly diminished, and the wool of medium length and quality is most desired. Hence, as a natural result, these sheep have become universally popular, and to that breed which first attains the perfection of the typical "middle wool" belongs the glory that is ready to crown it king of sheep.

DISCUSSION.

S. W. Dungan. I have listened with much pleasure to the reading of this paper by friend Levering. It shows much labor and deep research in investigating these different breeds of animals.

Col. Darnell. I move that Mr. Cotton be appointed to wait on Mr. Metzger, of the House of Representatives, and invite him to address the wool growers on the advisability of formulating a dog law for the protection of sheep.

The motion prevailed.

The Committee on Programme submitted the following report:

1. President's address.
2. Relative Profit of Sheep when Fed for Market as Compared with Other Stock, I. J. Williams, Muncie, Ind.
3. Can We Control the Sex in Breeding? J. R. Tomlinson, Fairland, Ind.
5. Duties of Superintendent of Sheep Department, and Manner of Conducting Sheep at Exhibitions, Thomas Nelson, Bloomingdale, Ind.
WOOL GROWERS.


C. A. Howland was called upon to read a paper on

GRAZING DIFFERENT KINDS OF STOCK TOGETHER.

Before reading his address, Mr. Howland said: "There is a theme that I have<br>always felt it my duty to advocate, and especially when remarks have been made<br>conflicting with my views on certain measures. The theme I allude to is a question<br>that those of this Association should know my views on a certain question, some of which already know the position I hold on certain questions. I should not say a word on this subject if it had not been for some remarks yesterday which<br>were calculated to stir up in my mind the question as to whether the opposite side<br>should be to a certain extent spoken of. This theme is in regard to taxation. I never<br>did believe it was right to tax Peter to make Paul rich. But I do believe, while<br>the remarks I may make and the sentiments I express may be criticised, we all have<br>a right to advocate views that we think to be correct and to the best interest of our associates. If it meets your approval to postpone the day for criticism to<br>next year, or to a later period, and it may be at that time I can not be here, and<br>if in speaking of me as we often speak of others, I do feel that I would rather you<br>would speak of me as one who advocated that the necessities of life, either in food<br>or raiment, should be furnished the poor at the least possible cost, and I hold that<br>the shivering poor should be covered with that which will make them the most<br>healthy and comfortable; that is flannel produced from the woods of the land at<br>the least possible expense. I have no objection to removing the entire tariff on<br>wool and placing the necessary tax on the luxuries of the land for the necessary<br>running expenses of government, such as silks, satins, laces and intoxicants. I will<br>now read what I have written. It is quite brief. It is right and proper in these<br>addresses to set forth the views and experience of men in as short and pointed a<br>manner as possible, because these frequently find their way into the periodicals of<br>the country, and, when worthy, are published in our agricultural reports."

The cropping of grass by one kind of stock does not make the grass less palatable for other kinds, and stock thrives quite as well when promiscuously grazing together as when the different kinds are kept in separate pastures, provided the females that are near the time of dropping their young are placed by themselves until their young have acquired sufficient strength to get out of the way of the different kinds of stock associated with them. Sheep, unlike most other kinds of stock, will make friends with any animal that will be kind to them. If sheep are left in the pasture at night cattle should be left with them as a protection against the attacks of dogs, as sheep are rarely injured by dogs when in company with cattle. But few stock raisers of the present make a specialty of any one kind of stock, for experience has taught that a variety of live stock, as well as a variety of crops, is a surer source of wealth, and, as it would be expensive to provide separate pastures and suitable watering facilities for the different kinds of stock therefore we
would separate and dispose of all that are vicious among the different herds and turn all well-disposed stock together. Different varieties of stock appropriate to themselves the part and kind of grass most relished by their kind, and between them they consume it all. All varieties of stock are fond of and thrive on blue-grass, but bluegrass does not yield sufficient food to justify its being sown on other than woodland or broken lands that are not suitable for tilling unless sown in conjunction with other grasses. Clover will yield more pasture per acre than any grass known, and at the same time enrich the land more than any other kind of grass. One pound of timothy should be sown with every seven pounds of clover, when sown for pasture or for hay. Every farm should have a timothy meadow in proportion to the number of horses kept on the farm, as timothy hay for horses is preferable to that made from any other kind of grass, but we would prefer clover hay for every other kind of stock. There are other grasses that do well in certain localities; for instance, red-top is the best grass to raise on wet land; alfalfa is an excellent grass in countries where irrigation is practiced; orchard grass thrives well in shady places on rich land, but grows in tufts unless sown very thick. It is a fair grazing grass. While there are many other kinds of grasses, we believe we have mentioned all that will be of interest to the farmers of Indiana, and would say that we believe that the three first mentioned grasses are superior to all others; for grazing, bluegrass and red-clover, and timothy and red-clover for hay.

On invitation Representative E. A. Metzger, of St. Joseph County, entertained the convention with the following remarks in reference to legislation for the protection of sheep against dogs. He said:

Mr. President and Gentlemen:

I have been trying to get up a law against sheep-killing dogs, but as yet have not been successful. I am now trying to frame a bill on that subject, and am here to hear any suggestions that might be beneficial in drafting a bill that will pass. I think by placing a heavy tax on dogs it would tax our dogs out of existence, and not be unreasonable for a good dog; but that don't seem to meet the approval of the committee on agriculture of the House, so I have asked the committee to hold the bill and not report it. The last and best in our settlement was the "tag" law, but some gentlemen of the association think such a bill would not pass. It was suggested to me to draft a plan that would be sure to reach all the dogs, making it a misdemeanor with a fine and imprisonment for failure to list dogs, and if this meets with your approval I will draft it in that shape. I have lost 110 sheep in the last eight years by dogs. I am now breeding Shropshire sheep, and have to shut them up every night.

Mr. Mitchell. I think, Mr. President, you want to get something that will meet the requirements of the wool growers. I move that a committee of three be appointed to meet with that committee to assist in framing a bill that will meet the wants of the wool growers.

I. N. Cotton. I had a little experience with the bill six years ago. We want to go slow. We want several things we can't get, and we have to take what we can get. I believe in the "tag" system. Let the person go to the Township Trustee, describe his dog, take a certificate from him, and make it a penal offense and a fine of $10 or $15 if he neglects it.
Mr. Metzger. Mr. Mitchell has hit the nail on the head. If you come in with a sanitary bill there is no trouble. I can meet with this committee any time after adjournment this evening. I want to present this bill to-morrow morning. Let that bill come from the wool growers and you have got it. If you let it come from individuals it will not be so likely to be recognized. We must get up a bill and get it through. I have the interest of the farmers at heart. Yesterday, while working on the stock law, if it had not been for Mr. Buckles and myself we would have lost that bill. We worked on that bill an entire day, and got it engrossed.

Mr. Levering. Every one knows we have a law against seineing and fishing. In our section of country around Lafayette we find it very difficult to have the law enforced.

Cal. Darnell. We should allow the Township Assessor 10 cents for every male dog he enrolls, and 25 cents for females. I think we will come nearer getting a bill passed by applying as wool growers. We want to keep that money as a county fund instead of a township fund.

J. L. Thompson, Robert Mitchell, I. N. Cotton, Cal. Darnell and Fielding Beeler were appointed a committee to confer with Representative Metzger for the purpose of formulating a bill for the protection of sheep against dogs.

Discussion on Mr. Howland's Address.

Prof. Latta, Purdue University. Where orchard grass does well, you will get a better combination in clover and orchard grass. I find in our locality on College Farm it has not been successful but we have not the right soil. But where it does well it is better than a timothy combination. For pasture it is highly prized. I would like to know if any gentleman here knows how it succeeds in making hay.

C. A. Howland. I have not had any experience in this line. My paper says it is a good grass, but does not recommend it for hay. Pure timothy is the best for horses. I recommend sowing timothy with clover, which is better than blue grass and makes a better sod. To secure a good orchard grass, sow it thickly; but you can not do this so well with other grasses. You might make a good combination of orchard and blue grass if the soil is not too wet; and also red top; but if you wish hay, clover by itself is best for all kinds of stock except horses. Orchard grass requires a rich soil and to be somewhat shaded. It is a good grazing grass, and, in conjunction with other grasses, makes good pasture. Other grasses make strong sod, while this don't. Timothy will make a nice sod.

Mr. Scott, Switzerland County. The gentleman asserted that orchard grass required shade. I have had an experience of forty years with that kind of grass, and that is not the case with us among the hills in the southern part of the State. I regard orchard grass as one of the best grasses we have for mixing. The principal grass in our section of country is orchard grass, and we regard it as one of the best grazing grasses we have. Blue grass, of course, has no superior where doing well. Orchard grass and clover ripen about the same time, and we regard it as an excellent mixture for hay.

27—Bd. of Agr.
Mr. Mitchell. I do not favor the idea of mixing clover and timothy. In Southern Indiana clover is such a rank grower that it smothers out the timothy. Orchard grass and clover grow about the same. We regard orchard grass good for winter pasture. Clover I can not say is better than blue grass.

Mr. Howland. I did not say so.

Mr. Mitchell. You stated that blue grass was not so good as clover. Clover is good in its season, but the year around it is not so good as blue grass.

I. N. Cotton. Mr. Mitchell said that the clover would smother timothy. My experience has been the reverse. I sow half and half, and the timothy will kill the clover.

C. A. Howland. When the clover dies out you have a sod of timothy. Clover may freeze out but timothy does not. I consider it a good mixture. Cattle occasionally get too much clover, but they won't suffer when timothy is mixed with it. If you sow clover with timothy you have certain pasture right along.

Mr. Cotton. Our clover plant won't last more than three years.

Mr. Howland. The idea of that paper was to suit the neighborhood where clover does well. Blue grass grows and does well in this section, but what it does among the hills or poor country I can not say. Clover will yield more pasture than any other kind of grass during the growing season. I would recommend blue grass for woodland or permanent pasture, but when you come to the land where you have to change clover is the grass.

Mr. Mitchell. Clover grows rank with us and smothers out the timothy. We don't let it run more than two years. Our soil is very rich.

S. W. Dungan. While I am in favor of mixed husbandry, yet I do not approve of different kinds of stock grazing together. I had recently a heavy loss in that way. During the first freeze I turned my cattle, young Clydesdale horses and mules on a large stalk field. When it thawed out I turned them in a field with some Shropshire ewes. I thought I would turn these ewes out of that field in a short time. The man who fed them for me fed them on a nice blue grass plot. In two or three days I found a dead sheep. I went to where it was and saw it was one of my recorded sheep for which I had paid $60. I think the mules killed it. I looked in another direction, not more than a hundred yards away, and there lay another fine ewe, for which I had also paid $60, with its legs pointed heavenward; it was dead. I do not believe it is safe to turn different kinds of stock together, and I don't believe they do so well as to keep them separate.

C. A. Howland. These remarks are out of order, because the paper said that well-disposed stock might be turned together and vicious stock kept out. From what the gentleman said it was sheer neglect on his part.

Mr. Mitchell. I have some horses that are well disposed, but I dare not turn them with my sheep. Horses will sometimes jump on sheep when they are not vicious.

C. A. Howland. Sheep and cattle with young should not be where colts can run them. Where they are well disposed they may run together, but these points should be guarded.

Prof. W. C. Latta. I do not feel like indorsing the remarks of Mr. Mitchell. Neglect is not unknown to many farmers, and a little experience here may be a
Wool Growers.

Wholesome thing for some of us. It is good to give a little of our failures as well as our success. The gentleman said "well-disposed animals," but I do feel that the remarks of the brother were in order. We may profit much by listening to those examples of success and failure to our advantage.

Mr. Mitchell offered the following resolution, which was adopted:

Resolved, That when this Association adjourns it adjourn to meet in the rooms of the State Board of Agriculture, in the State House, on Tuesday, January 24, at 10 o'clock A. M., 1888.

S. W. Dungan, from the Committee on President's Address, submitted the following report, which was adopted:

Whereas, Our Heavenly Father in this allwise providence has removed from among us since our last session our loved and respected brothers and associates, C. J. Farquhar, of Randolph County; Oakley Purcell, Chas. W. Moffit, of Marion County, and Clark Riggs, of Morgan County; therefore,

Resolved, That in the death of these associates, we keenly feel the depletion of our ranks, and recognize the loss of honorable and efficient members of this association, true friends and worthy citizens.

Resolved, That in the death of Brother Farquhar, who was for the last four years Secretary of this Association, we recognize the loss of a careful and painstaking officer, a genial and thoughtful friend and companion, a soldier who served his country honorably through the late war, and the effects of which upon his health was the cause of his early removal from among us.

Resolved, That we, the associates, brothers and friends, tender our sincere sympathy to the families of our deceased brothers; and,

Resolved, That these resolutions be incorporated in the minutes of this meeting, and that a copy of the same be sent, by our Secretary, to the bereaved families of the deceased.

Discussion.

Mr. Mitchell. I had the pleasure of an acquaintance with Mr. Farquhar and always found him cheerful and zealous, always ready with a hand of welcome. I have ever found him to be a noble hearted man, and attentive to business. The other brothers, no doubt, were good men, but unfortunately I did not have an acquaintance with them.

C. A. Howland. I heartily indorse what Mr. Mitchell has said. I was acquainted with Mr. Purcell. He was a true man, a man possessed of many virtues socially, living to the interest of his associates, a man kind hearted and disposed to do right. We believe they are to-day, though far from us, perhaps, associated in basking in the presence of that Great Shepherd whose mission it is to make happy the pure in heart.

Mr. Levering. I have been acquainted with Mr. Farquhar for several years. He was a member of the Shropshire Association, and one of our best workers, and that Association adopted a resolution of sympathy and regret at its annual meeting. I indorse what Mr. Howland and Mr. Mitchell have said.

Thos. Nelson. Those gentlemen have expressed my views regarding Mr. Farquhar.
S. W. Dungan. I wish to say a few words in relation to these noble men. I was intimately acquainted with all of them for a number of years, and allow me to say without being egotistical it was through my solicitation that all these men became members of the Indiana Wool Growers' Association. I first met with Mr. Farquhar in 1877. He came to my house to buy Cotswold sheep. I sold him ten ewes. I then urged upon him to become a member of the Indiana Wool Growers' Association. After this all of you who have been acquainted with him know as much as I of the genial qualities of his mind and heart.

The Committee on President's Address submitted the following resolutions:

Resolved, That we, as wool growers, heartily favor the passage of the bill now pending in our Legislature providing for the establishment of a Sanitary Stock Commission.

Resolved, That we indorse what is known as the Miller bill, now before Congress, and urge our Representatives to give it their earnest support.

Resolved, That a copy of these resolutions, properly signed, be transmitted to our Legislature and our Representatives in Congress.

Pending the adoption of the resolutions, the following discussion took place:

Mr. Nelson. This bill originated with the cattle men, and is supposed to represent the various interests throughout the State of Indiana. I think that something of this kind coming from the wool growers will have an effect.

C. A. Howland. I would like to know, before voting, the subject matter contained in the bill before the House. The signs of the times are that the farmer can have about what he wants. They are becoming educated up to the point where it is really to their interest. The time has gone by when they can play off second grade matter on farmers. When a bill of such importance is before the Legislature the importance of crushing out anything that interferes or hinders the prosperity of that class of people that supplies the necessaries of life to the world is of greater magnitude than anything else that concerns us in a legislative way; but still there are certain points to be kept in view. The American people are so intense when they get in a certain line of protection they are liable to go to extremes, and we want to guard against this as we pass on as much as possible. I am not in favor of paying exorbitant prices for condemned animals in order to crush out the disease. I want it understood that the parties owning the stock should bear a portion of the loss in order to make them more painstaking and careful. The health and welfare of the live stock of the country depend on the prudence of those who have them in charge. If we raise the price too high, they will not exercise that care and diligence to ward off this disease. I think this question has not been agitated enough. The individual who has this disease among his stock should not be paid in full, but a portion of the loss should rest on him. We want this matter looked into carefully. We will have a law if we can to crush this out. Whenever the farmers move in a mass the thing is done.

Mr. Mitchell. This bill is an important measure in the interest of the farmer. The idea is to get a law whereby contagious diseases among stock may be crushed out of existence.

The resolutions were adopted.
The following officers were elected for the ensuing year:

President—S. W. Dungan, Franklin, Ind.
Vice-President—J. A. McIaughey, Gallaudet.
Secretary—J. W. Robe, Greencastle.
Treasurer—J. L. Thompson, Arcana.

Mr. Dungan, upon assuming the duties of President of the Association, spoke as follows:

Gentlemen of the Indiana Wool-Growers' Association:

I want to say briefly it has ever been my pleasure since my connection with the Indiana Wool-Growers' Association to faithfully perform the duties assigned me, and it has ever been a pleasure to work for the promotion of my friends to the highest office in the gift of the Association rather than aspire to it myself, but I thank you just as much for the compliment and honor conferred upon me in selecting me as your President during the coming year, and I assure you that I shall make every effort to faithfully perform the duties of that office, and in return I ask your hearty sympathy and cooperation. Thanking you again, I shall not speak further. However, there is one word that occurs to me—that is, I want to say to the members of this Association that I desire that each one would take an account of your flocks at the present time on your return home, and keep a record of what you sell and the money you pay out for stock and the amount of money received, and next year we want a big experience meeting here, and let every member of the Indiana Wool-Growers' Association give his experience in profit and loss in sheep husbandry. This is something we have never done, and we want to do this the coming year.

Mr. Nelson. I wish to offer my thanks for this general expression of the appreciation of my services, and hope it will always be a pleasure to meet with you as long as I may be permitted to do so. I have not desired any position, but I do want to be permitted to attend your meetings for many years yet. In looking over the old reports I find that I have been coming continually for twenty-two years to Indianapolis. It has always been a pleasure to meet you.

The convention adjourned sine die.
SWINE BREEDERS.

The eleventh annual meeting of the State Swine Breeders’ Association met in the rooms of the State Board of Agriculture January 27, and was called to order by President D. L. Thomas. The roll was called, showing a large representation present, after which President Thomas delivered his annual address, as follows:

Gentlemen of the Association: Our eleventh annual session brings us together under less favorable conditions, in some respects, than usual, on account of a combination of circumstances. The general depression has affected our business in common with other interests. When times are dull and prices generally are low, farmers do not, as a rule, push the improvement of their live stock as they do when times are flush. Yet, in a business point of view, it is all the more important. For, when times are dull, scrub stock is the hardest to dispose of, even at the lowest prices. Then, while there is systematic gambling in all food products—while a few men can place prices for both the crude and manufactured products of the farm—we may expect the prices to be placed in the interest of the few as against the producers. This state of affairs will continue until public sentiment brings about reform in the way of needed legislation. Swine breeders may, if they will, help hasten this reform by helping create that public sentiment. Another alleged cause of depression is over-production. I think under-consumption is the true solution. Hon. Carroll D. Wright, United States Commissioner of Labor, estimates in his late report that there are 1,000,000 people out of employment who would work if they could get it to do. In addition to this a very large per cent. of workingmen do not have constant employment, so that their average daily earnings per year run very low. For these reasons the food consumers of our country can not make liberal purchases of the necessaries of life. A small per cent. of the wage-workers of our country are supplying their families with full rations of meat. You may set it down as a fact that the “overproduction” theorist belongs to the other class. He makes his estimate of the situation upon a full stomach. But I can not have the temerity to say “overproduction,” so long as thousands of families retire nightly pinched with hunger. Our foreign market is not what it should be. France and Germany continue to prohibit American pork products. They not only shut us out of their own markets on the charge that our products are unhealthy, but they create thereby a prejudice against our products among the
SWINE BREEDERS.

people of other nations, so that they purchase more sparingly. It is well understood that those charges were made simply as an excuse to shut us out without resorting to a high protective tariff. Another drawback is found in the ravages of disease. Indiana suffered worse in 1886 than for many years. Mortuary statistics for each year, ending April 1, are as follows: 1883, 288,287; 1884, 351,166; 1885, 326,555; 1886, 402,169. At $4 per head the loss was over $1,600,000. The number dying during the year was 24 per cent. of the number on hand April 1. Township trustees' reports for October and November last put the loss at 18\% per cent. during those two months alone. From this basis it is safe to say the loss to farmers during the current year will foot up over $3,000,000 and probably reach $4,000,000. There is no good reason, in my judgment, for this great mortality among swine. The percentage can be greatly diminished; but, as I have heretofore indicated, the process will be slow. It is safe to say that fully one-half is due to negligence. I do not believe that swine disease and death can be entirely avoided. Disease is insidious and will steal a march upon the most careful and painstaking swine raiser. But that does not justify keeping up or tolerating conditions that will breed disease. The hog raiser must make the business a study. He should see his hogs each day and note their condition. Observe if there are any symptoms of disease. Note the droppings. Here is found the surest and truest index to the internal condition. And if there is a sign of disease apply the remedy at once. If disease can be stamped out at all, it is in its incipiency. And close observation teaches the hog raiser that his herd is subject to a variety of diseases, and also that no single compound can cure all diseases. The idea is absurd. The stock raiser should acquaint himself, at least to some extent, with the ordinary diseases that attack the class of stock that he is handling. Also learn the usual remedies. Then he can apply rational treatment. It is cruel to administer a remedy the nature of which you don't understand, in a case of sickness which you don't understand. You are as apt to kill as cure. My rule is to give no medicine when I am ignorant of the nature of both the ailment and the medicine. But aside from medicine, a reasonable knowledge of sanitary rules is within the reach of all.

Dr. Rooker read the following paper on

SWINE PLAGUE OR HOG CHOLERA.

Swine plague, or hog cholera, is an acute infectious disease. Though a disease peculiar to swine, it may, under favorable circumstances, be communicated to other animals, but we are very doubtful whether it can be to man. It can and may attack the same animal twice, and even three times, but if it does, the second and third attacks are always mild, and are not apt to become fatal, unless complicated with other diseases. As a rule, the first attack, provided the animals recover, produces immunity from the effect of a subsequent infection. This is the rule in almost all contagious diseases, such as small-pox, measles, scarlet fever, whooping-cough, etc., in the same family.
SYMPTOMS.

I shall not devote much time to the symptoms of this disease, taking it for granted that the symptoms are sufficiently understood by the most of the hog raisers. In its malignant form, the swine are often attacked without any premonitory symptoms, and die in a short time. Again, the disease may commence gradually, with dry, hacking cough, loss of appetite, curvature of the spine, with contraction of the abdominal muscles. Should there be any young pigs in the herd they die first, and sows with pig are apt to abort.

PROGNOSIS.

This is modified by the season and the size of the herd. The larger the herd and the greater number of animals sick at the same time, the more malignant the disease will be. This depends on the larger amount of excrement and poisoned germs produced—the percentage of deaths often being as large as 80. Again, in small herds, and in cold, dry weather, the disease will assume a mild form, many of the hogs fully recovering. The different varieties of this disease, as to its malignancy, has misled many as to the value of different forms of treatment. In the malignant variety the hogs that don't die outright never fully recover, and should they, they are not worth the corn that it takes to fatten them, and it is better to kill and burn them at once.

MORBID CHANGES.

There is great ignorance existing among many of the farmers as to the cause of hog cholera. I have heard many of them declaring that it depended upon worms; another, that it was lung fever; another, that it was bowel trouble, etc. The fact is, hog cholera or swine plague is a constitutional disease—a blood disease—every organ in the system is diseased. In all post mortem examinations I have made, and I have made a great many in the past twenty-five years, I have invariably found every organ in the body more or less affected. Sometimes some organs appeared more affected than others. Different epidemics appear to operate at times differently. Sometimes the poison appears to spend its force more on the alimentary canal, and as a result we have vomiting and diarrhea. Again, it attacks the bronchial tubes and lungs, and we have coughing and pneumonia. Again, in the more malignant variety, we have it spending its force on the nervous system, the brain becoming overpowered, and the hog dying at once, or in a short time, from some nervous disease. Again, the kidneys become affected; there is suppression of urine, and urena poisoning is added to the other complication. I will state, hastily, that in all the post mortem examinations I have made, I have, in the majority of cases, found pneumonia or inflammation of the lungs with pleurisy, frequent pleuratic adhesion, with hydrothoraces or water in the chest; inflammation of the brain, with effusion under them; inflammation of the stomach and bowels, with frequent ulceration of pears glands, as in typhoid fever; sometimes complete perforation and enlargement of the liver, spleen and kidneys. The
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microscope shows that the blood is highly affected in the last stage of the malignant form. Red corpuscles are diminished, also the fabric. There appears to be an effort of nature to eliminate the poison by the skin, and, as a result, we often find the skin much affected with red and inflamed blotches, similar to small-pox, often assuming the form of abscesses. I have often found different kinds of worms, but then we find them in healthy hogs.

CAUSES.

This is the most important question we have to consider, for could we find the secret cause, the prevention and treatment would naturally present themselves to us. I am confident that we have found this cause, and that it consists of a germ or parasite that is taken into the system by the mouth, lungs and abraded skin, and after a period of ulceration, lasting from nine to twelve days, it manifests itself in the form of plague. The greater the number of the parasites or germs, the more malignant the disease will be, and vice versa.

HYGIENE AND PROPHYLACTIC.

This is another important part of my subject, that of prevention, for in medicine prevention is always better than cure. The virus that produces swine plague can be generated, and will multiply outside the body of the swine for a long time, under favorable circumstances. We must guard against storing up this virus in confined places. When it has but little access to oxygen or air, and when there is added to this organic matter and moisture (for this will serve to preserve its vitality and to increase the virulence of the poison), the vitality of this poison may be retained in old straw stacks or manure piles, and under the floors of pig pens for twelve months. The practice of allowing hogs to pile around old straw stacks is bad, and it is worse, provided the straw is moist or wet. It is not unusual to find in the country dozens and often fifty pigs and hogs piled in a heap in a manure pile or old straw stack in cold weather, squealing and fussing all night; the ones in the bottom almost entirely deprived of air or smothered to death, and those on top freezing. They are called out by their owners in the morning to be fed, those underneath sweating, the pores of their skin open. They readily take cold, followed by lung fever or bronchitis, and remain sick the balance of the winter, if they do not die. Hogs and pigs wintered in this way will come out in the spring weak and fit subjects for the cholera. Neither should hogs be allowed to sleep under barns or in any other inclosed place. This crowding and sleeping in such places will not produce hog cholera, but it will debilitate your herd and predispose them to it, and should they have it, and be allowed to remain in such places, it will be almost impossible for you to get rid of this disease until you destroy or burn such places. The germs of this disease can be preserved under the floor of the pig pen all winter. I think it much better not to floor pig pens. Should your pen become muddy it is much better to remove the pen to a dry place. There is great diversity of opinion among farmers and hog raisers as to the contagiousness of swine plague, many claiming it is not and vice versa. This depends on a want of knowledge of the virus. Let
us examine for a short time some of the different modes of the transportation of this virus. As we have found, it may remain latent for over twelve months in old straw stacks, under the floors of pig pens, under the barn, or in the grave of a hog that died of the disease. One farmer says: "I know the disease is not contagious, for my hogs have it and they had no chance to take it." Well, this poison can be carried for fifty miles on the bill and feet of a turkey buzzard. This bird will feed on a dead pig, rabbit or anything else in the field of your herd, and leave ten thousand of these germs to be taken up by your hogs, and thus leaves you the disease. Again, a fly has been found to have five thousand of these germs in its stomach; he leaves the sick herd of a farmer to visit your slop-tub, a distance of ten miles, to deposit some of these germs, to be fed to your pigs in the evening. Again, these parasites may become dry, and in the form of dust be carried by the wind for miles, and deposited on your grass or clover. Another fruitful source of hog cholera in this vicinity is the stockyards of this city. I am informed that there is hardly a day in the year but that hogs are brought here in the incipient or first stage of swine plague. Through the excrement the germs are left in the dust to be carried on your feet or clothing to your own healthy herds at home. I think I know of one of our largest swine breeders having inoculated his own herd in this way. It would be better not to allow the carcasses of any dead animals to remain in the field with your hogs. It would be safer not to feed slop to your hogs in summer, provided the disease is prevailing in your vicinity. It is not safe for a raiser of swine to visit large stockyards and return to his own home without first changing his shoes and coat or thoroughly disinfecting them. It is not safe to buy stock hogs at the stockyards, or any other stock, unless it is kept clear of your swine at home. In conclusion of this most interesting portion of my subject, I will state that should your herd become diseased with cholera, keep them away from all inclosed places. Should they get to straw stacks, manure piles or floored pig pens, burn them up; fire is the best disinfectant. Should your hogs die, burn them at once, or bury them not less than six feet deep. Never mark, ring or castrate any of your hogs, if you have the disease in your herd, for the poison will readily be absorbed through any abraded surface of the skin.

TREATMENT.

A few days ago I fell in with one of your principal fine swine breeders on the train. He asked me if I would read a paper at the coming swine breeders' meeting. I told him that I had promised my old friend, Tom Reveal, to do this. "Well," says he, "I have had the cholera among my hogs the past year, and I can cure it; I will give you some ideas on the subject." With all due respect to the gentleman's intelligence in many other things, I could not help but think of how old Dr. Abernathy, the father of English medicine, used to commence his first lecture to his class at the medical college—"God have mercy on your poor ignorant souls." There is no treatment for hog cholera. We can no more cure it than we can typhoid fever, or any other self-limited disease. All the so-called specific for the treatment of hog cholera are humbugs. But one says: "You are mistaken, I had the disease in my herd, and tried it, and my hogs got well." I will answer
this by stating that you did not have the malignant variety; your hogs would have recovered without any treatment at all. In the malignant form there is no known medicine that will produce a cure. Your hogs will die, and those that do not die outright are not worth the corn that it would take to fatten them. It is better that they be at once killed and burned. A very good preventive, and one that I have been using for many years, when I know the disease was making its way to my herd is this: I mix carbolic acid with the feed, put charcoal and sulphate of iron or cupperas in the pens, and keep the hogs in as healthy a condition as possible. What we want, is legislation on the subject of contagious diseases among our stock. With proper laws, hog cholera and all diseases of this character can be stamped out. When you elect men to make laws for you, if you will look more to the worth and honesty of the man and less to party you might fare better.

Judge E. B. Martindale informed the Association that Mr. Kingan had extended an invitation to the Association to visit his slaughter-house during the meeting.

The invitation was accepted, and it was decided to visit the establishment Friday morning.

Mr. J. H. Beabout, of Rushville, read the following paper on

THE BEST AGE AND SEASON TO FEED HOGS FOR THE GENERAL MARKET.

MR. PRESIDENT: The best age for beginning to feed hogs is from nine to twelve months old. It depends on how they have been kept. The main object in feeding is to make the most gain with the least cost; therefore, you want your hogs to both grow and fatten at the same time. Some feeders think they can make more gain on thin old sows. Admitting that they can, the old sow will eat double the amount of food the growing one will, and her gain is fat alone, and no growth. The best season for feeding hogs is May or June, or the last half of September and October and half of November. For those two seasons have an abundance of fresh grass, for that is a great help in making growth—clover is preferable. The weather is generally favorable, being neither too hot, nor too cold. Now, gentlemen, admitting that we know the proper age and the best season to feed hogs, we can not breed and work for that end, on the grounds that the fatality of hogs has become so great and the variations of the market so innumerable. You are all well enough posted on the mortality of hogs, for disease has visited every county in the State, I believe, and four-fifths of the farms—probably more; but I doubt whether many of you have ever given much thought to the variations of the market, so I will call your attention to this by giving the highest and lowest prices paid for hogs in Chicago, each year, for twelve years: In January, 1875, hogs sold for $5.25; in September, same year, $10; in March, 1876, $10; September, $5.25; in June, 1877, $7.25, and in December, $3.50; in August, 1878, $4.80; in December, $2.45; January, 1879, $2.50; in December, $5.25; in 1880, May and June, $3.85; in August, $5.60; in January, 1881, $4.40; September, $7.50; in September, 1882, $9.25; in December, $5.40; in March, 1883, $7.45; November, $4; in January, 1884, $7.95; December, $3.75; in 1885, February and August, $5.30; October, $3.15; in September, 1886, $5.25; November, $1.25; the lowest price in twelve years was
$2.45, in 1878; the lowest price in twenty-five years was $1.75, in 1872; the highest price in twelve years was $10, in September, 1875, and March, 1876; the highest price in twenty-five years, $13.25. By examination we find hogs vary in price each year almost half, some years more. In nine years out of twelve, during the months of November, December and January, hogs reached their lowest price; this makes fall feeding rather hazardous. In seven years out of ten, during August and September, hogs reached their highest price. This is probably caused by the danger of feeding through the hot weather. In the months of January, February and March, five out of twelve years, hogs were highest. This is caused by there being but little gain made in severe cold weather. Taking into consideration the variations of the markets, the difference in seasons for feeding, and the fatality of hogs by disease, I would recommend all swine breeders that raise hogs exclusively for the block, to breed their sows to farrow the last half of April or the first half of May, exclusively, and by no means keep all sizes of pigs and hogs. Be careful about over-stocking; better have too few than too many; never suffer yourself to get greedy on account of your success in selling a litter for one hundred dollars, and conclude you can get rich by adding ten-fold, for the result is most sure to be to the contrary. You can pay more debts with twenty pigs properly cared for, than with one hundred, all sizes, and no care. A mixed lot of hogs is almost sure to take disease. The larger ones crowd the smaller ones out, so they become half starved and are sure to contract disease. Then your herd is in such a condition that you can not ship the well ones, and the consequence is, they nearly all die. Breeders never lose sight of one object, and that is, to realize on their stock as soon as possible, and never wait to sell hogs and pigs in one bunch, but sell as you can, if it should be but two at a time, and a half-dozen times a year. By so doing, you will not have so many exposed to disease, and the less you have, the better the care and the less liability to disease. Keep your stock in high flesh. Abandon that foggy notion of wanting thin sows to raise pigs, and by keeping your stock in this condition, if disease should attack your herd, you can sell the well ones, which should be done immediately on discovery. Keep the giltts for breeding purposes, as they grow enough to pay their keeping. You can base your calculations on averaging about four pigs to the sow. For illustration: Take twenty giltts, there will probably be three that will not get in pig the second service; sell all that are not in pig in March; after your sows farrow, there will probably be two or three lose their pigs; shape them and sell as soon as they are in condition; that will leave you nothing but your sows' suckling pigs; divide them in at least four lots—better not have more than two litters together; if too many, they are liable to rob each other, and cause you to lose them or have a lot of runts; take good, regular care of them, and your pigs will all do to wean about the same time; fatten the sows as soon as you can, after weaning the pigs, and sell them; learn your pigs to eat before you wean them; after weaning, take regular care and grow them as fast as you can, and as soon as they are old enough for you to select from, take out your sows to breed for the next season. This leaves your pigs for sale; crowd them, and do not be twelve months doing what you can do in five. Do not think you are economizing by trying to grow them on grass alone, and thus raise a lot of slim pigs to take.
disease and all die on account of not being fit to ship. Never forget that a little fat pig demands in our Eastern market very near as high a price as any weight hog and more than heavy rough ones. Watch your pigs closely, and if you discover disease attacking them, sell or ship the well ones immediately. Do not think they are too small, for they are as large alive as dead, and worth more. Gentlemen, I do not make these suggestions for the benefit of those who sell their stock exclusively for breeding purposes, but for the man who is toiling earnestly to release the mortgage from his homestead, and any amendment from you will be thankfully accepted by me.

J. H. Koons, Delaware County. As the question of hog cholera will necessarily claim some legislative attention, and probably the most important question that will come before this Association, I suggest that the papers just read be taken up in order and discussed, as many in attendance wish to return home this evening.

The Secretary read the following paper, prepared by Dr. L. A. Simmons, of Crittenden, Ind., on

SWINE DISEASE.

Mr. President and Gentlemen of the Swine Breeders' Association of Indiana:

A year has passed since I first met you in the capacity of a new member. At that meeting I was appointed to read a paper on diseases of swine at this, the next annual meeting of the Association. The assignment gave me a wide latitude, an extensive range of subjects, sufficient for the compilation of an entire volume, including the whole category of diseases, their etiology, pathology and therapeutics. It would seem, at first view, with this liberty and volume of subject matter, an easy task. But in view of the fact that the majority of people to whom this paper is addressed, and into whose hands it may subsequently fall for perusal, are not versed in medical science and sanitary laws but are eagerly watching and waiting for some practical instruction to help them guard their interests by prevention and cure of disease in their herds, the difficulty and responsibility of the duty magnifies.

This paper, therefore, is designed to be a plain statement of conclusions reached by experience and observation, rather than an elaborate scientific essay on any one or more of the diseases of swine. I make no pretention to being an expert in veterinary science. My medical education and experience have been confined to human medicine for a period of twelve years. I have always treated domestic animals on general principles, very much the same as the human subject for similar diseased conditions, taking into account their peculiar anatomical differences, their comparative constitutional strength, etc. To a medical man versed in the chemistry of drugs, their physiological effects in health and disease, there is no difficulty in selecting remedies for man or beast when the diseased condition in question is understood. The difficulty lies in the diagnosis. The hog, like other domestic animals, has no language or intelligence by which they can communicate their feelings or condition to man. It is, therefore, only by careful study and observation that some of the more obscure diseases are understood. The masses, however, representing the swine industry in this country, are not favored with a medical education, and to them the difficulties and perplexities in the treatment of disease are greatly increased and often amount to impossibilities.
No possible good can come of a plan of treatment that is not really indicated. To select this, or that, or the other remedy, and administer without some knowledge of pathological conditions to be met, or the physiological effects of medicine employed, is to take so many chances of killing the animal in the hope of a possible chance of finding a cure. It would, therefore, be better, in all cases where diseased conditions are not well understood, to rely on careful nursing and feeding, with proper hygienic surroundings, such as common sense would dictate as most conducive to comfort and recovery, than to try experiments fraught with danger. One of the most common errors and generally the most expensive experiments that the swine breeder indulges in, is the use of patent and proprietary “cholera cures.” The incipient stages of all manner of diseases to which the hog is subject are treated as the prodromic or initiatory symptoms of cholera. These patent nostrums are purchased at long prices and fed indiscriminately to the entire herd as curative and preventive agents, without regard to cause or nature of diseased conditions. There are many possible evils growing out of their use, a few of which I will notice.

First. They positively do harm by aggravating diseased conditions, when not indicated. That is, if they do not assist nature in her efforts to eliminate disease, even if they be inert substances, as many of the patent medicines are, they are an obstruction in nature’s way. If they chance to contain some active medicinal agents they do harm by operating directly against and weakening the vital forces and increasing local inflammatory conditions.

Secondly. The credulous breeder is induced by the glowing advertisements and positive assertions in printed circulars to rely on these remedies, often to the exclusion of all rational treatment and proper hygienic care.

Lastly. They are composed of cheap, bulky, and worthless substances, generally, as remedies valued by the breeder in proportion to size of package at given price.

Other evils growing out of the purchase and use of this class of remedies need no further comment. I became a breeder and fancier of swine by choice, and have succeeded thus far. I attribute my success to the general management. I depend on prevention rather than cure of disease. I have learned by experience that the hog, under good management, is a very hardy animal, peculiarly free from general diseases. Their habits of life, their indelicacy of taste, and disposition to plunge the nose into all manner of filth and to consume decaying animal matter, expose them, more than all other animals, to the causes of general and infectious diseases. But, on account of the activity, vigor and strength of their physiological functions in health, they readily repel the causes of disease. A perfect standard of health, which means the absence of any diseased condition, or morbid habit, conduces more than all other agencies to protection against contagious and infectious diseases. The animal economy has an inherent principle, called vital force, that antagonizes all causes of disease, and tends naturally to restoration. The tone and strength of this principle will be in proportion to the general health of the individual—disease weakens vital force—perpetual health strengthens it. If we keep our stock in good vigor by proper management, when disease comes we are prepared to meet it on a basis that affords the greatest prospect of success in its
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Treatment. Proper management includes all treatment of the hog; feeding, housing, hygienic surroundings, etc., of which it is not the province of this paper to deal, but only to mention as an indispensable element in the prevention and treatment of disease.

* * *
Diseases are of two general classes. One class is due to the treatment the hog receives at the hands of his master. The domestic hog has not the liberty of his wild ancestor, to instinctively select his food and his remedies from Nature's great store-house—the forest—but is entirely under the restraint and control of man. Owing to this fact, and that the idea has long and generally prevailed that "anything is good enough for a hog," and that farmers have practically based their operations on such an understanding for a long time, the majority of diseases to which they are subject fall within this category. Thus, catarrh, pneumonia, bronchitis, pleurisy, indigestion and all its consequent evils or complications, scrofula, tuberculosis, vermicular and parasitic diseases, rheumatism, diphtheria, quinsey and nearly all other diseases to which the hog is subject may be caused, and most generally are caused, by some fault in the general management.

* * *
A cough may be due to a cold on the lungs or bronchitis, caused by sleeping in a cold, damp bed, or exposure to a brisk cold wind immediately after coming out of an over-warm and crowded nest; or it may be due to inflammation of the lungs, or pneumonia, from some causes; again, it may be due to malassimilation. It is very common to see and hear a pig cough, whose stomach has been ruined by over-feeding and feeding at irregular intervals; a portion of the incompletely digested aliment passes into the circulation and irritates the lungs, producing cough, and eventually bronchitis, etc. We know that this condition in the human subject produces cough, neuralgia, rheumatism and general disturbance of all the functions, and, judging by the symptoms, we are led to believe the hog suffers about the same. It is obvious, then, to treat it successfully we must first ascertain the cause and remove it if possible. To treat a cough due to indigestion, put the pig on milk, in small quantities, administered often, alternating with a small feed of cooked potatoes, bran and shorts, and other acceptable and easily digested food, if the animal is very valuable—and here I desire to say that a hog that once acquires chronic indigestion is not valuable, and not worth the cost of its cure. But if valuable, and not too far gone, give with the milk, three times a day, a teaspoonful of subnitrate of bismuth and pepsin. If the appetite is poor give a teaspoonful of a mixture containing equal parts of ginger and allspice in the bran mash, once or twice a day, until appetite is restored; keep clean, warm and dry, and give a limited quantity of water at regular intervals.

To treat a cough due to cold, ascertain by careful examination whether you have to contend with a real inflammation of the lungs, pneumonia, or the less dangerous condition, bronchitis, or whether or not you may not have to deal with both of these in the same case, and also pleurisy, constituting a case of broncho-pleuro-pneumonia.

If the breathing be hurried and there be fever with crepitation, and cooing, whistling sounds in the lungs, heard by placing the ear to the chest, with indisposition to move and anxious expression, you may know that there is inflammation. If there be an expiratory moan there is also pleurisy. To a hog thus affected I
would give 8 to 10 drops tr. aconite every 2 to 4 hours; fluid ext. of ipicac two oz.; tr. opium two oz.; bicarb potassa one-half oz.; dissolve potash in an ounce of water, add the other ingredients, and give from one to three teaspoonfuls every 4 hours. Increase the opium if there is evidence of much pain or troublesome cough, or give hypodermic injections of grain to half grain doses of morphine. The potash acts chemically in the blood and prevents the coagulation of the fibrine, thus preventing filling up of the lungs, or hepatization. The ipicac acts as a sedative and expectorant. Give the aconite in water, varying the dose according to frequency of the heart’s action and temperature. Tr. veratum and tr. gelosemium are also good agents to reduce fever and control the heart’s action. Give warm, nourishing food, warm, dry bedding in doors; exclude all currents of cold air. If necessary physic with a drench of salts, blanket and bathe the chest with a liniment made of equal parts of turpentine and acetic acid. This is a very strong counter-irritant, and if it produces too much irritation and pain, increase the opium. Opiates may be given by injecting a solution of morphine or laudanum diluted with water into the bowels; use a small penal syringe. For a cough due to bronchitis, subacute or chronic, I would recommend the following formula: Fl. ext. squilla 4 oz.; tr. sanguinaria 4 oz.; hydro-chlorate of ammonia 1 oz.; mix and give a teaspoonful four times a day in milk. Some cases may do better by substituting iodine of potash for the ammonia, using about half the quantity by weight. Observe the same precautions as in lung fever, and let the diet be nutritious and easily digested. Counter-irritation with the above liniment is also very beneficial. Rheumatism may be relieved by salicylic acid given in water 5 to 8 grains every four hours. Some cases will do better to give an alkali. The carbonate of potash may be given in dram doses every three or four hours dissolved in water. Acute diseases of the above mentioned character may be treated with propriety in animals of much value, and they may entirely recover. But to me, food animals, and especially the hog, affected with chronic disease, or any malignant disorder, is worse than useless. It is wrong to undertake to patch up a poor invalid hog for somebody else to eat or breed from. It should be criminal. In the aggregate there are hundreds of thousands of dollars lost annually by hog raisers taking care of and feeding runts and diseased hogs. Better whack them on the head and give the food, room and attention to healthy, vigorous stock. Besides being a perpetual expense and worry, they invite disease into the herd. I had not intended to lay down a treatment for any disease in this paper, but on account of the great prevalence of inflammatory affections of the lungs, especially, I have dictated the above. I have said there were two general classes of disease. One due to careless management; the other class is due to antagonistic elements in the form of living organisms. To this latter class belongs cholera. There is no longer a doubt among scientific men that hog cholera is caused by a bacterium, a living animalculem, invisible to the naked eye, but readily seen under the microscope. In a paper by Dr. D. E. Salmon, published in The American Monthly Microecopical Journal, November, 1886, this microbe is described as measuring about .0012 mm. to .0015 mm. in length and about .0006 mm. in width. It is described as existing in the form a figure of eight or a short rod united in twos.
This observer further details his investigations in a paper read before the American Public Health Association, Toronto, Canada, October, 1886, and published in The Sanitarium. He says of this germ: "It is motile, stains deeply around its entire periphery, and, so far as we have been able to ascertain, does not form spores. It grows on nutrient gelatine without liquefying it. The cultures of it are fatal to mice, rabbits, guinea pigs, pigeons and swine, but they do not seriously affect fowls." This germ, we have long contended, is capable of being transported from herd to herd on the feet of men, or other animals, by vehicles, etc.; by buzzards that feed upon cholera hogs and fly from neighborhood to neighborhood, emitting their nauseating and poisonous aliment when hogs come in contact with it. Dr. Salmon says: "It seems difficult at first to explain how the contagion, carried on the feet of animals and people, and in many other ways in which but a small portion can be transported, is able to infect individuals and start new outbreaks. Yet this is evidently true, or the plague could not spread from herd to herd as frequently as we know it does." It has been found to live and develop rapidly in ordinary water, increasing a hundred fold in five days. Thus the running streams of our country may become infected and carry the disease. "The moist organic matters, such as exist in inclosures where hogs are kept," are suitable media in which the germs often multiply. Certain remedies or anti-zymotics have been found to destroy these bacteria, but no mode of treatment has yet been discovered that will successfully combat the disease and effect a cure. Carbolic acid, sulphurous acid, bichloride of mercury, permanganate of potassa, etc., are the remedies of which we would expect most, but to be efficient they would have to permeate the entire system. To give any remedy of this class to that extent would produce toxic effects, scarcely less dangerous and fatal than those produced by the bacterium. However, in the treatment of cholera I would recommend the moderate use of some one of this class of remedies, not to endeavor to entirely neutralize the contagion, but to assist nature. For want of time I must bring this paper to a close. I am sorry to thus summarily dispose of the subject—cholera—but enough has been said to direct attention to its mode of propagation, and I trust to some extent to the means of its prevention and cure.

Mr. Shepherd. I was not present at the reading of Dr. Roeker's paper, and do not know what thoughts it contained. I do not know that I can enlighten you gentlemen on this subject of hog cholera, but one thing I notice in this last address is, after giving a list of drug store compounds, he finally concludes by asserting that the best thing to do is to shoot cholera hogs. I think if he had shot them in the start it would have been an improvement. It seems to me a discussion should be carried on in language which hog breeders can understand. The article I have heard does not come within that province.

Judge E. B. Martindale. I know Mr. Shepherd has a good theory, but is not willing to express it. He does not seem to get within the periphery of the question. [Great laughter.] I am glad to know that the breeders have practical sense enough, and do not theorize too closely. To take a herd of hogs and give themaconite, bathe their feet, and put the ear to the chest and tell what is to be done is a difficult job. [Great laughter.] The ravages of hog cholera seem to be on the
increase; there were between three and four hundred thousand that died in the State of Indiana during 1886. In Henry and Delaware counties it swept down like a tornado, it followed right along on that line sweeping everything before it and you may count on four million dollars in 1886 taken out of the pockets of the farmers of Indiana, by this disease. There are various remedies advertised, but they are unreliable, and every man who starts out with a specific preventive or cure, is a quack sure; there is no doubt about it in my mind. It has not been demonstrated that anything has been sold among farmers who proved a preventive or cure. With the farmer, the first thing when his hogs take the cholera, is to get the well ones to market. A hog not diseased at that time is all right, yet they have discriminated and allowed cholera to go through and destroy ninety per cent. of their herds in places. Some think it is measles. In this disease, as well as others, there are microbes, no doubt, but they are so exceedingly small you can not distinguish them through a microscope. If it is measles, it is microbes. Smallpox is also a microbe; indeed everything of the kind possesses them. I want to know whether anything can be done to cure or prevent this disease? Mr. Mustard thought a few years ago he had a specific that would accomplish this end, but now he says it will not cure. These are practical questions, and I want to hear them discussed. When I was a boy I never heard of hog cholera; we did not know anything about it then; whether it was because we did not have the fine breeds then that we have now, I can not say. Whether climatic changes have had an influence is a matter for thought. Let us, as a Breeders’ Convention, tell what we know about the best way to handle the hog, and work to each others’ interest in this matter.

James Mustard. The Doctor’s article, I confess, is far beyond my comprehension. If we have to have a drug store to compound medicines, it seems to me that is useless. I wish to say to the Judge, and for the benefit of breeders generally, not to put too many hogs together; it won’t do at all. If you want sows to do well, you must have only a few together; two is enough when heavy with pig. The more you have together, the more risk you run. As hog cholera has puzzled me, I think it will all of you. We think it is contagious, and again we think it is not. Mr. Shepherd and I do not agree on this matter. The hog cholera is a parasite without doubt, but how to kill it we do not know. Sanitary measures are good. I keep my beds clean and supply fresh feed and pure water. My houses are floored. I sweep them clean, sprinkle a little carbolic acid on the floor, and then put on a bedding of straw. I feed bran and slop and keep them in as good condition as possible. Under these conditions I have not had the cholera among my hogs for eleven years. As a preventive, I use crystal carbolic acid, sulphuric acid and hydro sulphate of soda.

C. A. Robison. I rise to defend the defenseless. While I can not agree with the method the Doctor pursues in his paper, I certainly can agree with the contents of the paper, because the Doctor knew just what he was talking about.
SWINE BREEDERS.

DISCUSSION OF MR. BEABOUT'S PAPER.

James Mustard, Marion County. Mr. Beabout's paper is an excellent production, yet I differ with him in regard to young stock for breeders. If you breed old ones you get harder and better animals; they are better constituted. It might do if raising for fattening purposes, but I would not recommend it for breeders.

T. M. Reveal, Marion County. I would ask Mr. Mustard if the Poland-China originally in Ohio became a noted breed by using young animals?

C. J. Clark, Hamilton County. I think Mr. Beabout's address is an excellent one, especially as regards keeping hogs of various ages separate. I do not believe in keeping all ages together, as they are more liable to disease.

T. M. Reveal. The largest of those raised in Ohio were from gilts, and sold in Chicago for the best prices.

W. C. Williams, Henry County. The highest prices that have been paid for Poland Chinas have been for those bred from gilts and young male hogs.

James Mustard. If you breed from gilts and young male hogs you can't keep up the size. That is the way the general farmer breeds, and the quality is continually running down. They make large heads and snouts [laughter]; when you come to this in breeding you are losing all the time.

Mr. Beabout, Wayne County. A neighbor of mine breeds exclusively from gilts and raises some of the finest hogs we have.

Mr. Fout, Grant County. We have had similar results as that to which Mr. Beabout alludees. A neighbor of mine takes April pigs, which average 250 pounds in August or September, for breeders.

James Mustard. What is the male from he uses on the gilt?

Mr. Fout. He secures young males, generally, where he can get the cheapest. He seeks after good stock.

T. G. Terry. I would like to ask what the term gilt means.

Mr. Beabout. It is a sow that has never had pigs.

T. G. Terry. The dictionary says a young castrated animal do not know how you could raise pigs from such an animal. [Laughter.]

Mr. Beabout. That is the term known in this country as gilt.

S. Shepherd, Indianapolis. I commenced visiting Ohio as far back as 1869. When I first went there I found among all the breeders of Butler and Warren counties not half a dozen breeders who kept old sows, but bred to young sows, and at that time the breed was considered the best in America. I think it is now, but even at that early day it was a preëminent breed. The question of breeding from young sows depends on how you treat them. If you let the sow run on the commons, and not much of it, at nine months old your gilt will be a failure. The treatment given by the feeders in the Miami Valley was to crowd with seed from the first until the sow had pigs. They all developed in one year what the old woods hog developed in six or seven years. You get in the young hog what you had in the old hog by care and systematic feeding. A sow should have strength and size to successfully care for its young. The custom has been in Ohio to crowd these young sows forward, not only up to breeders, but they keep them fat as fat hogs all through the winter. By the time they are a year old they are sufficiently
developed; they have accumulated resources in the body, in the shape of fat, sufficient to enable them to carry a litter of pigs through successfully. The question is as to what condition the gilt is in, whether they will successfully carry them through. If they have been kept at a starvation point for nine months they can not do it, but if treated well and pushed all they can bear, they will raise you as good or better pigs than old sows. It depends more upon how they have been kept than upon the age of the animal. A young sow is more careful than an old one, especially if the old sow is fat; for that reason many prefer young sows. When we raise for pork we don't want to carry these old sows over when we can have new animals that will answer the purpose just as well. I have seen young sows that would weigh almost six hundred pounds at one year old, and it is not unusual to make them reach four hundred. A young sow requires a little more attention and feed, and the pigs a little more care, but if proper treatment is given they will go forward and make as good hogs, as pigs from old sows.

Mr. Lloyd Mugg, of Howard County, read the following paper on

THE AGE OF BREEDING SOWS.

As I have been chosen to give my views on the proper age to breed sows, I will endeavor to give a few of my ideas on the subject, not supposing that all of the breeders and farmers will agree with me.

I would recommend that young sows be bred at ten and twelve months old to bring pigs at fourteen to sixteen months old, as I think the sows will make better mothers, and will bring larger litters and stronger pigs, and the sow will be better developed and make larger sows when full grown, and their pigs will grow faster than to breed at a younger age. If we breed from young sows for three or four years, and breed the sows so as to farrow before they are a year old we will decrease the growth of our herds so they will not be fit for breeding. I have noticed that you may take a litter of pigs from a young sow and a litter from an old sow and feed them alike, and the pigs from the old sow will outgrow and make larger hogs when fed out than the young sow's pigs.

I think that pigs will have a better constitution bred from matured animals than from young ones. I know that most farmers will say that to wait till a sow is from fourteen to sixteen months old is too long to wait for increase. I know of men buying a pair of pigs at weaning time, taking them home and letting them run together, and when the sow is about eight months old she has a litter of pigs, and the result is she does not do much good with her pigs, and she does not grow out to make a large fine sow. I think that men who breed and sell for breeders ought to breed as much as possible to matured animals, as a majority of farmers will breed all from young sows and then in the fall feed them out, and breed from a new set of young sows, and they buy a young male and do likewise with him.

I have had better results when breeding young sows to cross them with a yearling male, or older, and when I want to use a young male eight or ten months old it is best to use him on aged sows instead of young sows. I notice that crossing in this way I get a less number of "runts," and the pigs will be stronger when farrowed and grow off better. I have also noticed when a young sow far-
rows a litter of pigs before she is a year old it takes more feed for her before farrowing time to keep her in good growing and smooth condition than a sow nearly matured, and I think that a young sow ought to be fed highly on good, substantial food. It is seldom that a young sow gets so fat that she overlays her pigs, and it requires her to be in good flesh to do justice with her young ones.

DISCUSSION.

W. C. Williams. The gentleman favors breeding at sixteen months old. This is not a good age. Most of our pigs are farrowed in March, April and May. If we breed at sixteen months old we would have pigs dropped in the fall and winter. I do not have good luck with fall pigs.

D. L. Thomas, Rush County. I think we should have the statistics of the State published annually instead of biennially. The Shorthorn Breeders appointed a committee to look after this matter. If the Swine Breeders would appoint a similar committee it might be well.

Mr. George W. Thomas read the following paper on

"BOXING AND SHIPPING."

I prefer a box made of elm lumber, on account of its being tough and not easily split, and yet very light when thoroughly seasoned. It is not dealing fairly with a customer to ship him a pig in a box made of thick, green lumber, thereby causing him to pay extra for expressage; besides such a box is so inconvenient to handle. The plank needs to be one-half inch in thickness, and the bottom should be in one single piece, which adds strength. For pigs the corner-pieces and slats need to be only two inches in width; the width of the plank should vary with the size of the pig. Also the state of the weather should always be considered. If the weather is cold broader planks should be used as a means of protection to the pig. When the self-feeder is required the front end of the crate should be made solid, so as to form a part of the box to hold the feed. With a single plank for the bottom it is easy to make a box for water. My method of making feed-troughs is to make them the same width as the corner or upright pieces. The bottom piece of my feeder or feed-box runs diagonally from the bottom of the left corner to the upper right corner. I saw a notch one inch square at the bottom, so that the feed discharges in the end of the water-trough. I also prefer to make the back end or door of a single piece; then the pig's tail does not get chafed, and neither does it drop its excrement in the office or car to the disgust of the express agent or messenger. I fasten the door with a nail or key.

Pigs should be protected on the way to the express office. If the weather is cold, there should be high sideboards on wagon, and horse-blankets put over the crates. If the weather is hot, the sideboards should be omitted and a shade should shield the pigs from the extreme rays of the sun. Pigs should not be delivered at the office or depot until near train time, giving only time to make out way-bills, as the pigs have generally to set on the sidewalk or platform and take the weather, and be annoyed by passers by. It is from such exposure that pigs contract cold,
and the purchasers are alarmed on receiving their pigs and find them coughing. The shipper can partially realize the situation by imagining himself thus confined in a crate where he can not exercise, shift his position, nor seek shelter.

The feed should be placed in the feeder at the office or depot; then in this new relation, with more or less excitement, the pig does not overeat itself. If overfed on the start, and then gets chilled and excited, indigestion and constipation are likely to ensue. Then the purchaser writes back: "My pig is coughing and stiff, and badly off. What is the matter? Has it been exposed to cholera?"

Sometimes the result of the exposure goes the other way and produces purging. The radical changes in treatment which, from the very nature of the case shipping enforces, in addition to the negligence of agents, is all that pigs should endure without carelessness by the purchaser. Equal care should be observed at the other end of the line by the purchaser. I have seen men take pigs from the depot and haul them for miles in open wagons, with no protection over the boxes, and the weather cold and stormy. That the pigs did not die at once is evidence that our improved hogs are not deteriorating in constitution. Then care should be used in management after reaching destination. Food and drink should be provided with moderation and gradually increased. If it is winter, warm bedding should be provided, and opportunity given for exercise. With proper care on the part of both shipper and purchaser, the comfort and safety of pigs may be materially enhanced.

**DISCUSSION.**

*W. C. Williams.* When we ship pigs to parties they always want them to eat on arriving at their destination, when they should not have anything but water. In shipping long distances they become sick, and do not feel like eating. Give the pig a little water and light feed until it calls for food. I shipped thirty-three pigs to Iowa this fall; they were taken out and given a little water, and the next morning they were all ready for their feed. Always give light feed at first.

*Mr. Shepherd.* I like the suggestions of Mr. Thomas in regard to boxing. In making my boxes I use wrought-iron nails or wire nails. The material may be thin, and by using wire nails it is not so apt to split the boards. I have found that linden lumber is better than elm, and it is equally light and tough, and easier kept straight. Where this can be obtained it is even better than oak or pine. As a protection, an old coffee sack, I deem, better than a wide board at the bottom, for when a pig stands up or lies down he is easily protected from the draught.

*T. M. Reveal.* I agree with Mr. Thomas in almost everything he said. Mr. Thomas says in the rear there is one board to prevent rubbing the tail. I prefer two slats, beveled. As to the excrement falling outside and being a source of annoyance at express offices, I would prefer it dropping outside than in the crate to the detriment of the pig.

*Mr. Russell.* I think Mr. Reveal is right in regard to the droppings and the comfort of the hog. There is a high rate for shipping our stock.

*Mr. Earhart.* In some instances they will allow shippers to put in feed. A short time ago I shipped two pigs to Nashville, Tenn., and put in feed; the shot did not miss a feed. Shipping long distances with that preparation and never miss a feed is a good thing.
Mr. Shepherd. A shipper should take into consideration that when you go to to the express office the box and pig are weighed. If he puts in feed he has to pay for that feed to the end of the line. But, ordinarily, when a pig is out from twenty-four to forty-eight hours, it is well for the shipper for the pig to go without feed.

G. W. Thomas, Rush County. We always have to pay heavily for expressing hogs. Our agent will let us leave the feed and charge for the box and pig, and extra if the excrement falls out in the way. I have a trough across the end; the feed is above and feeds down into it at one end in a funnel shape opening; as the hog eats it will continually run down.

Mr. Shepherd. At the Central Poland-China Association meeting we had under discussion the advisability of a new premium list at our State fair. It was the general opinion then that the matter should be presented to this Association, that we should take some steps to get as large premiums offered as in adjoining States. We have as good hogs as elsewhere. I think the present State Board should offer as large premiums as adjoining States. In order to get the matter in tangible shape, that instead of going to the Board with it, we thought it would be best to present the subject here first and decide upon some definite plan that we desired adopted. Heretofore a dozen breeders were sent to the State Board to ask an increase of premiums. I now desire to present a premium list adopted by the Central Poland-China Association, and I hope they will accept it as we propose, but if we can not get what we want, let us get as near it as possible. The swine interest in Indiana is as important as any of the domestic animals in the State. There is as much wealth invested in this industry as any other industry presented to the State Board. The premium list adopted by the Record Association at its last meeting I will now present to this Association and move its adoption, and also ask the appointment of a committee of five to present it to the State Board of Agriculture.

Lloyd Mugg, Howard County. I can not see any reason why the State Board should not adopt a list of this kind. The State of Indiana deserves as good a list as any State in the Union. We have as good hogs as anywhere in the United States. I have been showing hogs for sixteen years, and the closest show I ever experienced has been here at our State fair. The premiums offered are not uniform with other fairs. I think the list as presented is a good one, but if they can not adopt it, I want them to make it as good as they can.

C. A. Robinson. What little experience I have had with agricultural boards in general has been similar to that suggested by Mr. Shepherd. Unless we suggest some specified thing we will most likely not get what we want. The Shorthorn men are looking after their interests, as well as the sheep men, in the way of premiums, and if the swine breeders become interested enough and press this matter sufficiently, I have reason to believe the premium list will be revised or extended to satisfy the breeders of the State.

Judge E. B. Martindale, Indianapolis. Why not give the hog men fifty or one hundred dollars, the same as the cattle men, for the best herd exhibited? Is there any objection to it? There is considerable expense incurred in taking a herd to the fair, and unless there is a general premium offered there is but little inducement to exhibitors to come out.
I. N. Cotton, Marion County. It is the proper course to take. It is the same course the wool growers have taken.

C. J. Clark, Hamilton County. I believe this is the right course to pursue, but the object we wish to gain depends largely upon the kind of a committee we get to present this matter to the Board. If we select a committee that will present this request, and urge that we need something and must have it, by such men as Mr. Shepherd and Judge Martindale, I believe we will get it.

The motion of Mr. Shepherd was carried, and S. M. Shepherd, E. B. Martindale, T. M. Reveal, James Mustard and J. H. Beabout were appointed a committee to present the matter of swine premiums to the State Board for their consideration.

DISCUSSION.

Mr. Koontz, Delaware County. The only way to get anything is to ask for it. The Shorthorn Breeders are asking for everything. If you have examined that bill to be presented to Congress, I think on general principles you will condemn it. Before the Legislature there is a bill the State Shorthorn Breeders have presented, asking protection against contagious diseases. A glance at the bill will satisfy you that instead of affording any protection to you it is a disadvantage. It will do everything necessary so far as Shorthorn breeders are concerned, but it affords us no protection. A quarantine would damage the swine breeders. If the swine breeders want the Legislature to pass something for their benefit, it is time to ask for it. So long as there is no effort or action on the part of the swine breeders, the Shorthorn men will get all, and the swine breeders nothing. This bill will be presented for our adoption, but it is not what we want. We want a commission created or something similar to this with authority to investigate all the causes of this so-called hog cholera. In reference to cure or preventive we ask the Legislature to take this matter into consideration, and pass some law giving swine breeders protection. Judge Martindale has told us that the devastation is terrible in many parts of the State. It was so in our county (Delaware). The swine breeders are idle and doing nothing. Why should not the swine breeders of Indiana ask the Legislature to create a commission and appoint three men to investigate this matter and report at certain times, making an appropriation of twenty-five thousand dollars to expend for the investigation of this disease. Where could it be expended to better advantage to the farmers of Indiana than in this way? Private enterprise has failed to discover any cure for this disease. To investigate this at the expense of the State would not be felt by any, but a private individual can not investigate on account of the expense.

S. M. Shepherd. The Central Record Association had sent to them from Messrs. Bonham & Springer a communication requesting the Central Society to take some action regarding National legislation. As to the bill pending before the Legislature I know little about. On general principles, I am not in favor of recommending anything unless I know what I am recommending. This thing of appointing committees and forwarding petitions for the passage of bills we know nothing about is striking blindly. Any legislation that is enacted by Indiana or by Congress providing for the appointment of this commission by the President or
the Governor is idle legislation. If Congress or the Legislature want to do anything for the swine breeders of Indiana or the United States, they should make an appropriation, pass it to the swine breeders and place it under their direction. If the Legislature should make provision for investigating this disease the person should be selected by the swine breeders of Indiana, and not appointed by the Governor, who will appoint some one who knows nothing about it. If we apply for legislation the funds should be under the direction of the swine breeders of Indiana, and the appointment fall on one whom they may select. We will get down to the plain facts printed in the English language, and not in Choctaw or Chinese. We know better what we want than veterinary surgeons do. Everybody can not afford to buy a microscope to hunt all these microbes up. A single drop of water, such as we are daily drinking, contains thousands and millions of living insects. This veterinary will come out with a theory and find a bug, but finds nothing else but bugs. [Laughter.] You want to find out facts, and not theories. If the swine men are not wise enough to make this selection they ought not to have legislative aid. We know what is needed better that a veterinary surgeon who has prepared some patent medicine to sell to you. It won't do to depend on the microscope all the time.

Mr. Koontz. I agree with the gentleman in every respect. One of the reasons I am opposed to the bill, as it gives the Governor power to appoint this commission. These three men should be practical agriculturists; that is just what we want to get at. We want to tell the Legislature what we want, and to indicate or control the appointment of men who will carry this into effect, but we can not do it if we set still. The way the bill is now its operation won't benefit us, but it will the Shorthorn breeders.

J. A. Wildman. The number of hogs that have died in Indiana in the last few years is from two to four million, and it is certainly time the swine breeders were giving the matter some consideration. I am in favor of asking the Legislature for an appropriation. What this Association should do is to select from three to five practical men, with instructions to prepare a bill embodying just what we want. Let it be discussed, and be presented with the indorsement of this Association, then put it in the hands of some member of the Legislature and try to get it through.

E. B. Martindale. This is moving in the right direction, but, as it is growing late, I think we had best adjourn until 7:30 this evening, and make this subject the special order.

Adjourned to 7:30 p. m.

EVENING SESSION.

The committee appointed last year to report on the discrepancy in the Treasurer's account being absent, the President appointed Mr. Mugg and Mr. Mintz to investigate and report to-morrow.

The bill introduced in the Legislature providing for the appointment of a Livestock Sanitary Commission and State Veterinarian was taken up.

J. S. Buckles, Delaware County. I was not aware until an hour ago that this question would be discussed here to-night. In view of the limited information I
have, I hardly know how to commence. I have felt for a long time the importance of having steps taken in Indiana by which our livestock interests could be protected against the introduction of contagious diseases from other States. I have given the subject the best attention for a year or two, and after thinking of it, and having obtained statistics on this subject, examined bills pending in Congress, and State enactments heretofore, and after consultation with stock men from different parts of Indiana and elsewhere, this bill was prepared. It is the best I can do under the circumstances. Now I understand there is objection to the bill by swine breeders. We have in our county an Agricultural Livestock Breeders' Association. Some time before I came to the Legislature we called a meeting of that association for the purpose of considering the questions that would come before the Legislature. This question of a sanitary commission came up, and the question of hog cholera was talked of. My idea at that time was that it was contagious; before that time I entertained different views. This year my theory failed me, and I found out afterward how my hogs contracted the disease. A neighbor brought some hogs home that were affected with the disease and turned them in a pasture adjoining mine, with nothing between the two herds but a common rail fence. I am satisfied my hogs contracted the disease from them. Since learning these facts I thought possibly the disease was contagious. In getting up this bill I have mentioned hog cholera and swine plague, and have done it in good faith. If there is any question about their being contagious, this sanitary commission will learn what the remedy is, if there is any. I think it can be cured, but don't know what that remedy will be. History says we have the same information in small-pox. People thought formerly there was nothing to prevent its extension, but a simple preventive was finally discovered. It may be the time is not far distant when we can say the same for hog cholera. There will not be much encouragement to find out a remedy if we do not make the necessary demand and back up what we say. I understand one objection to this bill is the provision for quarantining hogs under certain circumstances to prevent farmers from selling them after having been exposed to the disease, before showing symptoms of disease. The next question is, what is the best thing for us to do as hog raisers; to scatter the hogs we have exposed to disease over the country? Does this subserve the best interests of the farmers over the country? Is it not better for them, in a pecuniary way, to adopt a better course, like the bill I have introduced? This bill provides that the commission shall be composed of three men who are practical agriculturists, and engaged in and identified with the livestock interests of the State. This bill authorizes them to fix such quarantine as is essential to protect those not exposed. A hog may, under the present law, run where it pleases until it dies, but after the pig dies the owner is compelled to bury or burn it quickly. I ask you, gentlemen, is there anything in this bill that makes it harder upon the swine men than upon the cattle men? Hogs will take the cholera in from eight to fifteen days after being exposed, and a short quarantine settles the whole matter. But it is said in that time owners can ship them to market and thus get them off their hands; but is that the right way to do? Under the provisions of this bill, suppose I have fifty head of cattle and you have fifty head of hogs. My cattle have been exposed to pleuro-pneumonia;
to make it safe to ship these cattle they have to be quarantined for ninety days. During that ninety days I could ship them to Liverpool and have them slaughtered. The beef is as good as any when they started from home; but is that the thing for this country to tolerate? We are suffering to-day from that practice an amount that is almost incalculable. To-day the meat products are suffering on that account, and the question is, shall we continue it? The balance of trade would be badly felt from what it is were it not for the restriction in the old world. Some are quarantining against us in the old world to-day. Suppose we can show a clean record in reference to the hog in Indiana, and prove that we have no contagious disease in Indiana among our hogs, that we had such regulations as absolutely prevented such spread of disease, Indiana would be able to make a fortune in a short time. But just so long as we neglect this we suffer the consequences. How much harder is it for my friend over the way who has 100 head of hogs quarantined from ten to twenty days than for my cattle to be quarantined for ninety days? My cattle make just as good beef as his hogs do pork. What protection have we against ravages of contagious diseases? This bill does not impose any more burden on the swine breeders than on cattle breeders. If your swine have been exposed they may be quarantined against spreading the disease, but you say you can put them on the cars and send them to market. How many hogs will you disease in sending them to market? Should I have the privilege of driving my cattle alongside your fields and spread disease to your cattle? I think not. In short, gentlemen, it occurs to me that as an association you can not afford to go before the world and oppose a sanitary commission as applying to the hog. Selling and shipping hogs that have been exposed to the disease you can not afford to do. I want to see the same rule applied to hogs that applies to cattle, and we must determine now whether the interest involved is of sufficient importance to protect it. Unless there are some means by which we may be protected from hog cholera, when will we get rid of the cholera in Indiana? Never as long as you raise hogs. It requires the same kind of courage to stamp it out as to stamp out pleuro-pneumonia. A few men up at Chicago a few years ago were anxious that the pleuro-pneumonia bill, known as the Miller bill, should be passed by Congress. Some thought then there was no such disease in this country, and if there was there was no danger of Illinois suffering from it. They were mistaken. Three thousand head have been slaughtered, and no man can tell when they are going to get rid of it. It has been there a good while. They were not willing to make the sacrifice, and they are getting paid for it to-day. We must make a sacrifice and stamp it out or we will suffer the consequences as long as we live. In the county of Grant the loss this year was something over $100,000 from swine plague. It is an average county in many respects. Our county lost perhaps as much. Suppose these two counties are average counties in the State the aggregate would be quite an item, especially when you spread over the State. Some counties are not seriously affected by it. It has never exhibited such terrible results before in Eastern Indiana as it has done this year; it has got worse all the time. Unless you are willing to exhibit a little nerve, and take hold with a fixed determination to stamp it out, it will continue to get worse and worse until hog raising will not be at all profitable. What will be the result? Suppose you get out of this quarantine
regulation, cattle will be increasing and hogs failing, and you will all want to be raising Shorthorn cattle. [Laughter.] If you want the hog to stay I advise you to support this bill. The swine breeders of Indiana merely say we will sell hogs that have been exposed to the disease rather than observe means that will eradicate it, and I think you can not afford to do this from a financial point of view. I have handled a few hogs in my life, some years feeding from 100 to 150 head, but never had much experience in handling thoroughbred hogs. This year I had 30 Poland China pigs, and all but three or four died with the cholera. Under the prevailing opinion that hog cholera is a contagious disease we can not engage in the industry without doing something to stop its spreading. It is much better for us that we should sacrifice a few dollars and cents rather than risk losing our entire herds by not quarantining. Let us keep it in bounds. We may not make quite as much this year, but perhaps we may make more next. It is not right to sell a horse for full price that has been exposed to the glanders. It is not right to sell a steer that has been exposed to the pleuro-pneumonia, and the rule that applies to one will apply to the rest. It is said hogs that have been exposed make good pork, but it is no better than the beef from the steer exposed to pleuro-pneumonia. Unless there is no danger of the ravages of this disease, unless it is not contagious, unless there is some other reason offered than what has been it is my opinion as an association you can not afford to go back on the proposition of a livestock sanitary commission. Our cattle men here in Indiana thought they were safe from pleuro-pneumonia. We have had no pleuro-pneumonia in Indiana, yet there has been an uneasiness. Ohio thought she had nothing to fear, and the first thing she knew she had it. Kentucky the same way. The result was they had to slaughter a number of their cattle before they stopped it. The State has since paid for them; they have now a good bill. Missouri has been visited with this plague. Illinois thought she was safe, but now it has struck her. So it will be in Indiana. The amount you lose from selling your hogs at the time of taking the disease at best is comparatively a drop in the bucket. Do you know that the discouragements in certain sections of Indiana have cost you more than all the hogs you have lost, unless you get in better business. You find men all over the country making their arrangements to quit raising hogs, because it is uncertain quantity. There is no trouble with the cattle men; they have had sufficient alarm to cause them to seek legislation. The hog men will have it, no doubt. The statistics of the country mark the facts of the rise and fall of pork and cost of producing it, and there is great reason for having some protection against contagious diseases of hogs. We must be able to show the world a healthy pork product, and be above suspicion, and you can not do that if the pen is half full of diseased hogs. It is the same way with cattle. You can not convince the world that that is the best meat to buy. My opinion is if we join hands and press this bill through we will have means to protect our live stock—this sanitary commission, which will do more for us than has already been done on this subject. We want to discover the secret of these things and ascertain a remedy, and I have no doubt but it will be done. But you never will do this as long as you sell hogs that have been exposed to the disease. I am personally interested in this subject. I had 165 head when the cholera struck my herd, and I am in a poor fix in the hog line to-day.
Do you know that the live stock interest in the State amounts to more than one hundred millions of dollars? The live stock interest in the United States amounts to three billions of dollars! If the parties representing this amount of capital will pull together we can accomplish something, but if we antagonize each other the result will be disastrous. If this bill passes and becomes a law, I have no idea you will have reason to complain of the action of the commission. Governor Gray and I differ in politics, but I have no doubt but he will appoint three men on that commission as good as can be found in the State. To pass this bill will require a united effort. I do not know whether we can pass it through the Legislature with the hostility of the swine breeders or not. If we can’t, you can’t. All these live stock industrial associations should work unitedly in this matter. We have started out to class all kinds of live stock, hoping to place the live stock interest in a better condition than any other State in the Union, and unless we start with a determination we will not succeed.

S. M. Shepherd, Indianapolis. Judge Buckles has made a good speech in reference to the bill. It has been the custom in this country for many years for feeders to get their hogs off where they have been exposed to cholera. It may be that custom is wrong, but suppose you or I have a herd of one hundred fat hogs, and you know they have been exposed to contagion, are you to be deprived of the right to sell those hogs because they have been exposed? There is not a particle of danger imparted until fever arises, which constitutes the disease itself. The disease may be implanted in the veins and lungs of the hog, but the meat is not impregnated until the fever begins. Shall a man or any of his neighbors hold their hogs until they die or until a commission says they shall kill them and let the man get pay for his hogs out of the public treasury. In this bill, the killing of the hogs around them, they get not a dollar of money for hogs and labor. Is there any justice in that? Is there any moral turpitude in that?

Shipping our hogs not injured, yet having been exposed to the disease does not hurt them one iota. If it is damaging, then the people of Indiana are guilty in every locality. If you want to stamp out the cholera, you can do it quicker by selling the hogs than by the commission. They won’t communicate the disease until the fever begins, which is inside of ten days after being exposed. They are not injured until the disease fastens on the system. A man should have a right, and I believe it is their duty, to send out their hogs and realize all they can on them, than to keep them and furnish a bed of cholera for Smith, Jones and Brown. You require every man having such hogs to hold them and see if they are going to die. Our holding them simply amounts to nothing.

Judge Buckles. Whenever cattle or hogs can be converted into meat in a healthy condition, without danger of spreading the disease, it is the province of this commission to do it.

S. M. Shepherd. This commission is composed of three or four men residing in different parts of the State. There may be more than a dozen places in remote localities. How are you going to get around. I don’t know how hog cholera starts. It has been periodical since the first outbreak in the United States, which was in 1855. It run on for a little while. During the war there was but little. In
1878 we had another siege, and again in 1886 another. There was no quarantine in the interim. I do not believe legislation will stop it, unless you quarantine the dogs and buzzards. You can carry it on your boots. Dogs will carry it by rolling in the grass. We have been trying to stamp out this cattle disease and foot rot in sheep for fifty years, and it has come into America from England in spite of quarantine regulations. I insist, morally and legally, you have no right to say that a certain number of men can quarantine a number of hogs merely because they have been exposed, when they can be slaughtered before disease will be developed in them. For that reason the Swine Breeders ought not to favor this bill. The Veterinary Surgeon is made bigger than the Governor or President. You can not ship a steer or hog without his certificate. If the cattle men want to put their heads in this yoke it is no reason we should. There are other objections to this bill. You bind your statement up by saying "the cause of disease had never been discovered, or the means of cure;" but you believe "that Yankee ingenuity is equal to the emergency." This bill does not make any provision for the prevention of the disease. You might kill every hog exposed to the disease and not find out any more about the disease. The Hog Breeders need some information as to the cause of the disease, how to cure and how to prevent the disease. If provision can be made to prevent the disease, he don't need State legislation or quarantine. There is not a dollar appropriated for investigating the cause, treatment or cure of the disease. What the Breeders of Indiana want, in my judgment, is a commission composed of men interested in swine breeding. But so far as placing this hog cholera question under a veterinary surgeon, it is of no value as to the cause or cure. I have read the report (furnished by Congress) of the investigation of Dr. Detmore. His investigations are wholly as to how many microbes, and their different shapes, and how much sulphuric and carbolic acid or heat these microbes will stand and live, or how long they would live after being dried up. What do the Swine Breeders care about that? It has a tendency to make the breeders of Indiana and the United States have little faith in veterinary surgeons. They spend all their time in theorizing on matters of no practical value. It seems to me the Swine Breeders need to investigate the cause and means of prevention and cure. It is worth more to the Swine Breeders of Indiana than all the quarantine to the end of time. Hog cholera follows water courses as unerringly as water itself. It is impractical to impose a burden on the Swine Breeders of Indiana that they can not afford to assume.

Robert Mitchell, Gibson County. This hog cholera scourge is driving us out of the business. If swine breeders do not want protection I, for one, would like to see them stricken from the bill, but I can not see why they do not want to protect their hogs as well as we do our cattle.

E. B. Martindale. The hog cholera has become a disease. The glanders, in horses, and pleuro-pneumonia, in cattle, and foot-rot, in sheep, you can trace right in a path where they are going, they go from one farm to another, but this is not true of hog cholera. It is communicated to a herd and we don't know how. You therefore can not put it on the same plane, especially as to catching the disease. There is no one wants this unlimited disease in his herds, and the hog men feel it
as anxiously as the cattle men feel it. A man who has a healthy herd of hogs that have been exposed; don't know that they will take it; the meat of such hogs I consider good. There is a penalty for selling diseased meat now.

W. A. Macy, Henry County. Five years ago I had one hundred head of hogs and no others within a mile of them with the disease, still I lost ninety out of the herd. This year a neighbor near me lost all of his and I lost none. Cholera affects every county in the State and is working great devastation among the herds.

D. L. Thomas. Judge Buckles does not comprehend the situation; he seems to have some fears that we are antagonizing his bill. The swine interest is somewhat different from the cattle interest. In my judgment this bill covers too much ground. I am in favor of the bill for pleuro-pneumonia and glanders. They can make laws governing pleuro-pneumonia and glanders, but when we come to hog cholera we have to acknowledge we do not understand it. Let us discuss this bill to-night and to-morrow. There is no antagonism on the part of those who have this bill in hand. I am willing to stand up and help as against pleuro-pneumonia and foot-rot, but when we come to hog cholera we can not show this.

Mr. Mitchell. I think by this commission the disease might be eradicated.

Mr. Thomas. We want a little less theory and more practice. Scientific men are not agreed to-day upon this subject. The question is, how far are we to quarantine. Dr. Detmore is good authority on this subject. In discussing this a few months ago, he stated that the disease may be communicated in the air, when the wind was favorable, at least one mile, and may be communicated to any break in the lining of the nostrils, or even where a louse has punctured the skin. This bill is too large to bring in a disease not parallel with the others. Let us ask the Legislature to withdraw that portion and work for the remainder.

Judge Buckles. If we strike out hog cholera or swine plague, it would still apply to hog cholera if it is a contagious disease. If we do this we will have to make a proviso that it do not extend to swine.

S. M. Shepherd. Veterinary surgeons in this country have paid but little attention to hogs. They have not a book that gives complete illustrations of the inside portion of the hog. Dr. Selman had a handsome engraving of the lungs, heart and bowels, but not the hog entire, and I have not been able to find a veterinarian in this city that could give me any definite information on that subject. Another thing amused me in reference to veterinary knowledge on hog cholera. A gentleman in Nebraska advertised, I remember through the Prairie Farmer, for specimens of blood to be sent him from diseased hogs over the country, that he might "analyze them by subjecting them to the microscope and determine what hog cholera is," and wound up by saying, "don't send blood from a healthy hog." I think if he could not tell the difference between the good and bad blood, it was not very edifying. This is about the knowledge veterinarians have of hog cholera. Send such a man out among us, what would he do? With due deference to your judgment, the swine interest should not be included in this bill. We want to do all we can, but don't put us in the same boat. Gentlemen, it is your fault that you don't get any better legislation. We must work for it. Other industries combine and have there leagues and unions, as the Knights of Labor, railroads, etc.
while the farmer allows himself to be pulled around by politics. Let a man go to
the Legislature that does not have your interest at heart and you will suffer for
proper legislation.

Mr. Foust. What has been the loss in the State of Indiana this year? The
value of hogs last summer that died from cholera exceeded the value of cattle that
died with pleuro-pneumonia in the United States for all time. We have lost over
four million dollars in the State this year. We have told Mr. Buckles to do some-
thing for us in the way of legislation; here he is with a bill and now we are
antagonizing it. I am in favor of this bill.

Mr. Shepherd. I am not advising these gentlemen against their interest, I do not
think. I have stood shoulder to shoulder with them, as I have done at all times
and under all circumstances what I considered the best interests of swine breeders,
and the fact that I am a lawyer should not be held too much against me. I still
want to do what is for the best interest of swine breeders. The bill is not practical
when applied to swine breeding, and it is right for us to express our opinion of it.
We think we can draft a bill that will meet our interests.

Judge E. B. Martinville offered the following resolution, which was adopted:

Resolved, That it is the sense of the Indiana Swine Breeders' Association, as-
sembled in convention, that section 4, of what is known as the Buckles Bill No. 109,
be amended by striking out in the third line of said section the words including
"hog cholera, swine plague," and that said section be so amended as to read: Pro-
vided, however, That the provisions of this bill shall not apply to swine; and further,

WHEREAS, It has been demonstrated that the loss by hog cholera during 1886
amounted in the State of Indiana to the enormous sum of $4,000,000 to the agri-
cultural interest of the State; and,

WHEREAS, No legislation has been enacted looking to the investigation of the
cause of the disease or alleviation of its ravages, we, therefore, ask that the Presi-
dent of this meeting appoint a committee of three, with S. M. Shepherd as chair-
man, to prepare and present to the Legislature a bill embodying the views of the
members of the Swine Breeders' convention as expressed in the discussion to-day.

James Mustard and D. L. Thomas were named as the other two members of the
above committee.

J. H. Furnas, Lloyd Mugg and James Mustard were appointed a Committee
on Program.

Adjourned to 9:30 A. M.

FRIDAY, JANUARY 28—MORNING SESSION.

The Association immediately proceeded to the election of officers, with the fol-
lowing result:

President—C. J. Clark, Westfield.
Vice President—H. C. G. Bals, Indianapolis.
Secretary—C. A. Robinson, Indianapolis.
Treasurer—James Mustard, Broad Ripple.

Executive Committee—T. M. Reveal, Clermont; Lloyd Mugga, Center; I. N.
Barker, Therntown.
SWINE BREEDERS.

Mr. Clark, on assuming the duties of president, said:

_Gentlemen:_

Permit me to return to you my sincere thanks for the honor and trust you have conferred upon me in this unanimous election to the presidency of the Indiana Swine Breeders' Association. It shall be my ambition to discharge the duties devolving upon me in a way that will be creditable to myself and satisfactory to my fellow breeders. In assuming the duties of this office, I have never more forcibly realized my own weakness than at the present time. Permit me again to thank you for the honor you have conferred upon me.

On motion, a committee of five, consisting of T. G. Terry, Warsaw; D. L. Thomas, Rushville; J. H. Beabout, Rushville; S. S. Earhart, Mulberry; I. N. Barker, Thorntown, were appointed as delegates to attend the National Swine Breeders' Convention at Chicago next November.

_Mr. Beeler._ I move that every gentleman of this Association who visits that convention be considered a delegate. The motion prevailed.

_D. L. Thomas._ I want to say that every man who has been here is paid for coming. There is not a farmer who raises a dozen pigs but can afford to come and attend this meeting, whether he takes part or not. We should push our enterprise, and in various ways help legislation and assist in the suppression of disease. We must take this matter up and double the size of this meeting next year.

On motion, the State Board of Agriculture was requested to prohibit all boars from entering the show ring without their tusks being removed.

On motion of Mr. Robinson, a vote of thanks was tendered Mr. Kingsan for the kindness and courtesy extended to the members of the Association while visiting his packing house, and also to Secretary Heron for assistance and courtesies shown.

FAT STOCK SHOW.

_J. Cunningham._ I think we should try and have a fat stock show at Indianapolis. We can have as good and as interesting a show as at Chicago, if we will only put forth our best efforts. Let me say as a breeder of Poland-Chinas that I will furnish five hogs for such an exhibition; and if every breeder here of all kinds of stock will say they will furnish an equal number there is no doubt but that we will have a show. If we never put anything in practice nothing will be done. Let us get down to the bottom of this matter and have a show as good as anywhere else. Chicago has made a success, and I see no reason why Indianapolis should not. I have been in Nebraska and Dakota; the interest taken there in this matter is surprising. I want to hear some young breeders talk on this subject. It is something they should be earnestly interested in. I have been breeding Poland-Chinas for sixteen years, and I find there is more money in the hog business than anything I can invest in.

_Dr. C. A. Robinson._ I can only speak from observation, as I have had no experience in fat stock shows. I attended the fat stock show at Chicago, which was held in connection with the poultry show. It seems to me that when Chicago takes a notion to do anything, she does it because she can see a benefit to Chicago. I am talking to farmers and addressing the business men of Indianapolis on this

29—Bd. of Agr.
question, and I must say that Chicago business men take more interest than Indianapolis. Such an enterprise brings the agricultural men to the city. I am proud of the State of Indiana. As to her record in this regard, I can only say, as did Robert Fulton when his boat stopped, "There is something wrong in the machinery." Indianapolis should have a fat stock show as well as Chicago, and I believe she can. If the fat stock show benefits the people of Chicago, it will benefit this city and vicinity. This is more of an agricultural city than Chicago and our interests should be at our State capital. We are lagging behind, while Chicago shows a disposition to stir up and get the agricultural class of people interested. It seems to me both the city and country are demanding the exercise of your best talents to produce the best results the ground is capable of producing. In ten years you can have every farmer boy over eighteen years old interested if you go to work. The trouble is you don't push your boys out; you don't put confidence in them and tell them to go to John Jones and buy a calf and feed it for the Indianapolis fat stock show. If you get beat try again, I am at your back. The majority of the farmers put them in the background and say you are not capable of attending to this business. All the encouragement they get is when they get old enough to help themselves. If you want to get a fat stock show here, you want to get your boys interested, and give them to understand that a part of the cash goes in their pockets; then there will be little trouble in getting such a show.

D. L. Thomas. The sentiments expressed by Dr. Robinson meet my hearty approval. No man approves more highly of a fat stock show here than I do. I believe the exhibitions at Kansas City and Chicago will help one here. If we all work together in this matter, we will succeed. The farmers should demand and push this enterprise just like they are doing in Chicago.

J. H. Furnas, from the Committee on Program, reported as follows:
1. President's address.
2. What advantage would it be to have a fat stock show at Indianapolis?
3. What relation has a member to the association? J. Cunningham.
4. Proper care of brood sows during the winter. I. N. Barker, Thorn- town, Ind.
6. Who is the breeder? S. S. Earhart, Mulberry, Ind.
8. Ear marks and ringing of pigs; is it advisable? W. A. Macy, Lewis- ville, Ind.

Convention adjourned sine die.
The fifth annual meeting of this Association assembled in the rooms of the State Board of Agriculture, at 11 A. M., December 30.

After a few preliminary remarks by President Furnas, work began.

The President spoke of the manner of arranging factories that have a capacity of 150 to 200 gallons per day, working for syrup, not sugar, and desired a discussion of this subject.

Mr. Raub. It's an important question; large factories are failures; the molasses being too thin sells low. The selling price of syrup should be held firm by manufacturers; sell the same grade for one price, not thirty cents to one and forty cents to another. Mr. Field traveled around and sold in this way, doing my trade much injury; if necessary, sell less at better prices. I sell entirely to the local market, and make about four thousand gallons each season.

President. A man located within reach of a good local market, making 150 to 200 gallons per day, can not be driven out of the business. People will pay fancy prices for syrup from a factory of good reputation.

President Furnas delivered his address as follows:

PRESIDENT'S ADDRESS.

GENTLEMEN—At our meeting one year ago I reminded you that I had parted with my pecuniary interest in the manufacture of sorghum syrup, hence do not meet you as a manufacturer; and while I do not pretend to keep abreast with the improvements in the manufacture of sorghum products, perhaps I may be indulged in a few remarks from my disinterested standpoint.

Perhaps I ought to say that my remarks will be intended to apply to the average manufactory of the country, not, however, to the one-horse, out-door operator, with the old-fashioned furnace with a few kettles set in a bank to simmer or scorch as may happen to result from bad wood or poor firing, or, on the other extreme, the costly and extensive investments occasionally found here and there in the country, requiring large capital which must necessarily lie idle at least ten months in the year.

While there are many points for the syrup manufacturer to consider, there are two questions that are paramount to all others. These are, first the extraction of the juice, and second its reduction into syrup. Careful investigation shows, under
the common process of rolling with ordinary mills, a loss of from forty to fifty per-
cent. of the juice of the cane, and a consequent loss, I think (though this is de-
nied by some), of that amount of sucrose, or the sweetening qualities of the cane.

This is a question of serious importance to the syrup-maker. The sharp com-
petition exhibited in almost every other department of business must eventually
point to a remedy for this. We are now already assured that for large establish-
ments diffusion is the remedy, but we are also assured that for such establishmen-
as we now have under consideration, the cost of construction places such machin-
ery out of the question. I have, however, an abiding faith in Yankee ingenuity,
and believe before half a decade passes that a practical remedy will be reached in
some way by which this great waste may be saved, and thus a corresponding mar-
gin for profit will be realized by the manufacturer. How this is to come I do not
presume to conjecture, whether by shredding, rolling and re-rolling, or simplicity
in the process of diffusion, or some other mode yet unthought of.

The question of evaporation has almost as many different phases as there are
inventors of evaporating pans, each claiming superiority over all others.

If direct fire heat is to be used I have no doubt but that it should be better
economized than has heretofore obtained in most works. Take a fire pan of 18
feet in length where the factory is only run by day time, and from ten o'clock until
quitting at night a pan nearly as long might have the extra heat passed under it
which would be entirely sufficient for complete defecation, and without the inter-
vention of a settling tank would deliver the clarified juice hot into the evaporator,
and thus, in the estimation of the writer, make at least twenty-five per cent. more
syrup in a day than where the juice is delivered to the evaporator cold, as is most
commonly the case, and this too, while the cost of manufacture would not be en-
hanced in the least so far as fuel is concerned.

There seems to be a sort of impassable barrier over which the ordinary country
manufacturers may not pass in the making of syrup without financial loss. This
is governed by two considerations, first, the demand for syrup in the neighborhood
with the willingness to grow the cane, and secondly, by the steam power, that will
do the work effectively, and yet be available for other purposes when not in use for
this, thus largely lessening the cost of steam machinery, which would otherwise be
great.

In my neighborhood we have, perhaps, an overstock of portable steam engines,
generally engaged in wheat threshing until that work is done, after which I have
always been able to hire a good engine and competent engineer for two dollars per
day. This engine will grind enough for 150 gallons of syrup per day and furnish
steam enough to finish the semi-syrup made on the fire pan, and when we wish it,
after the grinding is done in the evening, with a good circular saw, wood is cut into
any desirable length, for the engine or any other use. A factory of this capacity
will generally work all the cane in the neighborhood which will be delivered by
the farmers, and no attention need be given by the manufacturer to the cultivation
of it. If cane has to be hauled a great distance, additional cost has to be incurred
by somebody, and if more gallons are made in a day, the increased cost of ma-
achinery at once begins to reduce the profit, without such power can be used for
other purposes.
With this view of the situation, I think the outlook for the small manufacturer is favorable. He has a home market, his customers take his goods at first cost, and without freight, which would not be the case where going into second hands by transportation.

Heretofore the syrup made in those very large factories has shown no special superiority over that made in such as have been indicated. It should be remarked, however, that I have never seen an article made by the diffusion process. It may be superior to the old methods.

Without some means not yet discovered, the large factories will not be able to enter the market in competition with the class of manufacturers referred to, if this class keep fully up with the times.

There is one quality or condition in every man's business that wholly depends upon himself, that is patent to himself. It is utterly useless to try to turn a sloven into a neat, tidy man. It is also among the impossibilities (with us) to turn a constitutionally narrow-minded fellow into an obliging, affable, whole-souled gentleman. A man whose patronage depends on his neighbors, must have the magnetism that will attract them, and if he does not have this influence he ought not to depend on public patronage for support. How often have you had ladies visit your establishment, and though they may assure you that they just called out of curiosity, you know also that they have an eye to neatness and cleanliness, and if all these, with polite attention are in full stock, you secure their patronage.

Thus, gentlemen, I have but briefly touched upon some of the features of the cane grower's business, and what I have said is from an unbiased standpoint, having no interest in the matter other than the good of the cause, and its ultimate success, in which I can assure you I have an unshaken confidence.

E. W. Deming followed with a paper regarding the

WORK AT FT. SCOTT, KANSAS.

To discuss fully the subject assigned me—experiments at Fort Scott the past season—would occupy perhaps more time than you would choose to devote to this one topic.

I will, therefore, omit all description of buildings and machinery, and all mention of experiments in the manufacture of sugar, and speak more particularly of matter affecting more directly the interests of syrup manufacturers.

It has been customary to attempt in some manner the treatment of sorghum juice by some established method of purifying the juice of sugar cane as followed in Louisiana, and the record of all experiments by the larger enterprises, although supplied generally with ample means, efficient sugar makers and chemists, has been of a negative nature, resulting in the ruin and destruction of every such institution.

During the season of 1885, at Ottawa, Kansas, the U. S. Department of Agriculture, in connection with the Franklin Sugar Company of that place, undertook some experiments to determine the feasibility of extracting the juice from sorghum by the process known as diffusion. Owing to an unavoidable delay in placing in
position some of the machinery, only a small number of diffusions were made; but sufficient, however, was learned to prove the perfect adaptability of this method of extracting the juice from sorghum canes, and show its advantage over the use of crushers for this purpose.

As an after thought, as the season's work progressed, a small lime-kiln was erected for producing carbonic acid gas, to test in a small way, purifying the juice by what is known as the carbonization process.

Owing to a defect in the gas pump the use of this gas for this purpose was quite limited; still the results were very gratifying.

It was upon representation of these experiments that the Parkinson Sugar Co., of Ft. Scott, Kansas, was organized; a very strong company, financially, with Judge W. L. Parkinson as manager. The works of this company adjoin the city of Ft. Scott, upon a tract of 350 acres of land, 200 acres of which were donated by the city.

Owing to the liberal views of the men composing this company, and the very able direction and management of Judge Parkinson, there has been erected and thoroughly fitted, a sugar house pronounced by all as second to none in the country.

The crop of cane the past season, taken as a whole, was the finest ever grown in this country, not more than one load in forty that could be rejected as not first class. The amber cane, comprising about one-fourth of the whole crop, was long and of fair size; the Links Hybrid, forming, also, nearly one-fourth of the crop, was indeed a fine cane, much of it nearly sixteen feet long. Standing in the field it had the appearance of a dense growth of saplings.

Too much can not be said in praise of the Orange cane, the ideal cane, that comprised fully one-half of the total crop. The canes were long and very stocky, tapering less from butts to top than any Orange I have seen, much of it comparing very favorably in appearance with the medium sized sugar cane of Louisiana.

The tonnage as reported by the farmers varied from ten to twenty tons per acre, including leaves and seed, with an average of perhaps fifteen tons per acre. This shows the wonderful adaptability of Kansas soil and climate for the production of sorghum.

One hundred acres of cane on the company's land were so badly damaged by frost that it was never cut. Daily chemical analysis of the cane as it was delivered at the factory showed it was quite as remarkable for its large content of sugar as for its general appearance, and it is to be regretted that the delivery of the cane at the factory could not have been so regulated that less time would elapse between the cutting and the working of the cane. Although the larger portion of the crop was worked the same day it was cut, it was demonstrated that the delay in working it after cutting one or two days caused an appreciable inversion of the sugar; not, however, impairing its value for the production of syrup as regards quantity, yet must necessarily have its effect on the color, as we know the nearer a cane syrup approaches the condition of a pure sugar solution the brighter and clearer it is and the less liable it is to darken during its concentration.

The crop worked consisted of thirty-five hundred tons, seeds and leaves included. Allowing one-sixth as weight of seeds and one-tenth as weight of the
leaves, there remains of clean cane that passed through the diffusors about twenty-
six hundred tons, producing about fifty thousand pounds of sugar and thirty thou-
sand gallons of molasses.

The sugar sells quite readily at six cents per pound, a trifle above its value
as compared with other sugars, as it is considered quite a novelty with the Kans-
sans; molasses quite heavy, dark but bright, and possessed of a very strong bitter-
taste; such as is developed where the juice is treated to an excess of lime, has not
yet been offered upon the market; its value is, therefore, unknown.

Prof. Wiley, Chemist of the U.S. Department of Agriculture, took charge of the
works at the beginning of the season and operated them continuously, with the
exception of the last day, until the season's work closed, purchasing the cane and
paying all expenses incident to this work.

The juice was obtained by diffusing the cane, after being first cut into quite-
thin slices and most of the leaves removed by a blast of air. A detailed descrip-
tion of this process has been given at several cane meetings, and much has been
written upon the subject since, so that further description at this time will be omit-
ted, except to say this process fully met the expectations of the most sanguine,
leaving scarcely a trace of sweet in the exhausted chips, securing practically all
the sugar.

While carbonization has added nothing directly of value to our knowledge of
the treatment of sorghum juice, it has indirectly disclosed a method by which we
can, by almost purely mechanical means, remove from the juice nearly, if not
quite, all the impurities before concentration has taken place, and at a tempera-
ture not above the boiling point, with a saving of probably 10 per cent. of the juice
that is now generally lost with the scums.

This method consists of adding to the juice after being properly limed and
brought to the boiling point a quantity of filtering material, varying possibly from
one to two per cent. of the weight of the juice, depending upon the condition of the
juice and the value of the filtering material for this purpose, and thoroughly mix-
ing through the juice, and if necessary agitating it so that the material will not
settle, but be held in suspension while the juice is being pumped into a filter press.
This should leave a juice in which not a particle of scum would appear during
its evaporation into a sugar or syrup.

Word comes from Louisiana, where experiments are being made with the juice of
sugar cane by the use of a filtering material and filter presses, ground lignite and
coal, both hard and soft, and powdered charcoal have been used with great success.
While sorghum juice differs somewhat from the juice of sugar cane, it is but fair

to assume that these materials would produce nearly if not quite the same results
with sorghum juice. Still they must be thoroughly tested before we may know
positively their value for this purpose.

If ground lignite or coal were used as a filtering material in quantity, say one
and one-half per cent., it would require thirty pounds for every ton of juice, about
two hundred and fifty gallons. After having done duty in this manner, it could
be taken directly to the furnace and burned.

I consider this one of the most hopeful indications of the ultimate success of
this industry as regards the production of both sugar and syrup, its chief merits.
being that the juice is purified mainly by mechanical means, instead of chemically, as we have heretofore practiced with such conflicting and unsatisfactory results, and is deserving of our earnest consideration.

The expense of this process consists entirely in the cost of the filter press and a plunger pump where the capacity of the works exceeds 200 gallons of syrup per day. With a less capacity a hand pump on the press would serve to force the juice through the press.

I believe a press of 20 chambers, with a capacity of 15 gallons of syrup per hour, could be made for $100, and the saving in juice that is generally lost with the scums would nearly pay for the press in one season, lessen the attention required during the evaporation of the juice, in addition to greatly improving the product. So great is the faith of the Parkinson Sugar Company in this process that arrangements are being made to clean both their diffusion and mill juices by this process next season.

The question of stripped or unstripped cane in the manufacture of syrup has been frequently discussed at our meetings, the larger manufacturers contending they could not afford to remove the leaves, while the small workers claimed they could not afford to leave them on. The large workers, while producing large quantities of syrup at perhaps a trifle less expense per gallon, have never yet produced a grade of goods equal in any respect to those produced by the small workers. Some experiments in Ft. Scott this season will, I trust and hope, remove all cause for future discussion of this question, by removing not only the leaves, but the sheath that incloses the stalk, to which the leaf also is attached.

This consists of cutting the cane, with the leaves on but tops removed, into pieces one inch long by the use of any feed or ensilage cutter of suitable capacity; the sheaths will drop from the pieces and, together with the leaves, can be blown out by the use of a common fanning mill with all the sieves removed, or allowed to fall through a space of about four feet, the trash being removed by a blast of air. This will remove 95 to 97 per cent. of the foliage adhering to the stalk and leaves the cane practically free from all trash. Some contend there are more impurities in the sheaf than in the leaf. We know of the good results following the stripping of the canes, and we may reasonably expect still better results to follow the removal of both the leaf and sheath when handled in this manner.

Instead of a long stalk that will easily enter the feed roller of the crusher we now have one inch pieces varying from three-eighths to one and a quarter inches in diameter, most of them presenting their round, smooth sides to the rollers; but trouble may be found in starting them in the crusher as they come sliding down the feed-table. To avoid this trouble it may be necessary to pass these pieces of cane through a set of small rollers—wooden ones will answer—placed at the upper end of the feed-table, and arranged to break open or split the larger pieces so that they may readily enter the feed rollers of the crusher. These pieces could not be crushed in a mill with vertical rollers. The feed table of horizontal mills should be quite steep.

The removal of the leaves and sheaths would lessen by nearly 15 per cent. the amount of cane to pass through the crusher. A more even, uniform feed could be obtained, the liability of breaking the mill greatly lessened, and a much larger ex-
traction could reasonably be expected, as the cutting of the canes into one-inch pieces is equal to at least one crushing.

This system of cleaning the cane before extracting the juice, either by diffusion or by the use of crushers, by which we are guaranteed a maximum extraction with a minimum amount of impurities, while heretofore these conditions have generally been reversed, is really entitled to our earnest consideration.

There is one other subject that should engage our attention which is but seldom mentioned at our meetings—that is, the handling and storing of cane at the factory.

Handling the cane wholly by hand must necessarily be done by all small, horse outfits, but in the medium and large works where steam is used exclusively some arrangement should be devised to unload the cane directly at the mill, or for its storage and subsequent delivery at the mill, entirely by the use of steam, it being many times cheaper than the use of men and teams.

Mr. Parkinson, of the Parkinson Sugar Company, of Fort Scott, is perhaps the first person who arranged to handle cane as it was delivered at the factory upon ordinary farm wagons, entirely by mechanical means, the canes never touching the ground nor at any time picked up or carried by men.

The canes are placed crosswise on a rack, similar to a hay-rack without covers, over the back wheels, with two ropes placed around the load. A small car on an iron track is run on the scales. After a load has passed over them by the aid of a friction clutch the load is slid over the rear end of the rack to the car, where it is weighed, run off the scales and drawn from the car to a carrier leading to the carriers feeding the cutters, or unloaded from the opposite side of the car on some long storage racks, from which it could be drawn back on the car and then to the carrier leading toward the cutter-carriers.

The seed tops were removed by the use of circular saws as the cane passed toward the cutter carriers; but this proved too expensive, and some means will be adopted for removing the seed before the cane reaches the factory.

The arrangement for unloading and storing the cane will be greatly simplified. Next season will probably arrange three storage racks, each 150 feet long, and placed one directly over the other so one roof will protect all.

The cane will enter these racks at one end and drop into a carrier leading to an ensilage cutter at the other; a rope and friction clutch will furnish the means of moving the cane through these racks; they will store 80 to 90 tons of cane for the night run.

Upon a careful consideration of these most promising developments of the past working season I am inclined to the belief that we are upon the eve of a complete revolution in the manner of cleaning the cane and the juice—upon the threshold of success, as it were—and if the results obtained at actual work do not fully meet my claims for these processes it can not be denied that they are very encouraging and in every way worthy of a good practical test to determine their value.

Following this a paper by W. D. Clark was read.
PRIZE PAPER.

Ever since the ground was cursed for the sins of our first parents, the trees have not failed to grow among the wheat, or noxious weeds to usurp the place of useful plants for man's sustenance. Some of our most luscious fruits and beautiful flowers defended against us by the thorny bramble, and others compelling a constant warfare with insect enemies in order to their enjoyment. Indeed, it seems, that in pursuance of the fulfillment of the decree, that man should eat his bread by the sweat of his brow, that the things we esteem the greatest value nature has hedged about with the greatest difficulty to obtain. Thus, we find our most precious metals blocked up in the flinty rocks, requiring the aid of science and the most powerful machinery to secure it; our coal, our oil and gas deposited deep down in the bowels of the earth. In harmony with this law, in the vegetable kingdom, the plant from which our Association takes its name is a striking example. When young the tiniest of plants, requiring the most careful nursing, and when mature the essence of the plant, sugar, so securely locked up that our most powerful mills fail to get scarcely more than half, and that so impregnated with impurities that to eliminate them has been the study of the chemist and practical operators ever since the plant came to our shores. True, we have made great progress in that direction since we used the wooden rollers, and a kettle over an open fire, or a wooden box filled with juice a foot deep, and boiled five or six hours, till we obtained an article something like a cross between Louisiana black strap and pumpkin molasses. Right here is where the great prejudice arose against dark molasses, and anything that had the name of sorghum. Then the syrup manufacturers took almost entire possession of the market with their beautiful, clear, and, so long as manufactured from cane molasses, really a good article. But soon the glucose fellows came to the front with their stuff that had but one redeeming feature, that of color; and now, since the advent of the amber cane, the invention of our improved evaporators, and the indomitable perseverance and assistance of such men as Hedges, Kinney, Swartz, and many others, not the least of whom, by any means, is Editor Coleman, of the Rural World, now Commissioner of Agriculture, has given the sorghum interest such a start that we may fairly conclude that, as far as small neighborhood works are concerned, we have come to stay.

The fight with glucose is still on, but, as far as my observation extends, wherever there is a first-class article of sorghum, glucose has to take a back seat.

Commissioner Coleman's predecessor told us a few years ago that "we could not make either sugar or syrup to advantage on farms with crude appliances."

I need only point you to the table in the next room to illustrate how badly he was mistaken, as we are driving along just as if the Washington oracle hadn't told us "you can't," and as prosperous as any other agricultural or manufacturing interest of the country, while the "fully equipped factory, with unlimited capital, and the aid of the highest practical skill, scientific discovery and American genius," which were the only ones that could succeed, cheap sugar has driven to the wall. Professor Wiley's diffusion process may help the sugar interest out again. I trust it will; but the fact remains that we are masters of the situation as far as syrup is concerned. But it is possible, and perhaps probable, that we will
have greater obstacles to contend with than we have ever had. I refer to still cheaper sugar. In case the duty should be taken off, I suppose our grocers could obtain a good article for three to four cents per pound, eleven pounds of which would make a gallon of molasses, costing thirty-three cents and a little trouble. How can we still run our works at a fair profit? I answer, first, by improving upon our methods of manufacture; by making not only a good article, but a uniform article; and to make a uniform article we must secure in some way a uniform quality of cane; and, second, as agriculturists and manufacturers, utilize to the utmost the by-products. It is claimed by some that the seed and fodder will pay for raising the cane. While I am not prepared to affirm this, that it will largely lessen the cost of the syrup there is no doubt, but this offal of the shed, the skimmings and washings of the pans, which most of us have probably been throwing away, I believe will pay all expenses of running our works, in the manufacture of vinegar. That they will make a first-class article I know, with no expense, only to prepare the necessary vessels to receive them. A sample can be seen in the next room, made from the green skimmings off from the defecator, put directly into a barrel as soon as cool enough, and filled up with the same as it fermented and boiled out of the bung, left in open air till spring, then racked off down to the dregs, barrel washed out, contents replaced and filled up with rain water. Of course, to make large quantities would require the use of tanks of a size and number to correspond with the capacity of the works. Mr. O. S. Powell, of Wisconsin, who has had large experience in this direction, says that for every 125 gallons of syrup he makes from this source one hundred of vinegar, which costs nothing, and will get for it one-third as much per gallon as the syrup. You will observe here is a saving of $12 for every hundred gallons of syrup you make, less the expense of the vessels to contain it. But the primary object of this cane business being to make the best article of sugar or molasses, the same old question comes up: How shall we proceed? Shall we defecate? What defecate with, etc.? I assume that the process that secures the best results, with the least trouble and expense, is the one to follow. What I mean by best results is with regard to flavor, color, clearness and density, and without assuming to be competent to instruct others in the way they should go, we have secured the best results by the following method, which I will briefly sketch: We line in the cold juice in the tank, we have two, while one emptying the other filling, which is sufficiently elevated to run clear through the works into the evaporator; our defecator is divided into three compartments, commencing at the chimney, respectively 4½, 3½ and 10 feet, the juice running from each department into the next by underflow gates; we run the juice by swing pipe in continuous flow into the first department next to chimney; here it heats gradually, but in consequence of the cold juice continuously running in, never boils. We skim this part once in five or six hours; it passes from this to second division by underflow gate, where it is raised to the boiling point, but not permitted to boil; here we skim every two or three hours—(these two divisions are separate from the rest of the defecator, the bottom of which stands on a level with top of third division)—the juice passes from under the scum by an enlarged faucet into the third division, which is subdivided by ledges, sixteen inches apart, similar to Cook pans; here it is boiled rapidly, with just enough in the pan to keep
it from burning, and skimmed thoroughly as it runs forward to the front end of pan, where it becomes a pure white foam, and runs by continuous flow immediately over the fire into settling tank, of which we have two; when one is full we draw by swing pipe into evaporator and finish. We think by settling in the cold juice tank, and also in the hot semi-syrup tank, we get out impurities which we could not eliminate in any other way.

It will be observed that we use nothing but lime in defecating, for the reason, we think, that by this method of manipulation we can use enough to get a very good defecation, and yet have a color that is entirely unobjectionable, and a flavor too good to compromise.

Following this paper, the convention proceeded to the election of officers, which resulted in the selection of:

President—A. S. Chapman, Madison, Ind.
Vice President—A. Furnas, Danville, Ind.
Secretary—E. W. Deming.
Treasurer—W. F. Leitzman, Clayton, Ind.

President-elect Chapnam, in a few words, thanked the Association for the honor, and stated he was in full sympathy with the success of the industry, and would spare no efforts to attain this end.

Mr. Porter. I favor the use of a question-box.

Mr. Furnas. As intimated in my address, large works are not so successful as smaller ones, where the latter employ a portable engine with boiler to grind and furnish with, evaporating by use of an open pan, on a properly constructed furnace. If too much heat does not escape up the stack, they are, as a rule, quite successful. Would prefer some good ordinary pan, eighteen or twenty feet long, and boil shallow and rapidly; arranged so surplus or escaping heat from the first pan would be utilitized by the second pan. Prefer steam for finishing, as it is always under control. We should procure a larger extraction of juice, and it does not speak well for our intelligence and ingenuity that we make no progress in this direction. We should increase our extraction fully 30 per cent.; competition is becoming stronger, and every edge must be made to cut. Threshing engines require about three-quarters to one cord of wood per day, or the equivalent of limbs, chips and chunks.

Mr. Clelland. Think it more economical to grind with horses.

Mr. Nicholson. Mr. engine uses one and one-half cords three-foot wood per day; an eight-horse power engine.

Mr. Christ. I use about one cord of wood from early morning to 9 P.M.

Mr. Raab. Can not get a cheap threshing engine at my place. My engine requires more attention than a thresher. Prefer to finish by open pan if I can get a man. Engine repairs and wood for engine are expensive; use a six and one-half horse power engine for grinding. There is less outlay for an open pan outfit than for steam.

Mr. Miller. Am not a manufacturer; steam has heat for evaporating, but should be super-heated and arranged so hot air should pass up through the juice at the same time; this would greatly hasten the work and increase the capacity of the pans. A larger extraction could be obtained by placing the cane whole or cut
in pieces in a large tank and steaming over night; this would soften the joints and wind. New Orleans molasses is the only sweet that in any way approaches the value of sorghum as a table syrup. Nothing so healthy; we can make all our sugar and molasses from sorghum. We have the soil and climate to produce sorghum, and the energy and ability to properly handle it.

Mr. Nicholson. Would not steam sour the juice in the cane?

Mr. Müller. No danger, if kept hot.

Prof. Wiley. No doubt but steam would keep it; the finer the state of the parts the greater the extraction; the gain by shredding is fully 10 per cent. Governor Warmouth, of Louisiana, claims 12. Dry heat or any other process that softens the cane will give as good results as the use of steam.

Another method, is to cut the canes into fine pieces before grinding. Succeeded in passing these pieces through a mill, obtaining 10 per cent. greater extraction than by the use of whole canes; the distribution of the canes in this manner caused the greater extraction. Cane cut, shredded or softened will give more extraction.

In steaming, cane juice is not liable to ferment if temperature is kept half way to the boiling point, as this heat will prevent the increase of the germs. Steam may destroy them. Cane can be softened by freezing. The problem of greater extraction is of importance to the small worker. Half the labor of the field is lost by leaving one-half the sugar in the bagasse. From some old-style mills I have seen bagasse that would stand alone. Diffusion extracts all the sugar, but its great cost and skill required in operating will preclude its use by the small manufacturer. I believe the answer to this problem is in the use of a shredder, or what may be better, the use of a cutter, by which the cane is cut into one inch pieces and the blades and sheaths removed by a blower. Am aware there is not the objection to milling unstripped cane as when diffused, the latter extracting a quantity of gum and starch in solution that can only be removed by alcohol, a process too costly for this business.

Were I to enter the field as a manufacturer I would have a five-roll mill made; the double pressure from the supplemental rolls always increases the yield 10 or 12 per cent. where twelve gallons of syrup is obtained by ordinary methods. The use of cut canes and a supplemental mill would easily give sixteen to eighteen gallons, which at this rate of increase would soon pay for the additional machinery required. Some inventor should work in this most promising field, as at least one-half of what is now wasted should be saved.

Mr. Miller. Cut the canes one inch long leaves and all?

Mr. Wiley. Yes, an ensilage cutter is what is needed.

Mr. Furnas. Any trouble in feeding small pieces of cane into the mill?

Mr. Wilby. None whatever. I fed thin chips. Large pieces feed better.

Mr. Carter. Should the rolls of large mills be creased? Would it not be better to use two small mills than one large one? The use of steam is much more economical than horses for grinding.

President. I am interested in this discussion upon machinery as a manufacturer. I have a double interest and can be depended on to work for the success of this industry.
Mr. Porter. Until last season I generally took every one’s advice in regard to removing scale from pans, and was generally wrong. I tried sulphuric acid; that nearly ruined my pan before I learned how to use it. I now use skimmings of the season before that were allowed to become very sour. I have no further use for sulphuric acid or bricks.

Mr. Pickens. For the past twenty years I have tried sour juice for removing scale from evaporators, and am satisfied with its use. As small manufacturers we do ourselves much injury by the use of chemicals of which we know so little. Burn bagasse at night after each day’s run where it is thrown just beyond the track of the horses. This season ground by steam; hauled it away. No time to burn it. The advantage of burning is to save manual labor. Make over 2,000 gallons each season, for which I get forty cents per gallon.

Mr. Miller. What is your process of work? Do you settle the juice before heating?

Mr. Pickens. Use no settling tanks; eight minutes required from time juice enters the pan until syrup is formed. No chemicals used. Merely care and attention. Some become alarmed unnecessarily and cut prices on syrup; this is very damaging to the business and should not be done. I can not fill one-half of the orders received at the factory. Last year was the only one that gave trouble in producing good syrup; caused by a second growth of cane at the joints. Am opposed to the use of chemicals.

Mr. Porter. Do not burn my bagasse; use it for mulching the orchard and small fruits. Use some on wheat fields.

Mr. Raab. Use my bagasse as manure; where used as a mulch for grapes it prevents rot. Sometimes use it two feet deep.

Mr. Porter. Bagasse has no weed seeds, prevents grape rot, and, used as a mulch for eight or ten feet from the trunks of my apple trees, has brought into-bearing an unproductive orchard, yielding every year fully 300 bushels of apples.

Mr. Tompkins. Use common cider vinegar for removing the scale from evaporators.

Mr. Harvey. How shall I prevent rust on pans and machinery?

Mr. Porter. Use tallow.

Mr. Christ. Use iron paint on the rolls and grease on the pans.

Mr. Harvey. Use the last skimmings of molasses.

Mr. Deming. Tallow and white lead mixed are good for this purpose.

Mr. Furnas. Is it possible to dispense with settling tanks? The Porter pan does not use them. They are expensive and wasteful.

Mr. Clelland. Use no settling tanks; they darkened my syrup. Passed the juice through a straw filter fastened to the side of my Smouse pan.

Mr. Furnas. Do not Smouse pans gather pellets on the covers?

Mr. Clelland. Yes, but by slightly changing the fire this trouble was overcome.

President. Has Mr. Pickens a settling tank?

Mr. Pickens. No, sir.

President. I visited Mr. Pickens’s factory. He has a two-story, open shed building, with the boiler placed at one side. Uses Porter’s pan; pumps the juice to defecators above everything, from which it flows into a second defecator; re-
moves the scums by the use of a board; it then goes into the evaporator, from which it passes, finished syrup, into the room below. The two defecators resemble somewhat a Porter pan.

Mr. Furnas. What's the advantage of two defecators?

Mr. Pickens. One would not heat the juice rapidly enough to remove the scum before it entered the evaporator. Make 150 gallons per day with eighty pounds steam, 20 H.-P. boiler.

Mr. Deming. Apropos of this, I will say that in the use of steam evaporators much heat is lost by drawing from the coil water very nearly the boiling point, and often some steam; especially is this the case where there is a desire to increase the work of the evaporator. This exhaust water and steam should be led into a coil placed in a tank where the juice is partially heated before entering the evaporator, and from which the water could be removed almost entirely relieved of its heat. In this manner the coil of the evaporator would contain live steam throughout, and one-half of the heater would also contain live steam. This would increase the capacity of the works, say one-tenth, without a corresponding increase in the expense.

Mr. Pickens. Do all my work by day. Exhaust steam used as boiler feed.

Mr. Furnas. Who uses settling tanks?

Mr. Raab. Have no use for them.

Mr. Nicholson. Used a milk strain for clearing the juice.

Mr. Carter. Believe juice could stand several hours before heating without injury.

Mr. Clelland. From semi-syrup held over night got no settling, but a much darker syrup.

Mr. Raab. Once carried overnight a tank of semi-syrup; it spoiled and made very poor molasses.

President Chapman delivered the following address on

ORGANIZATION.

To bring organization to the present day, let us but observe the two great political parties of the country—Democrat and Republican. What are they but two immense organizations, involving almost the entire inhabitants of this great country; and we observe in every instance history repeats itself, and failure, local failure, follows local and internal disorganization in either ranks. Wherever we find either party thoroughly organized there we find them victorious, even against great odds, when their opponents are disorganized. Now, our farmers are the least organized of any class or trade in the country; receiving the least legislative benefits, notwithstanding they outnumber by far any class of tradesmen in the country. True, they have the Grange, an association that has done more to teach them the value of organization than all the history they have ever studied. They also have several kindred associations, the Wheel of Arkansas, the Farmers' Alliance, etc., but go into the city and you find the organization in almost every circle, from the friendly club of a choice few, its aim to cultivate and give pleasure, up to the great organizations of the day, which reach out and grapple questions of
national importance. The great cause of our farmer's lack of organization is not because they are different from other men; not because they are not just as intelligent as their city brethren, for as a mass they are more so.

The farmer's lack of organization is not because they are less social than those who reside in the towns, for we find no more sociable people than our farmers, and his hospitality is proverbial, but because of their very isolation. Their homes are too far apart to allow of the almost constant visiting and commingling of their city brethren. Their distance apart and their labors prevent that frequent contact and discussion of mutual interests, which is the mother of all organization. The farmer's power in electing legislators is great above any other class, but their power in real legislation is probably least, all through their lack of organization. The recent passage of the oleomargarine bill but shows the power of the farmer when they combine and assert their will, and did they but continue thus there are no just rights they could not command.

Now the world is so ordered that each particular industry requires its own sustaining organization. The sorghum industry, with its many drawbacks and obstacles, is no exception, but especially needs it. This sugar industry is one of the most important in our country. We spend a hundred million dollars annually for the single luxury of sugar alone. With the present arrangements, depending almost entirely on the southern cane, which grows but on a small area, we are compelled to send our millions to foreign countries to supply the yearly increasing demand. This being the case, it stands us in need as a nation to look about us for something that will stop this drain of much needed millions. In so looking we find but two sources from which to supply the deficiency—beets and sorghum. The former has been shown financially unsuccessful in this country, with but one exception, and as a general utility crop on the American farm it is a failure. On the other hand, the possibilities of sorghum are known, as hundreds of years of crude cultivation in Asia have proven, to be greater than that of the regular sugar cane. In this country it has particular facilities. It has nearly, if not quite, as large a percentage of sucrose as the sugar cane. Its cultivation is adapted to an almost unlimited area of country. Outside of its sugar and syrup making qualities, as a general utility plant on the farm it is scarcely surpassed by the great cereals of the country. The seed from an acre of sorghum is almost as valuable as the yield of corn or wheat from the same acre. The leaves make valuable feed, and even the crushed stalks have their value, as every farmer knows. As informed by Professor Wiley, only the overcoming of a few mechanical difficulties is required to make sugar from the plant as economically as from any other known source; and almost every farmer knows its value as a syrup producer.

No finer syrups are made than that from sorghum, when properly manipulated.

With all these facts before us does it not appear to the ordinary man, the interest and duty of the American people, as well as the American farmer, to foster so important an industry, and to thoroughly organize that we may more perfectly do so?

Notwithstanding the disinterestedness shown, there is no organization in our country more deserving of public attention and patronage than the Cane Grower's Association. We sorrowfully look about us and see the lack of interest taken in-
the Association at large by our farmers. One of the great sorghum advocates of
the day who has attended the National and several State Conventions, recently in-
formed me that Indiana had the most perfect and best attended Cane Grower's
Association in the country, the National not excepted. This fact, notwithstand-
ing it should make us proud of our State organization, should cause a pang of painful
regret at the lack of organization in our ranks throughout the country at large.

When we part from this pleasant meeting and seek our homes, we should ever
bear in mind that a whole world's history proves that success requires united or-
ganization, and with that fact in mind, plan and put into effect every means in our
power that will tend to strengthen this Association.

If each member will but talk its benefits up and induce but a single farmer to
attend, that alone would double our membership; and how easily done if we only
take the proper interest. Let us try and not be numbered among the indifferent,
the greatest enemy our organization has.

DISCUSSION.

Mr. Deming. At Fort Scott the past season an experiment was undertaken
having for its object the removal of all the leaves and sheaths of the cane. The
results as obtained by cutting the cane into one-inch lengths and blowing out
the trash were very promising. In this manner I believe sorghum juice can be
relieved of fully three-fourths of the impurities now met in the juice of stripped
cane.

Mr. Carter. Are there no impurities in the pith if the rind and joints were re-
moved?

Mr. Deming. The pith is not free of impurities, as some have claimed;
although the amount is very small as compared with what is found in the joints,
sheaths and leaves.

Mr. Leitzman. Is there any loss of juice by cutting cane into one-inch pieces?

Mr. Deming. None whatever.

Mr. Furnas. I have had some experience in working cane from which the
sheaths were removed. A neighbor and rival in the business in the early days of
sorghum undertook to make a better syrup than I. One day, having a good sam-
ple, I started for his works, only separated by a cornfield from my own, and met
him with a saucer on the same mission. I determined to outdo him once and for
all. Taking a knife I removed the sheaths from a small lot of cane. The syrup
was better than any he ever made. I told him how it was made, but was not be-
lieved. Never had as pure juice since. The cane could be cut into inch lengths
very easily by the use of any feed cutter.

Mr. Carter. I want the leaves left in the field.

Mr. Nicholson. I want Mr. Leitzman's experience with settling tanks.

Mr. Leitzman. I use them. It's some labor to settle twice. Continuous flow
pans can not be used except on cold juice. By their use a sediment is obtained
that would otherwise make a deposit on the pans. Less depth settles soonest. Last
season I used a continuous defector, the juice entering at one end and passing out
the other. It worked well, never carrying juice over two inches in depth. Scum

30—Bd. of Agr.
goes to the end, where the surface of the juice is smooth. The settling tank holds 150 gallons. I usually allow juice thirty minutes to settle before starting the evaporator. The juice enters the settling tanks without disturbing its contents. I also use a settler between the evaporator and the finishing pan.

Mr. Coffin. We use a settling tank on the cold juice, with benefit, and then run the juice through a perpetual defecator. The cold juice enters at a sloping end, where most of the skimming is done.

Mr. Clelland. I have no difficulty in selling all I make.

Mr. Carter. How about Indiana soil and climate for cane?

Prof. Wiley. The soil is good but the climate is bad.

Mr. Leitsman. Is there further need of skimming after the juice passes through a filter press?

Prof. Wiley. None whatever. All the impurities are removed.

President. Will Mr. Pickens state the value of bagasse ashes as a fertilizer?

Mr. Pickens. Always burned bagasse. Produced large quantity of ashes. As a fertilizer was powerful. Used it cautiously. To rot bagasse well, stock should run over and tramp it. I prefer to haul out the bagasse as ashes.

Mr. Clark. Cane cut and piled but not ground rots very slowly.

Mr. Pickens. Bagasse rots quicker because rain and air have access to all parts.

Question: Would salicylic acid prevent ferment in juice carried over from one day to the next?

Prof. Wiley. No trouble whatever to do this by the use of a very small quantity of this acid. No other substance is so active in preventing growth of bacteria as salicylic acid, which is made from carbolic acid. The use of this acid in articles of food has been condemned by all scientific experts, as its use even in very small quantities is known to cause disorders in the digestive organs. In France and Germany its use is forbidden by law. In this country I have found it in cider. Sweet cider is rarely found without it. It is used in preserved or bottled beer, and sold as a medicine to preserve fruits of all kinds. I am informed it is used to preserve milk, but I think this doubtful. This acid is very serviceable in preventing all kinds of alcoholic fermentation. It has a value in the treatment of rheumatism. President Cleveland is probably using it now. Sulphurous acid is more effective for preserving sweet cane juice, and much cheaper, and exerts no bad effects upon the human system. Could be used combined with lime as bi-sulphite of lime; or with soda; or, what would be better, the fumes of burning sulphur forced into the juice.

Mr. Nicholson. Are settling tanks of more value on clarified juice, or on semi-syrup?

Mr. Leitsman. That could only be determined by omitting the use of first one and then the other. Get more sediment before evaporation than after, but of quite a different nature. It is gummy and contains albumen, and has a bad appearance. The matter obtained in the semi-syrup tanks is of a light feculent nature and difficult of separation. If not removed would probably settle in the evaporator on the bottom or on the coil.

Mr. Carter. From one acre I made 160 gallons.
Mr. Wiley. Several years ago I made the only money I ever made from sorghum at Lafayette. From 54 acres I averaged 201 gallons per acre. We raised 40 of this ourselves, the balance was purchased from farmers; had a good mill, giving a good extraction of juice, and care was used in saving the skimmings. When reports of 75 gallons or less are made from one acre it shows a poor crop or a poor mill. The yield should never be less than 150 gallons per acre. The Amber cane does not give a large tonnage but is very rich in sugar. A very notable exception to this was had at Rio Grande, N. J., this season, where they failed to make a pound of sugar from 300 acres of Amber, which has heretofore been their richest cane.

Mr. Berry. Orange is the best cane with us; has a rich juice and yields well.

Mr. Porter. We commit an error by changing the field in which we grow our cane. One piece planted continuously for eight years past has increased the yield of syrup from 50 gallons the first year to 90 for last season, but the syrup becomes darker each season.

Mr. Clark. I wish to procure some pure Liberian cane seed. Amber grains badly; does not sell well. I understand Liberian does not grain.

Mr. Porter. Why does syrup become darker from cane grown on the same land year after year?

Prof. Wiley. I do not know.

Mr. Porter. Part of my land that is subject to overflow every year makes a clear, light-colored syrup. Such land generally makes dark syrup.

Mr. Wiley. This is different from my experience. My father's farm is limestone formation, and made darker syrup than was usually obtained from cane grown on bottom land. Possibly it can be accounted for from the fact that the soil has more strength, and the cane takes up more minerals. The overflowed land spoken of as producing a light-colored syrup is due probably to the wash from upland soil.

Mr. Porter. My uncle planted some land in cane for 15 years; increased yield each year, but syrup grew darker in color each year.

Mr. Miller. My experience was that dark soil gave dark syrup and light soil light syrup. Money is what is wanted by all connected with this business. Nothing should be wasted; skimmings should be made into vinegar. Dr. Chase's receipt book gives a description of how to make a good vinegar box. The expense of steam for evaporating is perhaps a little greater than where open pans and fire is used; the combination of steam and hot air gives good results at trifling additional cost.

Mr. Nicholson. For cane prefer a sugar cane, or a light clay soil; like the taste of the syrup from this land.

Mr. Leitman. I made a vinegar machine according to Dr. Chase's receipt book. It would make vinegar, but skimmings do not make the best vinegar; it is objectionable both in appearance and taste; can find no market for it. The vinegar grub is troublesome; sulphur fumes or working in a dark room failed to reduce their number. This fact alone condemns the business for me.
Professor Wiley. The gnats will not injure the vinegar; can be removed by straining. Vinegar contains hundreds and millions of insect life, as a microscope shows.

Mr. Leitman. So water contains them. Who could drink it if full of gnats the size of a pin head? It is simply a matter of size.

President. Here is a report from the Committee on Resolutions.
The Committee on Adulteration of Syrups reported as follows:

WHEREAS, The manufacture of sorghum molasses in this country is conducted mainly by farmers scattered throughout our whole corn belt, employing an average individual capital of one thousand dollars, and aggregating in value several hundred thousand dollars, producing annually a pure wholesome molasses valued at many millions.

Owing to the adulteration, mixing and compounding of all commercial syrups as practiced in our cities, we can not by our present methods of manufacture produce an article sufficiently low in cost and uniform in grade for successful competition, owing to our isolated condition, other interests in which most are engaged and the lack of means. No considerable effort has been made to develop the industry; our advance therefore during the past twenty-five years has not kept pace with improvement in other lines of manufacture.

From these causes the industry is in a depressed condition. Many plants were not operated the past season, and more will dismantle the coming season.

Recent developments have disclosed two processes for cleaning the cane and purifying the juice that give promise of inestimable value to the manufacturer of sorghum sugar and molasses. We therefore feel the urgent necessity of extended experiments to determine the value of these and other processes, hoping to restore again the prosperous condition prevailing upon the advent of these spurious syrups on the market.

Be it resolved, therefore, That our National Congress be urged to appropriate the sum of ten thousand dollars to be expended under the direction of the Commissioner of Agriculture for the exclusive benefit of the sorghum syrup manufacturers of this country.

Resolved, That this Association of Indiana Cane Growers, in convention assembled this 31st day of December, 1886, do hereby petition the National Congress to consider the fraudulent adulteration of the sweet products of the country with glucose, and to pass laws prohibiting such adulteration, compelling manufacturers and those who handle glucose to represent it as glucose, and making the adulteration of any sweet article by glucose a misdemeanor.

Resolved, That our Senators and Representatives be requested to see these, our wishes, properly brought before the National Congress.

Adopted.

NATIONAL SUGAR GROWERS.

Resolved, That the Indiana Cane Growers, in convention assembled, cordially invite the National Sugar Growers' Association to hold their forthcoming annual convention at Indianapolis.

Adopted.
Mr. Leitzman. I move a vote of thanks be tendered Commissioner Colman and Prof. Wiley for their kindness in contributing to the interest of this meeting. Passed.

President. At our last meeting resolutions were passed making honorary members of all ladies who attend these meetings. There are a number present. Will the Secretary please secure their names?

Secretary. The names of the ladies present and entitled to honorary membership are: Misses Ettie and Emma Sawin and Mrs. Ida Sawin, Edinburg, Ind.; Mrs. D. D. Nicholson, Clayton, Ind.; Miss Theodosia P. Leitzman, Clayton, Ind.

The following prizes were awarded by the Sampling Committee:
Second prize—Chemicaled, A. P. Clelland, Birmingham, Ind., $2.
First prize—Unchemicaled syrup, Coffin Bros., Thorntown, Ind., $3.
Second prize—Unchemicaled, Simeon Tobias, Cana, Ind., $2.


W. D. Clark, Colfax, Ind., was awarded a $15 evaporator for the best essay on sorghum.

President. I very much desire that this association shall take some action toward securing national aid for assisting in the full development of this business as conducted by the syrup manufacturers. In the attempt to produce sugar at one or two points in this country thousands upon thousands have been expended. While ours, a partially successful and promising industry, scattered throughout the entire corn belt of this country, producing a wholesome sweet valued at millions of dollars annually, has never received the encouragement and assistance it deserves. Two promising processes, one for removing from the canes all adhering foliage, and the other for purifying the juice, are destined, I believe, to work a revolution in the methods employed by our manufacturers, and will result in an even, uniform grade of goods, a matter of great importance to us. I would suggest the appointment of a committee to draft suitable resolutions and properly bring this matter to the notice of the honorable Commissioner of Agriculture, and any others whose interests and influence may aid us.

On motion Messrs. Chapman, Porter, Deming and Leitzman were appointed to take charge of the work.

Mr. Deming. I move the same premiums be offered at our next meeting as were offered at this meeting.
Passed.

Mr. Leitzman. I hereby announce that next year I shall not appear as a competitor for any premiums. [This was made in reply to a remark that Mr. L. would carry off all the best prizes, and should stimulate many to bring samples who otherwise would not.]

Adjourned sine die.
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