PROVINCIAL EXHIBITION BUILDING, TORONTO.
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TRANSACTIONS

OF THE

BOARD OF AGRICULTURE

AND OF THE

AGRICULTURAL ASSOCIATION

OF

UPPER CANADA.

VOL. 3.

TORONTO:
PRINTED FOR THE BOARD OF AGRICULTURE,
BY THOMPSON & CO.,
1859.

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TO THE HON. JOHN ROSS,

Minister of Agriculture, &c., &c.

SIR,—

In accordance with that portion of the Act 20 Vic., Chap. 32, for "the encouragement of Agriculture," which renders it the duty of the Board of Agriculture of each section of the Province to "keep a record of their respective Transactions, and from time to time publish, in such manner and form as to secure the widest circulation among the Agricultural Societies and the farmers generally, all such Reports, Essays, Lectures and other useful information as the said Boards respectively may procure and adjudge suitable for publication," I have the honor herewith to present to you the Transactions of the Board of Agriculture of Upper Canada for the year 1858-9, with an abstract of the Reports of the County and Township Agricultural Societies for the year 1857.

The contents of this volume have been from time to time, in accordance with the Act, widely circulated "amongst the Agricultural Societies and farmers generally" of the Province, in connection with the monthly journal now published by the Board, as stated in last Report, and it is hoped that the information therein contained may be of some service in promoting the advance of Agricultural science.

There were in 1857 forty-two county and one hundred and eighty-two township societies existing under the Act 16 Vic. Cap. 11. The abstract of their Reports herein contained will afford some data by which to judge of their progress in activity and usefulness. In 1858, when the present statute, 20 Vic. Cap. 32, came into operation, societies were organized under its provisions for nearly all of the Electorial Divisions of the Province, by which the number has been considerably increased, and it may with reason be anticipated that with the extended means of usefulness at their command, their efforts may be productive of correspondingly increased useful results.

The analysis of the Report of the Provincial Exhibition will show the steadily increasing interest taken in it by farmers, artisans, manufacturers and the public at large, and will also illustrate the progress which has been made in the development of the material resources of the Province; a progress which the institution of the exhibition itself has in no small degree tended to promote.—With that improvement in the breeds of animals, in the manufacture of implements, in choice of seeds, systems of husbandry, and with the increased knowledge, which may eventually be looked for, and which have already been greatly stimulated and aided by these exhibitions, it may confidently be hoped that the Agriculture of the country, upon which the recent comparatively unfruitful harvests have shown, through the commercial depression resulting from them, that its general prosperity so largely depends, will be established upon a sound and constantly improving foundation.

I have the honour to be,
Sir,
Your most obedient servant,
HUGH C. THOMSON,
Secretary B. of A. U. C.

Toronto, August 1859.

ILLUSTRATIONS.

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TRANSACTIONS

OF THE

AGRICULTURAL ASSOCIATION,

AND BOARD OF AGRICULTURE

OF UPPER CANADA.

THIRTEENTH YEAR,—1858.

OFFICERS OF THE AGRICULTURAL ASSOCIATION, 1858.

President—D. B. Stevenson, Picton.
1st Vice-President—Wm. Ferguson, Kingston.
2nd Vice-President—John Wade, Cobourg.
Treasurer—R. L. Denison, Toronto.
Secretaries—Professor Buckland, Toronto, Secretary of the Board of Agriculture, and Wm. Edwards, Secretary of the Board of Arts and Manufactures.
Consulting Chemist—Professor Croft, University College.
Seedsman—James Fleming, Toronto.
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Hon. Adam Fergusson, Woodhill.
Henry Ruttan, Cobourg.
J. B. Marks, Kingston,
T. C. Street, Niagara Falls.
C. P. Treadwell, L'Orignal.
David Christie, M. P. P., Brantford.
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Geo. Alexander, Woodstock.

MEMBERS EX-OFFICIO.

HON. P. M. VANKOUGHNET, Minister of Agriculture.
GEO. BUCKLAND, Professor of Agriculture, University College.
REV. EGERTON RYERSON, Chief Superintendent of Education, Canada West.

Associate Members ex-officio, under clause 34, 20 *Victoria, chap.* 32, *as Council of the Association:*

W. B. JARVIS, Toronto, President of the Board of Arts and Manufactures.
DR. BEATTY, Cobourg, Vice-President, of do.
Corresponding Secretary—PROF. BUCKLAND, Toronto.
Recording Secretary—H. C. THOMSON, Toronto.

LIFE MEMBERS OF THE ASSOCIATION.

[The payment of ten dollars constitutes a life member when given for that special object, and not as a contribution to the local funds.]

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W. H. Boulton, Toronto.
James Boulton, Toronto.
W. A. Baldwin, Toronto.
Francis Boyd, Toronto.
Donald Bethune, Toronto.
Thos. Briggs, Kingston.
Dr. J. E. Barker, Kingston.
W. W. Baldwin, Oak Ridges.
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David Christie, Brantford.
E. C. Campbell, Niagara.*
Nathaniel Davies, Yonge St.
James Dougall, Amherstburg.
Walter Dickson, Kiagara.
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Major Forbes, Kingston.
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Billa Flint, Belleville.
Rev. T. B. Fuller, Thorald.
W. R. Forster, Toronto Township.
G. W. Allan, Toronto.
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John Boyes, Kingston.
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Lewis Cameron, Kingston.
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Charles Clark, Kingston.
Dr. Campbell, Niagara.
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Z. B. Choate, Glanford.
Thomas Deykes, Kingston.
R. L. Denison, Toronto.
Richard Drury, Simcoe.
John Dow, Whitby.
William Ferguson, Kingston.
J. R. Forsyth, Kingston.
Peter Fisher, Nelson Township.
Thomas J. Fuller, Toronto.
James Fleming, Toronto.

*The names of E. C. Campbell and John Simpson, of Niagara, life members since 1850, were accidentally omitted in the list published in last volume. The names of members known to have deceased are ommitted from this list.

Clark Gamble, Toronto.
Wm. Gamble, Etobicoke.
Archd. Glendinning, Scarboro.

Hon. John Hamilton, Kingston.
Francis M. Hill, Kingston.
Andrew Heron, Niagara.
Richard Hescott, Niagara.
George Henry, Elgin.
Hon. F. Hincks, Windward Isles.

A. S. Irons, Kinston.
W. B. Jarvis, Toronto.

Thos. Kirkpatrick, Kingston.
H. Kordes, London,

Baron de Longueuil, Kingston.
James Lewis, Saltfleet.
Henry Laidley, Toronto.

J. B. Marks, Kingston.
Earl of Mountcashel, Amherst Island.
John McPherson, Kingston.
H. A. Mills, Kingston.
Lewis Moffatt, Toronto.
Rev. Dr. McCaul, Toronto.
Archd. McLean, Toronto.
O. T. Macklem, Chippawa.

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W. M. Paterson, Kingston.
J. B. Plumb, Albany, New York.
Capt. Spencer Peel, Amherstburg.
James Paterson, Streetsville.

Hon. Jno. Ross, Toronto.

Hon. Henry Smith, Kingston.
Jno. Sanderson, Chinguacousy.
Alex. Shaw, Toronto.
Sheriff Smith, Barrie.
Charles Small, Toronto.
Samuel Shaw, Toronto.
Samuel Scarlett, Etobicoke.

Samuel Taylor, Kingston.
E. C. Thomas, Hamilton.

William Willson, Kingston.
John Watkins, Kingston.
J. G. Worts, Toronto.
James Webster, Guelph.
Wm. Woodruff, St. Davids.
J. P. Wheler, Scarboro.
Joseph Webster, Flamboro West.

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John Gibb, Lindsay.

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J. O. Hatt, Hamilton.
Capt. Hancock, Queenston.
James Hobbs, Toronto.

E. Jones, Stamford.
Robert Jackson, Kingston.

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Joseph Kerby, Guelph.

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B. Lawrence, Niagara.
A. Lemon, Guelph.

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Jas. Morton, Kingston.
Thomas Muckleston, Kingston.
W. Mattice, Cornwall.
Hon. J. C. Morrison, Toronto.
Hon. W. H. Merritt, St. Catherines.
Jno. L. McDonald, Gananoque.
Thos. Musson, Etobicoke.

Hon. J. H. Price, Toronto.
Henry Parsons, Guelph.
Sir Edward Poore, Cobourg.

Maxwell Strange, Kingston.
C. Stinson, Chinguacousy.
D. Smart, ———.
Thos. C. Street, Niagara Falls.
J. M. Strachan, Toronto.
F. W. Stone, Guelph.
John Simpson, Niagara.

E. W. Thomson, Toronto.

W. P. Wilson, Kingston.
William Weller, Cobourg.
Fred. Widder, Toronto.
James S. Wetenhall, Hamilton.
Thos. Wheeler, Toronto.
E. A. Walker, Simcoe.
Prof. J. Wilson, Edinb'gh University.

THE AGRICULTURAL STATUTE.

For the general information of Agricultural Societies and others interested, the Act under which the Agricultural Association, County and Township Agricultural Societies, Horticultural Societies, &c., are now constituted is here given :—

20 VIC., CAP. XXXII.

An Act to repeal a certain Act therein mentioned, and make better provision for the encouragement of Agriculture, and also to provide for the promotion of Mechanical Science.

[*Assented to* 10*th*, *June*, 1857.]

Whereas by the Parliamentary Representation Act of 1853, Upper Canada has been divided into new Electorial Divisions, it is therefore desirable to extend to such new Divisions, the provisions of the Act passed in the sixteenth year of Her Majesty's Reign, chapter eleven, *to provide for the establishment of a Bureau of Agriculture, and to amend and consolidate the Laws relating to Agriculture*, and to make further amendments in the said Act, and it is convenient that such amendments and so much of the said Act as shall not be affected thereby shall be read as one Act; And whereas it is also desirable to promote the development of Mechanical talent among the people of this Province, by disseminating instruction in mechanics and the kindred sciences, and by affording increased facilities for the study of Models and Apparatus; And whereas for the attainment of this object, by these means it is expedient to provide for the establishment of Central Boards of Administration in Upper and Lower Canada respectively, connected and co-operating with the Mechanics' Institutes of the several Cities, Towns and Villages in the pursuit thereof; And whereas it is also desirable to extend encouragement to Arts and Manufactures, and stimulate the ingenuity of Mechanics and Artizans by means of prizes and distinctions, distributed and awarded on the same principle as has been already so successfully applied to the encouragement of Agriculture in this Province: Therefore, Her Majesty, by and with the advice and consent of the Legislative Council and Assembly of Canada, enacts as follows:

I. From and after the passing of this Act, the Act cited in the preamble to this Act shall be, and the same is hereby repealed; but all Acts thereby repealed shall remain repealed, and the Bureau of Agriculture and all Agricultural Societies, Associations and Boards of Agriculture incorporated or otherwise created, continued or recognized by, or which have been lawfully organized or established under the said Act, shall continue as if the said Act were still in force, except in so far as the said Bureau or such Societies, Associations or Boards may be altered or affected by this Act.

BUREAU OF AGRICULTURE.

II. The Bureau of Agriculture shall continue to be attached to one of the Public Departments, and the Head of such Department shall be charged with the direction of the Bureau, and shall in respect thereof be known as the Minister of Agriculture.

III. The said Minister shall be *ex officio* Member of all Boards of Agriculture which now are or hereafter may be established in this Province. It shall and may be lawful for the Members of the Board of Agriculture to elect from among themselves a President and Vice-President at their first meeting and every annual meeting thereafter.

IV. The said Minister shall also receive all applications, drawings, descriptions, specifications and models for or relating to Patents for Inventions in this Province, and shall keep the records thereof; and all Acts now in force relating to Patents for Inventions and which direct any thing to be done by or through the Provincial Secretary, shall be held to have directed the same to be done by or through the said Minister.

V. The said Minister shall also be a Member of the Board of Registration and Statistics, in the place of the Inspector General and shall be the Chairman thereof, and shall under the general direction of the said Board, have charge of the Census and other Statistical Returns.

VI. It shall be the duty of the said Minister to institute inquiries and collect useful facts and statistics relating to the Agricultural, Mechanical and Manufacturing interests of the Province, and to adopt measures for disseminating or publishing the same in such manner and form as he may find best adapted to promote improvement within the Province, and to encourage immigration from other Countries; and he shall submit to Parliament within ten days after the opening of each Session thereof a detailed and succinct Report of his proceedings.

VII. All Boards of Agriculture, Agricultural Associations, Agricultural Societies, Municipal Councils, Boards of Arts and Manufactures, Mechanics' Institutes, Public Institutions, and Public Officers in this Province, shall promptly answer official communications from the said Bureau of Agriculture, and shall make diligent efforts to supply correct information on all questions submitted to them respectively; and any Officer of any such Board, Association, Society, Council, Institute, or other Public Institution who shall refuse, or wilfully neglect to answer any question, or to furnish any information relating to the Agricultural, Mechanical or Manufacturing interests, or the Statistics of this Province, whenever required so to do, either by the said Minister, or by any person duly authorized by such Minister in that behalf, shall for every such offence incur a penalty of ten pounds currency, which penalty shall be recoverable by any person suing for the same before any Court of competent jurisdiction, and shall be paid to Her Majesty.

VIII. The Minister of Agriculture may at any time, and from time to time, appoint any person or persons to inspect the books and accounts of any Society in the Province receiving Government aid, and which may be in any way in connexion with the said Bureau of Agriculture; and all officers of every such Society whenever required so to do, shall submit such books and accounts to such inspection, and truly to the best of their knowledge answer all questions that may be put to them in relation thereto, or to the funds of such Society.

BOARDS OF AGRICULTURE.

IX. The Presidents, for the time being, of the Agricultural Associations hereinafter mentioned, and all Professors of Agriculture in Chartered Colleges, Universities and other public educational institutions, and the Chief Superintendents of Education in Upper and in Lower Canada, shall respectively be Members *ex officio* of the Board of Agriculture for that section of the Province in which they reside.

X. Four Members of each Board shall annually retire and cease to be Members thereof, unless re-elected, each seat being vacated every alternate year, but retiring Members may continue to exercise all their functions until their successors have been duly elected as hereinafter provided; and the names of the retiring Members shall forthwith be published in the Agricultural Journals of the section of the Province in which they reside.

XI. The County Agricultural Societies in Upper and Lower Canada respectively, shall, at their annual Meetings in January, nominate four fit and proper persons to be Members of the said Boards of Agriculture respectively, and shall forthwith transmit the names of the persons so nominated to the Bureau of Agriculture; and the four persons who shall have been nominated by the greatest number of Societies shall be Members of the said Boards respectively, in the place of the Members vacating their seats aforesaid. Vacancies which may at any time happen through death, resignation or otherwise, may be filled up by the Governor in Council.

XII. In case of an equality of votes for one or more of the persons so nominated, the Minister of Agriculture shall decide which shall be the Member, and he shall cause the persons so nominated, and the Boards to which they are nominated respectively, to be immediately notified of the result.

XIII. It shall not be lawful for either of the said Boards to pay or allow any sum to a Member thereof, for acting as such Member, except the amount of his actual necessary expenses in attending the regular meetings of the Board; but each of the said Boards may appoint a Secretary from among themselves or otherwise, and may pay him a reasonable salary for his services.

XIV. The regular Meeting of the said Boards shall be held pursuant to adjournment, or be called by the Secretary at the instance of the President or the Vice-President, or upon the written request of any three Members, and at least five days' notice of such Meeting shall be given to each Member, and it shall be lawful for the Board, in the absence of the President and Vice-President, to appoint a Chairman *pro tempore*, and five Members shall be a *quorum*.

XV. It shall be the duty of the said Boards to receive the Reports of Agricultural Societies, and before granting the certificates hereinafter mentioned, to see that they have complied with the law; to take measures, with the approbation of the Minister of Agriculture, to procure and set in operation a model, illustrative or experimental farm or farms in their respective sections of the Province, and in connection with any public school, college or university, or otherwise, and to manage and conduct the same, to collect and establish, at Toronto and Montreal respectively, an Agricultural Museum and an Agricultural and Horticultural Library, to take measures to obtain from other countries animals of new or improved breeds, new varieties of grain, seeds, vegetables or other agricultural productions, new or improved implements of husbandry or new machines which may appear adapted to facilitate agricultural operations, and to test the quality, value and usefulness of such animals, grain, seeds, vegetables or other productions, implements or machines, and generally to adopt every means in their power to promote improvement in the agriculture of this Province; and the said Boards shall keep a Record of their respective transactions, and shall from time to time publish, in such manner and form as to secure the widest circulation among the Agricultural Societies and farmers generally, all such Reports, Essays, Lectures and other useful information as the said Boards respectively may procure and adjudge suitable for publication; and if the said Boards or either of them shall publish a monthly Journal, or adopt as their channel of communication with Agricultural Societies the Agricultural Journals now published in Upper and Lower Canada respectively, it shall be the duty of all Agricultnral Societies receiving any share of the Public Grant to give at least one month's notice of the time and place of holding their Exhibitions in the Journals so published or adopted by the said Boards respectively.

XVI. The said Boards shall transmit to the Bureau of Agriculture a copy of their resolutions, By-laws or other formal proceedings, immediately after the adoption thereof; and every resolution, By-Law, or other proceeding of the

said Boards respectively which may involve an expenditure of money to an amount exceeding ten pounds, shall not be passed except with the assent of a majority of the members thereof.

XVII. Each of the said Boards shall continue to be a Body Corporate, and shall have power to acquire and hold land and personal property for the purposes of its incorporation, and to sell, lease or otherwise dispose of the same.

BOARDS OF ARTS AND MANUFACTURES.

XVIII. There shall be, and there is hereby created and established, in and for Upper Canada, one Corporation or Body Corporate, to be composed as hereinafter provided, and to be and be called "The Board of Arts and Manufactures for Upper Canada."

XIX. There shall be, and there is hereby created and established, in and for Lower Canada, one Corporation or Body Corporate, to be composed as hereinafter provided, and to be and be called "The Board of Arts and Manufactures for Lower Canada."

XX. The said Corporations shall consist and be composed respectively of the Minister of Agriculture, for the time being, (who shall be *ex officio* a member of each), of the Professors of and Lecturers on the various branches of physical science in all the Chartered Universities and Colleges in Upper and Lower Canada respectively, and the Chief Superintendents in Upper and in Lower Canada respectively, for the time being, *ex officio*, the Presidents for the time being of and one Delegate from each of the Boards of Trade, and the Presidents of and Delegates from each of the incorporated Mechanics' Institutes, or of any incorporated Arts Associations qualified as hereinafter mentioned, in Upper and Lower Canada respectively, such Delegates to be chosen annually as hereinafter is provided.

XXI. The said Corporations shall have power to acquire and hold real or immoveable property, for the purposes of the Corporation, and may sell, exchange, lease or otherwise dispose of or depart with the same, from time to time.

XXII. The Board of Trade in each City and Town in Upper Canada, shall, at its first meeting after the first day of July next, and thereafter at its first meeting in the month of January in each and every year, elect and accredit to the Board of Arts and Manufactures for Upper Canada, one of its body as a member thereof.

XXIII. The Board of Trade in each City and Town in Lower Canada, shall, at its first meeting after the first day of July next, and thereafter at its first meeting in the month of January, in each and every year, elect and accredit to the Board of Arts and Manufactures for Lower Canada one of its body as a member thereof.

XXIV. Each incorporated Mechanics' Institute in Upper and Lower Canada respectively, shall, at its first meeting after the first day of July next, and thereafter at its first meeting, in the month of January, in each and every year, elect and accredit to the Board of Arts and Manufactures in Upper or Lower Canada respectively, (according as its place of meeting is in Upper or Lower Canada,) one delegate for every twenty members on its roll, being actual working mechanics or manufacturers, and having paid a subscription of at least five shillings each, to its funds for the year then last past; Provided always, that no such Mechanics' Institute shall be entitled to elect and accredit any such delegate to the Board of Arts and Manufactures, unless it shall have paid and contributed to the funds of such Board, at least one tenth of the amount of Government aid granted to such Institute during the year then last past.

XXV. The Auditor shall transmit to the Boards of Arts and Manufactures for Upper and Lower Canada respectively, in the month of March, in each and every year, statements of the number of Members on the Books, and the revenue, exclusive of Provincial aid, of each Mechanics' Institute, in Upper or Lower Canada respectively.

XXVI. The names of the Delegate so elected shall be forthwith transmitted by the Secretary of the Board or Institute electing them, to the Secretary of the Board to which they are elected, who shall thereupon inscribe their names upon the Roll of Members of the said Board, for the year then about to commence; Provided always, that together with such names when transmitted by the Secretary of a Mechanics' Institute, there be transmitted a statement verified by the oath of the Secretary transmitting the same, to be taken before a Justice of the Peace, of the names of all the members on the roll of such Mechanics' Institute, being actual working mechanics or manufacturers, and having paid subscriptions of at least five shillings each to its funds, for the year then last past; and if it shall appear, either by the said statement or by that transmitted by the Auditor, that any such Mechanics Institute has elected too many Delegates, then the Secretary of the Board shall abstain from recording any of the names of the Delegates of such Mechanics' Institute, and shall submit the matter to the Board at its first meeting; and it shall be lawful for the said Board, if they see fit, to adjudge that such Mechanics' Institute shall not be entitled to any Delegate for the year then next, or otherwise to decide by vote or ballot which Delegate or Delegates thereof shall be rejected; and in this latter case the names of the remaining Delegate or Delegates shall be forthwith inscribed by the Secretary of the said Board on the Roll of the Members thereof, for the year then about to commence.

XXVII. It shall be the duty of the said Boards of Arts and Manufactures to take measures, with the approbation of the Minister of Agriculture, to collect and establish at Toronto and Montreal respectively, for the instruction of practical mechanics and artizans, museums of minerals and other material substances and chemical compositions, susceptible of being used in Mechanical Arts and Manufactures, with model rooms appropriately stocked and supplied with models of works of art, and of implements and machines other than implements of husbandry and machines adapted to facilitate agricultural operations, and free libraries of reference, containing books, plans and drawings, selected with a view to the imparting of useful information in connection with Mechanical Arts and Manufactures, to take measures to obtain from other countries new or improved implements and machines, not being implements of husbandry or machines specially adapted to facilitate agricultural operations, to test the quality, value and usefulness of such implements and machines, and generally to adopt every means in their power to promote improvement in the Mechanical Arts and in Manufactures in this Province; and the Minister of Agriculture may cause duplicates or copies of models, plans, specimens, drawings and specifications deposited in the Patent Office, and upon which Patents of Invention have issued, to be made, from time to time, and placed in the Model Rooms, Museums or Libraries of the said Boards of Arts and manufactures respectively; and it shall be lawful for the said Boards respectively, with the consent and approbation of the Minister of Agriculture, to establish in connection with their respective Museums, Model Rooms or Libraries, Schools of Design for Women, on the most approved plan, and furnished and supplied in the most complete and appropriate manner, that the funds at their disposal may admit of, regard being had to the claims thereon of the other objects for which they are hereby established; and also to found Schools or Colleges for Mechanics, and to employ competent

persons to deliver lectures on subjects connected with the Mechanical Arts and Sciences or with Manufactures; and the said Boards shall keep Records of their respective transactions, and shall from time to time publish, in such manner and form as to secure the widest circulation among the Mechanics' Institutes and among Mechanics, Artizans and Manufactures generally, all such Reports, Essays, Lectures and other Literary compositions conveying useful information as the said Boards respectively may be able to procure, and judge to be suitable for publication.

XXVIII. The said Boards of Arts and Manufactures shall respectively have power and authority to make and ordain such By-laws, Rules, Orders and Regulations, not being contrary to this Act, or to the laws of this Province, as may be deemed necessary, touching the disposition and management of their funds, property and affairs, and the execution of the duties and powers intrusted to them by this Act, and the same from time to time to repeal or alter and make others in their stead; and copies of all such By-laws, Rules, Orders and Regulations, and of the minutes of all the proceedings of the said Boards, shall be transmitted forthwith after they are made to the Bureau of Agriculture.

XXIX. The said Boards of Arts and Manufactures shall meet at the Cities of Toronto and Montreal respectively, four times in every year, that is to say, on the first Tuesday in each of the months of January, April, July and October, provided such Tuesday be not a holiday, in which case the meeting shall take place the next day thereafter, not being a holiday; and it shall be the duty of the President of either of the said Boards, and in his absence from the Province, or in the case of a vacancy in the office of President, then of the Vice-President, whenever he may deem it necessary or be required, by any ten members thereof so to do, to call a special meeting of the same, in the interval between any two quarterly meetings; Provided always, that such special meeting shall not take place until seven clear days after a written or printed notice signed by the Secretary of the Board, and specifying the day, hour and place of meeting, and the object or objects for which the same is called, shall have been mailed to the address of each member of the Board.

XXX. Each of the said Boards shall, at its quarterly meetings in January, in each and every year, elect from among its members a President, Vice-President and a Secretary and Treasurer, to hold office for the ensuing year, or until the election of their successors, and shall and may appoint a Sub-committee of not less than five nor more than nine of their number for the management during the year of such affairs of the Board as may by any By-law be entrusted to to them; and the President and Vice-President shall be *ex-officio* members of such Sub-committee, and a majority of the members of such Sub-committee shall be a quorum for the transaction of business; and in case of a vacancy occurring in any of the said offices in the course of the year, either by death or resignation, such vacancy may be filled up by election as aforesaid, at any quarterly meeting, or at a meeting specially called for that purpose: Provided that each such Board may be organized during the present year at any time and place to be named by the Minister of Agriculture, of which public notice shall have been previously given by the said Minister, in such manner and for such time as he may approve, and the officers appointed at such time and place so to be named by the said Minister, shall hold office until the election of their successors in January next.

AGRICULTURAL ASSOCIATIONS.

XXXI. The Members of the Boards of Agriculture and of the Boards of Arts and Manufactures, the Presidents and Vice-Presidents of all lawfully organized County Agricultural Societies, and of all Horticultural Societies, and all sub-

scribers of Five Shillings annually, to the funds of any such Society, shall in their respective sections of the Province, be and constitute an Agricultural Association for that section.

XXXII. The Members of the Board of Agriculture and of the sub-Committee of the Board of Arts and Manufactures, and the Presidents and Vice-Presidents of County Societies, and of all Horticultural Societies, (or any two members whom a County or Horticultural Society may have appointed Directors instead of its President and Vice-President,) shall be the Directors of such Agricultural Association; and it shall be lawful for the Agricultural Association to elect a Treasurer.

XXXIII. The said Associations shall each hold an Annual Fair or Exhibition, which shall be opened to competitors from any part of the Province, and the said Directors shall hold an annual meeting during the Week of the Annual Exhibition, and may at such meeting elect a President and Vice-Presidents, and appoint the place for holding the next meeting and Exhibition of the Association, and may make rules and regulations for the management of such Exhibition, and may appoint a local Committee, at the place where such exhibition is appointed to be held, and prescribe the powers and duties of the said Committee.

XXXIV. The Board of Agriculture, with whom shall for this purpose be associated the President and Vice-President of the Board of Arts and Manufactures, or any two persons from time to time named by the said Board in place of such President and Vice-President, shall be the Council of the Association, with full power to act for and on behalf of the Association between the annual meetings thereof; and all grants of money, subscriptions, or other funds made or appropriated to or for the use of the Association, (except money collected by or granted by any local Committee for the local expenses of an Exhibition) shall be received by and expended under the direction of the said Board as such Council, and the Secretary of the Board, together with the Secretary of the Board of Arts and Manufactures, shall be *ex-officio* joint Secretaries of the Association.

XXXV. All contracts and all legal proceedings by, with, or concerning the Association, shall be made and had with the Board of Agriculture, so constituted as such Council, in its Corporate capacity, and no other contracts, agreements, actions or proceedings shall bind or affect the Association.

XXXVI. It shall be lawful for the Municipality of any City, Town, Village, County or Township in this Province, to grant money or land in aid of the Agricultural Association for that part of the Province to which the Municipality belongs, or of any Agricultural or Horticultural Society whatever duly organized under this Act, or of any incorporated Mechanics' Institute, within the limits of such Municipality.

AGRICULTURAL SOCIETIES, UPPER CANADA.

COUNTY OR ELECTORAL DIVISION SOCIETIES.

XXXVII. An Agricultural Society may be organized in each of the Electoral Divisions of Upper Canada in which there is not one embracing the limits of such electoral division already organized at the date of the passing of this Act, whenever fifty persons shall become Members thereof by signing a Declaration in the form of the Schedule A to this Act annexed, and paying each not less than five shillings annually to the Funds of the said Society; and a true copy of the said Declaration shall (within one month after the money has been so paid) be transmitted to the Board of Agriculture.

XXXVIII. The object of the said Societies, and of the Township or Branch Societies in connection therewith, shall be to encourage improvement in Agriculture or Horticulture, or both, by holding Meetings for discussion, and for hearing Lectures on subjects connected with the theory and practice of improved Husbandry, by promoting the circulation of the Agricultural Periodicals published in the Province, by importing or otherwise procuring Seeds, Plants and Animals of new and valuable kinds, by offering prizes for Essays on Questions of Scientific Enquiry relating to Agriculture or Horticulture, Manufactures and Works of Art, and by awarding Premiums for excellence in the raising or introduction of Stock, the invention or improvement of Agricultural or Horticultural Implements and Machines, the production of grain and of all kinds of vegetables, plants, flowers and fruits, and generally for excellence in any Agricultural or Horticultural Production or Operation, Article of Manufacture or Work of Art; and it shall not be lawful to expend the Funds of the Societies, derived from subscriptions of Members, or the Public Grant, for any object inconsistent with those above mentioned; and the Directors of every such County Society at any meeting which shall be called by written notice as hereinafter mentioned, and in which notice the object of the meeting shall have been specified, shall have full power to make, alter and repeal By-laws and Rules for the regulation of such Society and the carrying out of its objects.

XXXIX. The said Societies shall hold their Annual Meetings in the third week in the month of January, in each year, and shall at such Meeting, elect a President, two Vice-Presidents, a Secretary and Treasurer, aud not more than seven Directors.

XL. The Presidents of the several Township Agricultural Societies, and also the Presidents of Mechanics' Institutes receiving Government aid, and of Boards of Trade, (or any other person appointed by such Society, Institute or Board, in the place of such President,) within the County, shall, in addition to those before named, be *ex-officio* Directors of the County Society: Provided, that each such Township Society and Mechanics' Institute shall have contributed two pounds ten shillings annually to the funds of the County Society; and the said Officers and Directors shall and may for the year next following the annual Meeting, and until the election of their successors, exercise all the powers vested in the County Society by this Act.

XLI. The Meetings of the Officers and Directors shall be held pursuant to adjournment, or called by written notice to and given by authority of the President, or in his absence the Senior Vice-President, at least one week before the day appointed; and at any Meeting five shall be a quorum.

XLII. The said Officers and Directors shall in addition to the ordinary duties of management, cause to be prepared, and shall present at the Annual Meeting, a Report of their proceedings during the year, in which shall be stated the names of all the Members of the Society, the amount paid by each set opposite his name, the names of all persons to whom Premiums were awarded, the amount of such Premiums respectively, and the name of the Animal, Article or thing in respect of which the same was granted, together with such remarks and suggestions upon the Agriculture and Horticulture of the County, and Arts and Manufactures therein, as the Directors shall be enabled to offer; there shall also be presented to the said Annual Meeting, a detailed statement of the receipts and disbursements of the Society during the year, which Report and Statement, if approved by the meeting, shall be entered in the Society's Journal, to be kept for such purposes, and signed by the President or a Vice-President as being a correct entry; and a true copy thereof certified by the President or Secretary

for the time being, shall be sent to the Board of Agriculture, on or before the first day of April following.

XLIII. The County Society shall receive the Reports of the Township or Branch Societies, and shall transmit them to the Board of Agriculture, with such remarks thereon as may enable the said Board to obtain a correct knowledge of the progress of Agricultural Improvement in the County.

XLIV. It shall be the duty of the said Officers and Directors to answer such queries and give such information as the Board of Agriculture, or Minister of Agriculture, may from time to time, by Circular Letter, or otherwise, require, touching the interests or condition of Agriculture in their County, and generally to act as far as practicable upon the recommendations of the said Board.

TOWNSHIP SOCIETIES.

XLV. A Township or Branch Agricultural Society may be organized in each Township in Upper Canada in which there is not one already organized at the date of the passing of this Act, or in any two or more such Townships together, whenever a sufficient number of persons, not less than twenty-five, shall become Members, by signing a declaration in the form of the Schedule A to this Act annexed, and subscribing a sum not less than ten pounds annually to the funds thereof; and a true copy of the said Declaration certified by the President or Vice-President of such Society, shall be forthwith transmitted to the County Society.

XLVI. The said Societies shall hold their Annual Meeting in the second week of the month of January in each year, and shall elect a President, Vice-President, Secretary and Treasurer, and not fewer than three or more than nine Directors.

XLVII. The said Officers and Directors shall prepare and present to the Annual Meeting of the Society, a Report of their proceedings during the year, in the same manner as hereinbefore directed for County Societies, and containing information under the same heads; and shall transmit a true copy thereof, certified by the President or Vice-President, to the Secretary of the County Society, in time for the Annual Meeting thereof in the third week of January.

HORTICULTURAL SOCIETIES.

XLVIII. Any number of persons, not less than twenty-five, may organize and form themselves into a Horticultural Society for any City, Town, Village, Township or Parish, or union of two or more thereof together, either in Upper or Lower Canada, by signing a declaration in the form of Schedule A to this Act annexed, but with the necessary alteration as to the name of the Society, and subscribing a sum of not less than ten pounds annually to the funds thereof.

XLIX. Such declaration shall be in duplicate and one part thereof shall be written and signed on the first page or pages of a book to be kept by the said Society for recording the minutes of its proceedings during the first year of its existence, and the other part thereof shall be written and signed on a sheet of paper or parchment and shall forthwith be sent by Post to the Minister of Agriculture, who shall as soon as may be after the receipt thereof, cause a notice of the formation of such Society to be inserted in the *Canada Gazette*.

L. Upon, from and after the insertion in the *Canada Gazette* of the notice of the formation of any such Society as aforesaid, the same shall become and be a body corporate and politic for the objects and purposes hereinafter mentioned, by the name applied to it in such notice, which shall be the same as that in the declaration transmitted by such Society, and shall have power to acquire and hold, lease, mortgage and alienate property real and personal for the purposes of such Society.

LI. Every Horticultural Society incorporated under this Act shall have power to make By-laws, not being contrary to the laws of this Province or to this Act, for prescribing the mode of admission of new Members and election of Officers, and otherwise regulating the administration of its affairs and property.

LII. Every such Society shall hold a meeting in the first week of the month of February, in each year, besides meetings at such other times as may be prescribed or provided for by its By-laws; and at such annual meeting a President, a Vice-President, a Secretary and Treasurer, and not fewer than three nor more than nine Directors, shall be elected.

LIII. The said Officers and Directors shall prepare and present to the annual meeting of the Society a report of their proceedings during the year, in the same manner as hereinbefore directed for County Agricultural Societies, and containing information under the same heads, save and except those which relate to Agriculture, the objects and purposes of such Societies being the same as those of Agricultural Societies, as hereinbefore mentioned, but with reference to Horticulture only.

GENERAL PROVISIONS.

LIV. The Exhibition of the County Society shall be held wherever the majority of the Directors or of a quorum thereof shall think fit, giving due and public notice thereof; and it shall be lawful for two or more County and Township Societies, by agreement between the Directors thereof or a majority of Directors in each such Society, to unite their Funds, or any portion thereof, for the erection of suitable buildings in which to exhibit articles of produce or manufacture, or works of art, or for annual or extra shows, or for ploughing matches, or for any other purpose likely to promote the welfare of any one or more Counties or Townships, in Agriculture, Horticulture, Arts or Manufactures, and to acquire by purchase or lease and hold sufficient land for this purpose from time to time, and the same to exchange and sell.

LV. Whenever the President and Secretary of the Board of Agriculture shall certify to the Minister of Agriculture that any County Society has sent to the said Board Reports and Statements as required by this Act, for the year then last previous, and shall also certify that the Treasurer or other Officer of the said Society, has transmitted to the said Board an Affidavit, which may be in the form of the Schedule B to this Act annexed, and may be sworn to before any Justice of the Peace, who is hereby authorized to receive the same, stating the amount subscribed for that year and paid to the Treasurer of the County Society by the members thereof, and by the several Township Societies of the said County, it shall be lawful for the Governor of this Province to issue his warrant in favor of such County Society for a sum, to be taken out of any unappropriated moneys in the hands of the Receiver General, equal to three times the amount appearing by the said affidavit to be in the hands of the Treasurer: Provided, that no grant shall be made unless twenty-five pounds be first subscribed and paid to the Treasurer; And provided also, that the whole amount granted to any such Electoral Division Society shall not exceed two hundred pounds in any year—save and except that each of the Counties of Lennox and Addington, Huron and Bruce, separately, shall be entitled to receive a sum not to exceed two hundred pounds, on the conditions specified in this Act, and that the Counties of Prince Edward, Welland, Haldimand, Grey, Halton, Kent, Carleton, Essex, Lambton, Lincoln, Norfolk, Peel and Perth, shall each and every of them be entitled to receive as heretofore a sum not exceeding two hundred and fifty pounds in any year, and on the conditions aforesaid.

LVI. The Electoral Divisions designated in the said Representation Act, sixteenth Victoria chapter one hundred and fifty-two, as numbers twenty-one, twenty-two, twenty-three, twenty-four, twenty-five, twenty-six, twenty-seven and twenty-eight, shall each be entitled to receive a sum not exceeding one hundred pounds for the encouragement of Horticulture, Agriculture, Manufactures and works of Art within their respective limits: Provided always, that a full equivalent for the sum to be so paid by the Government, be subscribed and paid to the Treasurer of a Society to be formed within such Electoral Division, in the same manner as County Agricultural Societies under section thirty-seven of this Act, to be called "The Society for the Upper Canada Electoral Division, No. 21," or as the case may be.

LVII. Every Township or Branch Society, organized according to the Act hereby repealed or to this Act, and sending a report of its proceedings to the County Society, as hereinbefore required, shall be entitled to a share of the grant to the County Society, in proportion to the amount which shall have been subscribed by the members of such Township or Branch Society, and deposited with the Treasurer of the County Society, on or before the first day of May, in each year, as compared with the amounts so deposited by the other Township and Branch Societies of the County; and the sum so deposited by any Township or Branch Society shall be repaid, along with its share of the public grant, so soon as the said grant shall have been received by the County Society: Provided always, that three-fifths and no more of the sum so received by any County Society shall be subject to division among Township or Branch Societies; And provided that the declaration mentioned in section forty-five shall be deemed a sufficient report for the first year in which any Township or Branch Society may have been organized and that no Township or Branch Society shall thus receive more than three times the amount so deposited by it as aforesaid; And provided, that nothing in this Act contained shall be construed as admitting any member of a Township Society, in virtue of his subscription thereto, and without further subscription to the County Society, to any of the privileges of a member of such County Society.

LVIII. The Board of Agriculture shall receive from Government, and pay over to the County Societies, the public grants to which they are respectively entitled; and it shall be lawful for the said Board to retain, for the use of the Agricultural Association, one tenth part of all such grants.

LIX. Any Treasurer or other officer of any County, Township or Branch Society, who shall make affidavit that a subscription, or any sum of money, has been paid to him for the Society, when it has not been so paid, or who shall return any such subscription, shall forfeit and pay to Her Majesty the sum of ten pounds for every such offence, and shall be guilty of perjury and be held liable to all the penalties with which the law may visit that crime.

LX. The several County Societies organized according to the provisions of this Act, or of the said Act or of any Act thereby repealed, shall be and continue Bodies Corporate, with power to acquire and hold land as a site for Fairs and Exhibitions, or for a School-Farm, and to sell, lease, or otherwise dispose of the same; and any Township or Branch Society lawfully organized as aforesaid, may at any regular Meeting adopt a Resolution that the said Society is desirous of being incorporated, and upon filing the said resolution with the Secretary of the Board of Agriculture, such Society shall thenceforth be and become a Body Corporate, and shall have like powers with County Societies.

LXI. It shall and may be lawful for any County or Township Society, or the Municipal Council of any County or Township of Upper Canada, to purchase and hold land for the purpose of establishing a School-Farm to instruct pupils in the science and practice of Agriculture, and any Society and any Municipal Council

may purchase and hold such School-Farm conjointly or otherwise make all necessary rules and regulations for the management thereof, provided that not more than one hundred acres of land shall be so held by any Society or Council, whether conjointly or otherwise.

LXII. Wherever the word "County" shall occur in this Act, it shall be held to mean "Electoral Division," except where such construction is inconsistent with the express enactment in which such word is used, and the words "Electoral Division" whenever used herein shall mean a Division for purposes of representation in the Legislative Assembly.

LXIII. In case there should be any property real or personal, in any one or more of the Electoral Divisions, which property originally belonged to the County Society of the County of which the said Electoral Division formed a part, the said property or the value thereof shall be equitably apportioned or divided by Arbitrators or a majority of them, one to be appointed by the Directors of the Society in each such Electoral Division, and another Arbitrator to be chosen by the Arbitrators so appointed.

LXIV. The provisions of this Act with regard to Grants and Electoral Division, conditions of Grant, &c., &c., shall extend to any new Counties or new Electoral Divisions, which may hereafter be formed in Upper Canada; Provided always, that no new Electoral Division shall be entitled to more than two hundred pounds.

LXV. The first Meeting for the formation of Electoral Division Societies under this Act, shall be called by the Warden of the County or Union of Counties in the third week of the month of January in each year, at which Meeting the Election of the various Officers shall take place, and the Society so organized shall be esteemed the Electoral Division or County Society, and shall be entitled to receive the Government Grant hereinbefore provided; and all subsequent Annual Meetings after the first Meeting shall be called and held as provided in the thirty-ninth section of this Act.

SCHEDULE A.

We, whose names are subscribed hereto, agree to form ourselves into a Society, under the provisions of the Act of the Legislature, (*title and date of this Act*), to be called the "County (Township *or* Branch *as the case may be*,) Agricultural Society of the County of " (*or* Township of); and we hereby severally agree to pay to the Treasurer yearly, while we continue Members of the Society, (any member being at liberty to retire therefrom upon giving notice in writing to the Secretary, at any time before the annual meeting, of his wish so to do,) the sums opposite our respective names, and we further agree to conform to the Rules and By-Laws of the said Society.

NAMES.	£	s.	d.

SCHEDULE B.

County of }
to wit: }

I, A. B., of the Township of , Treasurer of the County Agricultural Society of , make oath and say, that the sum of has been paid into my hands, since the first day of February last, by the Township Agricultural Societies of the said County, as and for the Members' Subscription for this year; and the sum of has been paid into my hands, as subscriptions for this year, by members of the said County Society; and that the said sums, making in the whole the sum of , now remain in my hands, ready to be disposed of, according to law.

Sworn to before me }
this day of }
A. D. 185 . }

A. B

C. D.
Justice of the Peace for the
County of

MEETING OF THE BOARD OF AGRICULTURE.

TORONTO, Tuesday, March 23, 1858.

A meeting of the Board was held this day, pursuant to notice from the Secretary, at 11 a. m., at the office, Toronto.

Present: E. W. Thomson, Hon. A. Fergusson, D. Christie, H. Ruttan, A. A. Burnham, R. L. Denison, G. Alexander, Professor Buckland; D. B. Stevenson, President of the Provincial Agricultural Association; Rev. Dr. Ryerson, Chief Superintendent of Education, C.W.; W. B. Jarvis, President of the Board of Arts and Manufactures; Dr. Beatty, Vice-President of do.

This being the first meeting of the Board since the election, by vote of the County Societies at their Annual Meeting, of new members in lieu of those retiring by rotation, Professor Buckland, Secretary, was called to the chair.

The Secretary read the official notice, stating that the following retiring members had been re-elected, viz:—Messrs. E. W. Thomson, R. L. Denison H. Ruttan; and that Mr. Geo. Alexander, Woodstock, had been newly elected as a member of the Board.

It was then moved by Hon. Adam Fergusson, seconded by Mr. Christie, That Mr. Thomson be President of the Board of Agriculture for the year 1858. Carried.

The President elect then took the chair.

Moved by Mr. Stevenson, seconded by Mr. Burnham, That Mr. Ruttan be Vice-President of the Board for the ensuing year. Carried.

The minutes of last meeting were then read and approved.

The Secretary read a communication from Mr. Wm. Ferguson, of Kingston,

1st Vice-President of the Agricultural Association, stating that Mr. J. B. Marks could not attend the Meeting of the Board, he having departed on a visit to Europe.

The Secretary stated that he had information that the Exhibition of the New York State Agricultural Society would commence at Syracuse, on Tuesday, 5th October next, and he also read a communication from the Secretary of the Lower Canada Board of Agriculture, stating that their Show would commence on Tuesday, 28th September, at Montreal.

The Secretary read a communication from Mr. Peter R. Lamb, of Toronto, in reference to his manufacture of crushed bones for manure, urging the desirableness of the article being brought into general use, requesting the Board to purchase from him four hundred dollars worth, to be distributed as they might think fit; and that he would add to the amount purchased, as a bonus, one hundred dollars worth to be distributed in like manner; the prices at which he sold the article, were: for the fine quality, or bone dust, 60c per bushel, for the second quality, or half-inch bones, 50c, and for third quality, or inch bones 40c per bushel. These prices, Mr. Lamb stated, were as low as the prices of the same article in Great Britain or the United States, and with the bonus he proposed to give the Board, the charge per bushel would of course be 20 per cent. less.

Mr. Lamb's communication was taken into consideration, and after some discussion, the further consideration deferred till the next day.

The Secretary presented a communication from Mr. Cull, of the Canada Company Office, in reference to the means of preventing the increase of the Wheat Fly, which was deferred for consideration till next day.

The Board adjourned from half-past 1 till half-past 2.

The time for holding the next Provincial Exhibition was then discussed.

Moved by Hon. Mr. Fergusson, seconded by Mr. Stevenson, That the Exhibition be held this year on the 12th, 13th, 14th and 15th of October.

The resolution was carried.

The Secretary read a communication from the Secretary of the Society for the Electoral Division of the City of Toronto, organized under the Act, 20th Vic., cap. 32, stating that that Society had resolved to give the whole of their funds for the current year in aid of the next Provincial Exhibition, and submitting the names of certain persons whom the Society considered suitable to be placed upon the Local Committee.

On motion, the following named persons were then appointed to constitute the Local Committee:—

The Mayor of the City of Toronto,
The Warden of the Counties of York and Peel,
The Sheriff of the Counties of York and Peel,
The President of the Toronto Mechanics' Institute,
Messrs. Geo. Leslie, A. Shaw, W. McDougall, Ald. D. B. Read, Ald. Geo.

Boomer, Ald. A. Brunel, G. T. Denison, Professor Wilson, Samuel Walton, Geo. Brown, M. P. P., J. B. Robinson, M. P. P.

After some discussion on the subject of choosing ground and erecting buildings for the next exhibition, it was agreed to defer the matter till the Board should meet and confer with a Committee of the City Council appointed for the purpose.

The Secretary presented a communication from the Central Horticultural and Agricultural Club, on the subject of drainage, requesting the co-operation of the Board and of Agricultural Societies, with a view to the passing by Parliament of a General Drainage Act, and the granting of a sum of money from the public funds, to be loaned to the owners of land, under proper restrictions, to carry out drainage operations on the modern system.

Some conversation took place on this subject, and the Board then adjourned till 10 a. m. the next day.

WEDNESDAY, March 24.

The Board met, pursuant to adjournment.

Present: Messrs. E. W. Thomson, President; H. Ruttan, Vice-President; G. Alexander, A. A. Burnham, R. L. Denison, Hon. A. Fergusson, Professor Buckland, D. Christie, D. B. Stevenson, W. B. Jarvis, Dr. Beatty.

The minutes of previous day were read and confirmed.

Mr. Alexander entered into an explanation of the question in dispute with the contractors for the supply of lumber for the Exhibition at Brantford, stating that strong presumptive evidence existed that bills had been rendered by the contractors for a much larger quantity of lumber than had been supplied.

The question of the demand of the contractors for payment for the quantity delivered, or alleged to have been delivered, over and above that already paid for, having been discussed, it was

Resolved,—That inasmuch as the Board are well assured that more lumber has already been paid for than the Association were liable for, the demand for further payment be resisted, and that Mr. Alexander be authorised to relinquish the claim upon the building, upon Lorimer & Hunter, the contractors for erecting the buildings and fences, giving satisfactory security that no further demand will be made upon the Association for lumber, or any other matter connected with the buildings.

Mr. Buckland stated a case in dispute between two organizations, each claiming to be the legally organized Electoral Division Society for the South Riding of the County of Grenville. Mr. Pardie, Treasurer of the Society organized at North Augusta, being in attendance as representative of that Society, had permission to address the Board, and stated that the Society he represented had been legally constituted in 1857, as the County Agricultural Society of Grenville, under the Act 16th Vic., cap. 11, and that the members thereof being

principally resident in the South Riding, did not conceive that any new organization was necessary under the Act 20th Vic., cap. 32, but claimed to be recognized as the legal Society for the South Riding.

After some consideration, the Board came to the conclusion that they had no jurisdiction in the premises.

Moved by Mr. Burnham, seconded by Mr. Christie, and

Resolved,—That Messrs. Thomson, Alexander, and Denison be a Committee on behalf of this Board to settle all matters in dispute in connection with the Show held at Brantford last fall.

Mr. Denison moved to rescind the resolution passed yesterday, fixing the time for holding the Fair of 1858, when

A Committee from the City Council, consisting of Messrs. D. B. Read, G. Boomer, A. Brunel, J. Ritchie and J. Upton, appeared before the Board to consult in reference to procuring ground and erecting buildings for the Exhibition, and also, if possible, to arrange for the erection of permanent buildings.

After some conversation, and arranging for a Committee of the Board, together with the Committee of Council, to wait upon the Provincial Government in reference to procuring the land required, the Committee withdrew.

Moved by Mr. Denison, That Mr. Ald. Ritchey be added to the Local Committee. Carrried.

Mr. Ellis, of Prescott, then appeared before the Board and obtained leave to address the Board in reference to the dispute between the two bodies claiming to be the South Riding of Grenville Agricultural Society. He stated that the Society which he represented had been organized in January 1858, under the provisions of the Act 20 Vic., cap. 32, pursuant to public notice given by the Warden of the United Counties of Leeds and Grenville, and that it claimed to be the legally constituted Society for that Riding. Mr. Ellis then withdrew.

It was then moved and

Resolved,—That the resolution passed, yesterday, naming Tuesday, 12th October, for the first day of the Provincial Agricultural Exhibition be rescinded, and that Tuesday, 28th September, be the first day.

Resolved,—That five members of this Board be appointed a Committee to accompany the Committee of the Toronto City Corporation, on Walks and Gardens, to confer with the Government upon the subject of obtaining ground from the Garrison Reserve for the purposes of the Provincial Agricultural Association, and that the President, Secretary and Treasurer of the Board of Agriculture, the President of the Agricultural Association, and the President of the Board of Arts and Manufactures, be such Committee.

Mr. Lamb was admitted and obtained leave to address the Board in reference to his manufacture of bone manure, and his proposal to supply the Board with a quantity for distribution.

Resolved,—That the sum of twenty-five pounds be paid Mr. John Wade' for his plans and valuable services in connection with the Brantford show.

The subject of the trial of implements annually, in connection with, or previous to, the exhibitions was then introduced and discussed.

The Board adjourned at 1 45 p.m. to 3 p.m.

On re-assembling the discussion on the trial of implements was resumed.

A deputation from the Board of Arts and Manufactures then appeared before the Board, consisting of Mr. Pell and Mr. Hay, and stated that the object proposed by the deputation was to bring about a union between the Board of Agriculture, the Board of Arts and Manufactures, and the Canadian Institute, for the purpose of forming a museum and library common to all. It was agreed to appoint a committee to confer upon the matter, and the deputation then withdrew.

A communication was received from Mr. Alderman Read, stating that Mr. Attorney General Macdonald had expressed a wish that the deputation from the Board and from the City Council should meet the Minister of Agriculture, in reference to obtaining lands for the exhibition, next day at noon.

The discussion in regard to the trial of implements was resumed, and it was—

Resolved—That the President, Treasurer, and Secretary be a committee to appoint the time and place on the line of some railway, and also to appoint the judges for the trial of mowing and reaping machines; and that the decision of the judges be submitted to the Agricultural Association at the Provincial Exhibition next Fall, and that no premium be awarded to any machine that has not been submitted to such trial.

Mr. Wm. McDougall appeared, and proposed to the Board to purchase from him the good-will of the *Agriculturist* paper, offering to take in consideration therefor, half the proceeds of the publication for two years.

The question having been discussed, it was—

Resolved—That it is desirable for the Board of Agriculture to obtain control of the *Agriculturist*, as a medium for communicating with the public, and with that view a committee be appointed to confer with Mr. McDougall for the purchase of the same. The committee to be Messrs. Buckland, Denison, and Alexander, and to report to the Board to-morrow.

Resolved—That this Board regards favourably the proposal made by a committee from the Board of Arts and Manufactures, for the establishment of a Museum common to the Boards and the Canadian Institute; and that the President, Secretary, and Treasurer be a committee to confer with the committees of the Board of Arts and Manufactures and of the Institute for the accomplishment of this object.

Mr. Alexander introduced the subject of offering prizes for essays on different subjects of interest to the farmer or others, and urged the desirableness of so doing.

After some consideration of this matter the Board adjourned at half-past 5 to 9 a.m., the following day.

THURSDAY, March 25.

The Board met at 9 a.m.

Present: Messrs. Thomson, Ruttan, Fergusson, Alexander, Denison, Christie, Burnham, Buckland, Stevenson, Jarvis, Beatty.

The minutes of previous day having been read and approved, it was moved by Mr. Alexander, and—

Resolved—That premiums be inserted in the Prize List for essays upon the following subjects:—

1st. For the best Essay illustrating the Practical Adaptation and Money value of Science to the Canadian farmer, $60; second best, $40.

2nd. For the best Essay on Practical Agriculture, showing to what extent improved systems of Husbandry may be introduced into this Province with profit and advantage—to be written by a practical farmer—$60; second best, $40.

3rd. For the best Essay on Fruit Culture, illustrating the best and most certain method of raising the finer grafted fruits, tracing the causes of the losses of fruit sustained in some districts, and showing what kinds can be grown with success—the essay to be founded upon a practical knowledge of facts—$60; second best, $40.

The competitors for the above essays to be residents of Canada. The essays to be sent to the Secretary of the Board of Agriculture, on or before the 1st of September next, in order that their merits may be decided upon in time to be announced at the annual show. Mr. Buckland, Dr. Beatty, and Mr. Hutton to be the judges.

Resolved—That a committee be appointed to revise the Prize List, to consist of the following persons:—Messrs. Thomson, Denison, Buckland, the President and Vice-President of the Board of Arts and Manufactures, and the mover.

The Secretary called the attention of the Board to a resolution passed by the Central Horticultural and Agricultural Club in reference to the promotion of drainage, and stated that the club had appointed to hold another meeting for the discussion of the same subject at 2 p.m., in the Board Room.

Mr. Lamb's communication in reference to bone dust manure was again considered, and it was agreed, with the view of inducing farmers to use the article more generally, to purchase to the amount and on the terms proposed by Mr. Lamb of the fine and second fine qualities, and pay for the same when forwarded to the parties agreeing to take it. Parties to be charged the price per bushel which the whole quantity, adding Mr. Lamb's bonus, would cost the Board per bushel.

Moved by Mr. Dension and

Resolved—That the Board do engage for offices—the lease of the present offices being about to terminate—certain rooms on King Street West, the property of Mr. J. E. Pell, to commence occupation on the 1st April next, and that the President, Secretary, and Treasurer be a committee to arrange for the same.

The Board adjourned at 12 o'clock, to join a committee of the City Council in a deputation to confer with the Minister of Agriculture, in reference to grounds for the exhibition, and to meet again in the Board Room at 2 p.m.

PRESENTATION.

The Board met again at 2 p.m., the Minister of Agriculture, the Mayor of the City, and a considerable number of other persons also being present, to witness the presentation of a testimonial to the President of the Board. The testimonial consisted of a well executed portrait of the President, painted by Mr. Berthon, and presented by the members of the Board individually.

Mr. Ruttan, Vice-President, was requested to take the Chair.

The Hon. Adam Fergusson, on behalf of himself and the other members of the Board, then read the following address:—

To E. W. Thomson, President of the Board of Agriculture.

Sir,—The duty has devolved upon me to act for our esteemed friend, Mr. Marks; and in so far as offering a small testimony of gratitude to you, I could not have been deputed to carry out a more agreeable duty. I do regret, however, sir, that the presentation of this day should not have fallen to the lot of one better qualified than I am, to perform the duty. We all know the hearty and fervent terms in which our absent friend would have expressed himself, and all I can substitute is, an anxious hope that you will accept of the will for the deed.

You have now for a long period filled the Chair of this Board, and I know that I can with perfect safety appeal to the whole body of our farmers for a testimony of your integrity, impartiality, and zeal in promoting their interests. Your fellow laborers at the Board can alone testify to your zeal, ability and urbanity, which I assure you have strongly impressed us with regard and esteem.

We feel it beyond our ability to convey such feelings in an adequate manner; but, as a small testimony of our esteem, we beg leave to offer you a portrait of our *first* chairman, which will, no doubt, find a place upon his family walls for many generations.

To which address the President replied as follows:—

Hon. Adam Fergusson, and Gentlemen of the Board of Agriculture.

It is truly a source of regret that our esteemed friend, whom you, sir, so ably represent on this occasion, is not amongst us; but I trust and hope that the time is not distant when we shall again see him in his usual place, with recruited strength and unabated zeal in the cause we are all so anxious to promote. For of all the earnest and warm-hearted friends of Agriculture, there are none more sincerely desirous of advancing its interests than John B. Marks. But even he could not have addressed me in terms more gratifying to my feelings than you have employed. I have no ground for regret on that account, and I accept the expressions you have given utterance to with heartfelt gratification.

The duties I have been called upon to perform as President, have been rendered the more pleasing to me from the indulgence with which my shortcomings have always been treated by the Board, and from the sound judgment and earnest endeavors its members have brought to bear upon the important interests, to advance which the Board was instituted. I have to regret that I have not been able to bring to its aid a greater amount of ability. Were my abilities equal to my desire to promote the interests of agriculture, I could and would be more useful.

I rejoice, however, that my endeavors have met with the approbation of my fellow laborers. This is a circumstance at all times gratifying; and when the expression of that approbation is accompanied by so flattering a testimonial as you now present to me, it becomes doubly so. I accept the testimonial with most sincere gratitude, and trust that my descendants—while they look upon it with pride, as a memorial of the esteem in which the original was held by those who shared and were able to judge the value of his efforts—will be stimulated to exertion for the advancement of the best interests of their country.

I thank you, gentlemen, most heartily, for this token of your esteem, and shall endeavor to merit your future approbation by continued exertions for the advancement of the Agricultural interests of Canada.

The Board then adjourned till next morning, in order to give the use of the room to the Central Horticultural and Agricultural Club, to hold a discussion on the advisability of endeavoring to induce parliament to lend the credit of the country in the promotion of drainage improvements on the modern system. Several members of the Board remained and took part in the discussion, which terminated in the expression of the opinion that any legislative aid in the proposed object, would be for the present unobtainable.

FRIDAY, March 26th.

The Board met at 10.30 a.m., having previously, together with the committee of the City Council, gone to examine the portion of the garrison common in the western part of the city, proposed to be given for the use of the association.

Present: Messrs. Thomson, Ruttan, Denison, Burnham, Buckland, Beatty, Stevenson, Fergusson.

The minutes of previous day were read and approved.

The Secretary read a communication from Mr. A. Henderson, of Buffalo, N. Y., accompanied by specimens, in reference to the potato rot, stating his belief that the disease is caused by a certain small insect and suggesting a system by which he believes its depredations can be prevented. The Secretary was instructed to convey the thanks of the Board to Mr. Henderson for his interesting letter, and to communicate further with him upon the subject.

The Secretary brought Mr. Cull's communication in reference to the Wheat Fly, again before the Board, and it was agreed that the same should be published as soon as convenient in the Journal and Transactions.

Moved by Mr. Burnham, seconded by Mr. Denison, and

Resolved—That the ground bones purchased from Mr. Lamb by this Board be sold at the following prices, viz: No 1, 5s 9d; No 2, 5s 6d per bag; and that the cost of transportation be added. And that persons to whom consignments are sent will please pay the charges and get the article disposed of as early as possible, and remit the amount to R. L. Denison, Esquire, Treasurer of the Association.

The Agricultural Act, 20 Vic., chap. 32, was then discussed with a view to suggesting any amendments required in the same, and alterations proposed by the various Agricultural Societies were considered.

Moved by Mr. Denison, seconded by Mr. Ruttan, and

Resolved—That in the opinion of this Board the 56th clause of the Act 20 Vic., chap. 32, should be amended in so far as relates to the raising of pound for pound, and six shillings and eight pence in the pound should be deemed sufficient, especially when it is considered that the maximum allowed those societies is only one-half what is allowed all the others, which, under the present law, are only obliged to raise six and eight pence in the pound.

Moved by Mr. Denison, and

Resolved—That the 40th clause, after the 6th line, be amended so as to read, "Provided that each such Township Society and Mechanics' Institute shall have contributed two pounds ten shillings, or have ten subscribers to the County Society living within the limits of such Township Society," &c.

Resolved—That application be made to the Executive by the President for the privilege of franking the correspondence to and from this office.

The Board adjourned at 2 p.m., to examine a plot of land proposed to be used for the exhibition, in the eastern part of the city near the River Don, and having again assembled, it was

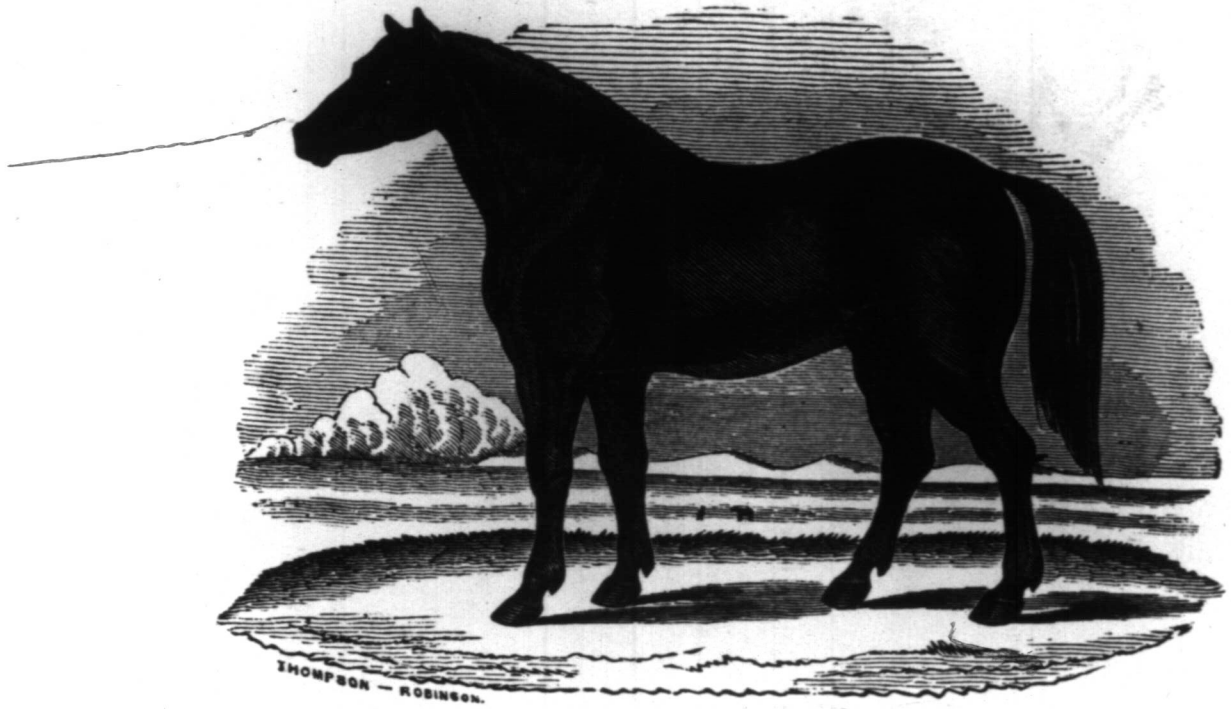
Moved by Dr. Beatty, seconded by Mr. Ruttan, and

Resolved,—That it is the opinion of this Board, after a full examination of the several pieces of ground offered for the exhibition, that the ground on the Garrison Common, south of the Lunatic Asylum, is the most suitable, if available.

A communication was received from the Board of Arts and Manufactures, enquiring whether an amount equal to that of last year would be appropriated in the prize list to premiums on Manufactures, Ladies' Work, and the Arts.

Resolved,—That the amount offered in the prize list in the classes of the Fine Arts, Ladies' Work, Manufactures, &c., be at least equal to that offered in 1857, and the Board of Arts and Manufactures be requested to revise that portion of the list as soon as convenient, and transmit it to the Secretary of this Board, to be published along with the other portions of the Prize List of the Association.

The Board then adjourned.



"WAGON SHAKER."

Winner of Third Prize as a Stallion for Agricultural purposes, at the Provincial Exhibition, Toronto, 1858. The property of Wm. Chirrey, Markham. *See page* 175.

ESSAY—ON HESSIAN FLY, WHEAT MIDGE, AND OTHER INSECTS INJURIOUS TO WHEAT CROPS.

BY THE REV. GEO. S. J. HILL, B.A., RECTOR, MARKHAM.

"Mox et frumentis labor additus."

[The following Essay, which received the Second Prize (£25) in 1857, offered by the Bureau of Agriculture, has been placed by that department at the disposal of the Board for publication.]

CHAPTER I.

INSECTS DESTRUCTIVE TO THE WHEAT CROP.

CONTENTS:

Importance of the subject proposed.—One worthy of the attention of a wise and paternal Government.—The best means of increasing qualified Observers.—European Governments have taken similar steps.—Exertions of Privy Council in England regarding Hessian Fly in 1788.—Premium offered by French Government in 1785.—By Society of Arts in London.—Angoumois Moth.—French Commissioners appointed concerning it.—Difficulty of investigating such subjects from the ignorance of those suffering most from Insects.—The name "Weevil" misapplied to every species of Insect attacking grain.—Importance of properly classifying Insects.—Stages of an Insect's life.—Transformations.—Farmers and Gardeners should become acquainted with them.—Seven Orders of Insects.

When we consider the vastness of the interests depending upon the wheat crop, forming as it does the most valuable item of Canadian exports, and the chief article of food for our population, we cannot be surprised at the anxiety which is common amongst all classes of the community with regard to the alarming devastation of that important crop by insects of various kinds. The mysterious character of the visitation and the uncertainty which generally exists, respecting the origin, nature, and habits of these creatures, adds not a little to the alarm which their ravages have caused; it well becomes then, a wise and paternal Government to take such steps as may serve to procure the greatest amount of information on this subject, and thus increase the number of qualified observers throughout the country, by whose combined exertions some effectual method of guarding against these ravages may be adopted. This course has been pursued under similar circumstances by some of the most enlightened countries of Europe, who have not considered the interests of Agriculture a subject beneath their notice, or the devastations of insects which might scourge their countries with famine, as a matter of little consideration.

We learn from Young's Annals of Agriculture,* that when an alarm was excited in England in 1788, by the probability of importing in cargoes of wheat from North America the insect known by the name of the Hessian fly, the privy council sat day after day anxiously debating what measures should be adopted to ward off the danger of a calamity more to be dreaded, as they well knew, than the plague or pestilence. Expresses were sent off in all directions to the officers of the Customs at the different out ports respecting the examination of cargoes—despatches were written to the Ambassadors in France, Austria, Prussia, and America, to gain that information, of the want of which they were so sensible; and so important was the business deemed, that the minutes of Council and the documents collected from all quarters fill upwards of two hundred octavo pages.†

In the year 1785, many provinces in France were so ravaged by cock-chafers,

* Annals xi. 406. † Kirby & Spence.

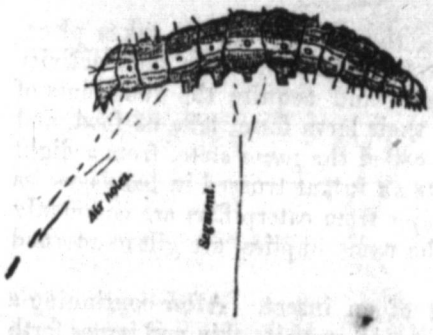
that a premium was offered by Government for the best mode of destroying them. The Society of Arts in London, during many years, held forth a premium for the best account of this insect and the means of checking its ravages, but without having produced one successful claimant. For more than a century an insect destructive in granaries has prevailed in the western parts of France, and has gradually been extending in an easterly and northerly direction. In the province of Angoumois it continued to increase for many years, till at length the attention of Government was directed to its fearful depredations. This was in 1760, when the insect was found to swarm in all the wheat fields and granaries of Angoumois, and of the neighbouring provinces, and the afflicted inhabitants were thereby deprived not only of their principal staple, wherewith they were wont to pay their annual rents, their taxes, and their tithes, but were threatened with famine and pestilence from the want of wholesome bread. Two members of the Academy of Sciences of Paris, the celebrated Duhamel du Monceau and M. Tillet, were then commissioned to visit the province of Angoumois, and inquire into the nature of this destructive insect. The result of their inquiries was communicated to the Academy, in whose history and memoirs it may be found, and was also subsequently republished in a separate volume.*

Such then are some of the instances where Governments have endeavoured, by offering premiums and enlisting the services of scientific persons, to procure such information as may serve to avert the calamities caused by destructive insects amongst the valuable products of the soil. And no small part of the difficulty which arose in making such investigations, was caused by the ignorance of the farmers with regard to the nature of the insects from whose ravages they had suffered so much. One would have supposed that men who had lost entire crops by an insect whose transformations must have come under their notice in every stage of its existence, ought to have been able to give all the information which was required respecting its nature, propagation, and economy. So far, however, was this from being the case, that many of those from whom information was sought, seemed to be ignorant whether the insect was a moth, a fly, or what they termed a bug, indeed so various and contradictory were the statements regarding the Hessian Fly, submitted to the celebrated entomologist, Sir Joseph Banks, by the Privy Council of England in 1788, that though he had a large mass of materials before him, he was unable to reach any satisfactory conclusion, and it remained for the American Entomologist, Say, to determine, satisfactorily, the species and genus of the insect in question. The frequent misapplication of names, by persons unacquainted with Natural History, is one of the greatest obstacles to the progress of science, and shows how necessary it is that things should be called by their right names, if the observations communicated respecting them are to be of any service. For instance, the name "weevil" is used in this country to describe any insect that destroys the wheat plant; it is given to at least six different kinds of insects, two of which are moths, two are flies, and two are beetles. Now nearly four thousand species of weevils have actually been scientifically named and described. When mention, therefore, is made of "the weevil," it may well be a subject of doubt to which of these four thousand species reference is made; if the scientific name of the species in question were made known, this doubt would at once be removed. Every intelligent farmer is capable of becoming a good observer, and of making valuable discoveries in Natural History, but if he be ignorant of the proper names of the objects examined, or if he give to them names which have previously been applied by other persons to entirely different objects, the result of his observations will be to confuse instead of throwing light upon the subject.

* Histoire d' un Insecte qui devore les grains de l'Angoumois, 12mo., Paris, 1762.

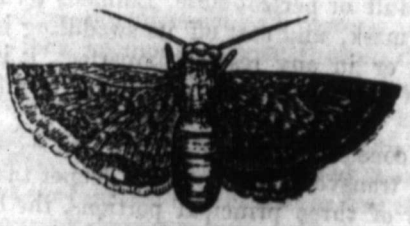
It will be well therefore to give the names of the orders under which different insects may be classed, before we proceed to consider the nature, habits, and economy of those which are to form the subject of this essay. This subject is particularly important to all persons who are interested in agricultural pursuits. The array of scientific names and terms which it presents may seem formidable, but the few that will be required in treating of the Hessian fly, weevil, &c., may be understood and impressed upon the memory without much difficulty. The advantage of these scientific names is, that they are understood by well educated persons in all parts of the world, whereas the common names by which insects are known in different countries are very limited in their application, and are also often misapplied. The technical words or phrases used by the farmer, the blacksmith, or the carpenter, in their different callings, seem to the inexperienced difficult and unintelligible, yet to the skilful workman are full of meaning and seem quite appropriate. So, too, to the lover of Natural History, the terms of science lose their forbidding and mysterious appearance, and become as familiar to him and as full of meaning as the technical words used by the mechanic are to him in the pursuit of his trade or art.

Before we proceed to the classification of insects, it will be well to prefix a few remarks on their structure, and explain the meaning of the different terms used, together with a short, and consequently imperfect sketch of their anatomy, and the transformations they undergo.



CATERPILLAR—FIG. I.

PUPA—FIG. II.



MOTH—FIG. III.

MOTH.

The word *Insect* is derived from the Latin, and means cut into or notched, and is designed to express one of the chief characters of this tribe, their bodies being marked by several cross-lines or incisions, the parts between these lines being called segments or rings, and consist of a number of jointed pieces more or less moveable on each other. Insects do not breathe through their mouths, but through little holes called spiracles, generally nine in number, along each side of the body. Some, however, have the breathing holes placed in the hinder extremity, and a few young water insects breathe by means of gills. They are never spontaneously generated from decayed animal or vegetable matter, but

are produced from eggs. A few, such as some plant lice, do not lay their eggs, but retain them within their bodies till the young are ready to escape. Others invariably lay their eggs where their young, as soon as they are hatched, will find a plentiful supply of food immediately within their reach.

There are three periods in the life of an insect, more or less distinctly marked by corresponding changes in the form, powers, and habits. In the first, or period of infancy, an insect is technically called a *larva*. Linnæus, with happy application, adopted this name from the Latin word signifying a *mask;* justly considering that the real form of the insect while it remained under this covering was disguised or *masked*. There are two terms in common language corresponding to this, although by no means so expressive, and in themselves indefinite. The larvæ of butterflies, moths, and insects of the same class (lepidoptera) are called caterpillars; while those which are white, somewhat inactive, and are found either in the ground, or enclosed in other substances, bear the common name of grubs or maggots. This name *larva* is applied not only to caterpillars, grubs, and maggots, and to other insects that undergo a complete transformation, but also to young and wingless grasshoppers, and indeed to all young insects before the wings begin to appear. In this period of their lives, during which they eat voraciously, and cast their skins several times, they continue a longer or a shorter period, some only a few days or weeks, others several months or years. It is in this larva or caterpillar state that they mostly do the greatest injury to vegetation.

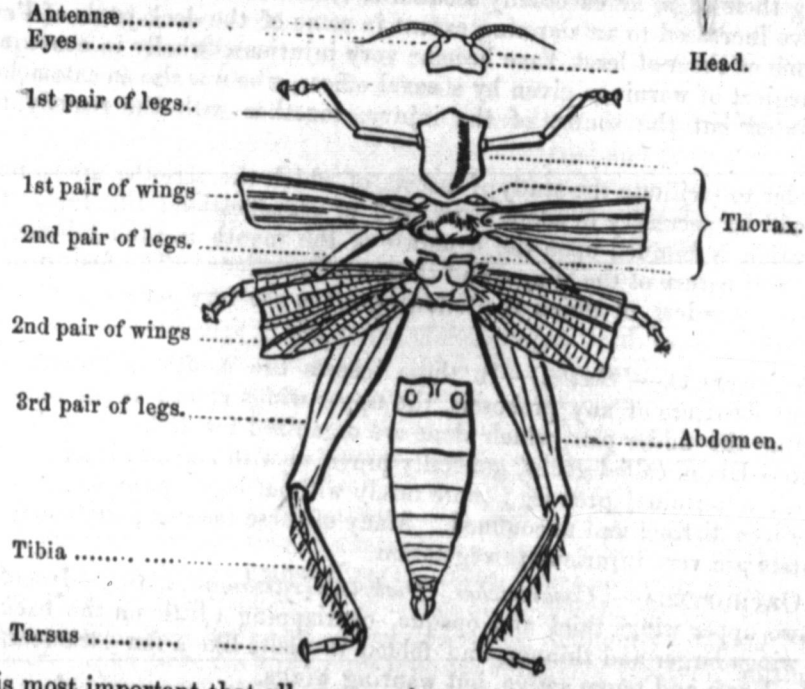
After the larva has attained its full size, the second change takes place, wherein those insects that undergo a partial transformation, retain their activity and their appetites for food, continue to grow, and acquire the rudiments of wings, while others at this age entirely lose their larva form, take no food, and remain at rest in a death-like sleep. This is called the *pupa* state, from a slight resemblance that some of the latter present to an infant trussed in bandages, as was the fashion among the Romans. The *pupæ* from caterpillars are commonly called *chrysalids*, because some of them, as the name implies, are gilt or adorned with golden spots.

We come now to the third and last state of an insect. After continuing a certain time in the pupa or chrysalis state, it again casts its skin and issues forth a perfect and full grown moth, fly, or beetle, to deposit its eggs for future generations. When an insect assumes its adult or perfect state, Linnæus termed it an *imago*, because having laid aside its mask, and cast off its swaddling bands, being no longer disguised or confined, or in any respect imperfect, it is now become a true representative or *image* of its species, and is qualified to fulfil the laws of nature in perpetuating its kind.

The body of a caterpillar generally consists of a head and twelve segments. In winged or adult insects, two of the transverse incisions are deeper than the rest, so that the body seems to consist of three principal portions, the first of these is the head, the second or middle portion the thorax or chest, and the third or hindmost the abdomen or hind-body. The eyes of adult insects, though apparently two in number, are compound, each consisting of a number of single eyes closely united, and incapable of being rolled in their sockets. The eyes of grubs, caterpillars and other completely transforming larvæ, are not compound, but consist of five or six eyelets clustered together on each side of the head. Some, such as maggots, are blind. Near to the eyes are the *antennæ*, two jointed members, corresponding in situation with the ears of other animals, and are supposed to answer the purposes of feeling and hearing. The mouth of some insects is made for biting or chewing, that of others for taking food by suction.

The parts belonging to the thorax are the wings and the legs. The former

are two or four in number, the under side of the thorax is the breast, and to this are fixed the legs, which are six in number in adult insects, and in the larvæ and pupæ of those that are subject only to a partial transformation. The parts of the legs are the hip joint, by which the leg is fastened to the body, the thigh (*femur*), the shank (*tibia*), and the foot which sometimes consists of one joint only, more often of two, three, four, or five pieces (*tarsi*) connected end to end, like the joints of the finger, and armed at the extremity with one or two claws. The abdomen or hindmost and largest part of the body, contains the organs of digestion, and other internal parts, and to it also belong the piercer and the sting with which many winged or adult insects are provided. The parts belonging to the abdomen of larvæ are various, but are mostly designed to aid them in their motions, or to provide for their respiration.



It is most important that all persons interested in gardening and agriculture should become acquainted with the transformations that insects undergo, and of which a short sketch has been given above. They will never be able to check their ravages effectually until they have acquired some knowledge of their habits and modes of existence. For instance, with regard to noxious caterpillars, how few are aware that they proceed from the eggs of butterflies, moths, &c., and that the best method of preventing their attacks is to destroy the female fly before she has laid her eggs. If the research was carried still further so as to detect the pupa, the work might be more effectually accomplished. Kirby and Spence, in their introduction to entomology, tell us that in Germany the gardeners and country people, with great industry, gather whole baskets full of a destructive caterpillar, and then bury them, thinking by this means they have rid themselves of the pest; but they might as well try to drown a fish with water, for these caterpillars, as they undergo their next transformation beneath the ground, instead of being destroyed by this manœuvre, are placed in a position most favorable to their appearing in greater numbers the following year. Again, Providence has ordained that certain insects should be active agents in destroying the noxious species, and preventing their increase. The wheat fly, for instance, is the prey of three parasitical insects, yet ignorant persons have

taken these destroyers of our enemies for their parents; we learn from this how necessary it is that agriculturists should be enabled to distinguish their friends from their enemies.

The utility of a knowledge of the natural history of insects in the practical arts of life is forcibly shown in the case of Linnæus, "who at once gave to natural science its language and its laws, and also pointed out its economical advantages." On one occasion this great naturalist was consulted by the King of Sweden upon the cause of the decay of the ship timber in the royal dock-yards. He traced the destruction to the depredations of insects, ascertained their history, and then directing the timber to be sunk under water during the season when these insects made their appearance in the winged state and were engaged in laying their eggs, he effectually secured it from future attacks.* These insects have increased to an alarming extent in some of the dock-yards of France, and in one of them at least, have become very injurious, wholly in consequence of the neglect of warnings given by a naval officer, who was also an entomologist, and pointed out the source of the injury, together with the remedy to be applied.

In order to facilitate the study of insects, of which the varieties are so numerous, it will be necessary to adopt some kind of classification; the basis of this classification is founded upon the structure of the mouth in the adult state, the number and nature of the wings, and the transformations. The first great divisions are call orders, of which the following seven are very generally adopted by naturalists.

I. COLEOPTERA—(*Beetles*)—In these insects the mouth is furnished with jaws, but destitute of any proboscis, the upper wings appear as two hard cases, protecting the under pair, which alone are organized for flight—transformation complete—larvæ, called grubs, generally provided with six true legs, sometimes also with a terminal prop-leg; more rarely without legs—pupa with the wings and the legs distinct and unconfined. Many of these insects, particularly in the larva state are very injurious to vegetation.

II. ORTHOPTERA—(*Cockroaches, Crickets, Grasshoppers, &c.*)—Insects with jaws, two upper wings thick and opaque, overlapping a little on the back; two under wings larger and thinner, and folded in plaits like a fan—transformation partial—larvæ and pupæ active, but wanting wings.

III. HEMIPTERA—(*Bugs, Locusts, Plant-lice, &c.*)—Insects without jaws, but having a horny beak for suction; four wings, the upper harder than the lower, coriaceous (or leathery) and folded—transformation partial—larvæ and pupæ nearly like the adult insect, but wanting wings.

IV. NEUROPTERA—(*Dragon Flies, May Flies, Lace-winged Flies, &c.*)—Insects with jaws, four reticulated or netted wings, the hinder ones largest, without any sting.

V. LEPIDOPTERA—(*Butterflies and Moths*)—The perfect insect without jaws, and lives by suction, the proboscis being spirally coiled, four wings highly developed, covered with bran-like scales—transformation is complete. The larvæ are caterpillars, having six true legs, and from four to ten fleshy prop-legs—pupa with the cases of the wings and of the legs indistinct and fastened to the breast.

VI. HYMENOPTERA—(*Ants, Wasps, Bees, &c.*)—Insects with jaws, four wings, glassy, and marked with strong nerves, the hinder pair being the smallest

*Kirby and Spence.

—tail usually armed with a sting—larvæ mostly like maggots; some like caterpillars—Pupæ with the legs and wings unconfined.

VII. DIPTERA—(*Flies, Mosquitos, Gnats, &c.*)—Insects with a horny or fleshy proboscis, two wings only, and two organs called ballancers or poisers behind the wings. The larvæ are maggots—transformation complete.

CHAPTER II.

COLEOPTERA.

Cockchafers—Spring Beetles—Wire-worm—Weevils—Nature and habits of these Insects—Their devastations—Best means of preventing them.

The insects comprised in this order are very numerous, we shall here simply notice those which are injurious to the wheat crop; these are the *Cockchafers* or *May Flies*, the *Elater* or spring beetles, with their destructive larvæ the *wire-worm*, and one of the numerous family of *weevils*.

Beetles, it will be remembered, are biting insects, and are provided with two pairs of jaws moving sidewise; their wings are covered and concealed by a pair of horny cases or shells, meeting in a straight line on the top of the back, and usually having a small triangular or semi-circular piece called the scutel, wedged between their bases. Hence the order to which these insects belong is called *Coleoptera*, a word signifying wings in a sheath. Beetle, in old English *betl*, *bytl*, or *bitel*, means a biter or insect that bites.

The Cockchafer belongs to the genus *melolontha*, a word used by the Greeks to distinguish the same kind of insects which were supposed by them to be produced from or with the flowers of apple trees, as the name itself implies. The following are the general characters of the family of Melolonthadæ, or Melolonthians—the body is oblong oval, convex, and generally of a brownish colour, the head is enclosed in a corselet, which is slightly narrowed in front, and most commonly attached to the elytra or wing-case behind. The antennæ are composed of ten joints terminating in a mass like a plume, which the insect displays at will, sometimes to the number of seven leaves, larger and more perfectly developed in the males than females. The bodies of melolontha are very often velvet like, and covered with hairs and imbricated scales, differently coloured like the butterflies. The powerful and horny jaws are admirably fitted for cutting and grinding the leaves of plants, upon which these beetles subsist, their double claws supporting them securely on the foliage, and their strong and jagged fore legs being formed for digging in the ground, point out to us the place of their transformations.

The cockchafer (*Melolontha vulgaris*) is hatched from an egg, which the parent deposits in a hole about six inches deep which she digs for the purpose. The eggs are oblong, of a bright yellow colour, and are placed regularly side by side; each female lays from one to two hundred, which she abandons as soon as deposited, generally ascending to the surface again, and perishing in a short time. From the eggs are hatched in the space of fourteen days, sometimes longer, little whiteish grubs or maggots, each provided with six legs near the head and a mouth furnished with strong jaws. They now feed upon the roots of plants with great voracity, and sometimes commit ravages of so deplorable a kind as totally to disappoint the best founded hopes of the husbandman. As they increase in size and strength, they become able to make their way with ease under ground, and continue their ravages upon the roots of plants. When the grub has attained its greatest size, it is an inch and-a-half long, and half-an-inch thick, perfectly white with a red head, having a semi-circular lip, and a strong pair of jaws. It has two antennæ, but is destitute of eyes. The subterranean

existence of these animals is extended to four years, and as their food is not accessible during the cold weather, they bury themselves sufficiently deep in the soil to be safe from the frost, and pass the winter in a state of torpidity. When the spring restores them to animation and activity, they revisit the upper stratum of the ground, having at each annual awakening undergone a change of skin. At the end of three years they have acquired their full growth as larvæ. —they then cease eating, and void the residue of their food. If opened at this period, the skin is found to be completely filled with a mass of white, oily matter, resembling cream, apparently destined as a reserve for the alimentation of the insect during the period of its remaining in the form of a nymph, which is scarcely less than six months. To undergo their final change, these larvæ bore into the earth to the depth of two feet or more; there, by its motions from side to side, each grub forms an oval cavity which is lined with some glutinous substance thrown from its mouth. The larva being thus secured, passes into the pupa state by bursting its skin, coming forth as a soft whitish nymph, exhibiting the rudiments of elytra, antennæ, &c. The insect then gradually acquires consistence and colour, becoming of a brownish hue, and thus it remains until the month of February, when the thin fibre enclosing the body is rent, and three months afterwards the perfected beetle digs its way to the surface, escaping from its grovelling mode of life, to soar through the air and disporting in sunshine and shade. From this circumstance the German name *Maikaefer*, and the English *May bug* or *beetle* has been given. From Kirby and Spence we learn that the larvæ of the cockchafer will destroy whole acres of grass. They undermine the richest meadows and so loosen the turf, that it will roll up as if cut with a turfing spade.* These grubs did so much injury to a poor farmer near Norwich, that the court of that city allowed him £25, and the man and his servant declared that they had gathered eighty bushels of the beetle. It was for the destruction of these grubs that the Government of France and the Society of Arts in London offered the premiums as mentioned above in the introduction to this essay. Attempts have been made to turn these insects to good account, by procuring oil from them. M. Breard, Mayor of Honfleur in France, and proprietor of an oil mill, having offered one franc per bushel for cockchafers, procured seventeen bushels, from which he obtained twenty-eight quarts of good lamp oil. A kind of grease has also been made from them in Hungary.†

In their winged state, these beetles, with several other species, act as conspicuous a part in injuring the trees, as the larvæ do in the destruction of herbage, young wheat, and other plants; after escaping from the ground in their perfect state, they pass the greater part of the day upon trees, clinging to the underside of the leaves, in a state of repose. As soon as evening approaches, they begin to buzz among the branches, and continue on the wing till near midnight. Their flight is very irregular, darting hither and thither, hitting against objects in their way with a force that often causes them to fall against the ground. They frequently enter houses at night, attracted by the lights. The boldness with which they will rush against objects, seeming to threaten an attack without the power of causing harm, has caused them to be called *dors*, that is darers; while their seeming blindness and stupidity have become proverbial in the expressions "blind as a beetle," and beetle headed. The ravages they commit amongst the leaves of trees and shrubs is sometimes so great as to resemble a visitation of locusts, and is the cause of much misery to the inhabitants of those districts infested by them. Mouffet relates that in the year 1574, such a number of them fell into the river Severn, as to stop the wheels of the water mills; and in the Philosophical Transactions, it is stated that in the

*Kirby and Spence. †Ibid.

year 1688 they filled the hedges and trees of Galway, in such infinite numbers, as to cling to each other like bees when swarming; and when on the wing, darkened the air, annoyed travellers, and produced a sound like distant drums. In a short time the leaves of all the trees, for some miles round, were so totally consumed by them, that at midsummer the country wore the aspect of winter.*

Every attentive observer must be familiar with the appearance of the cock-chafer as it flutters about in the warm evenings of May, although many are not aware of the destruction it commits amongst plants and trees in its larva as well as in its perfect state; as these beetles frequently commit serious ravages on fruit trees it may be well to mention that they can be effectually exterminated by shaking them from the trees in the morning upon clothes spread to receive them when they fall, after which they should be thrown into boiling water to kill them, and may then be given as food to swine. As the methods of destroying the grubs of this beetle are similar to those employed for eradicating the wire-worm or grub of the spring-beetle—they will be mentioned when treating of the latter insect.

The *Elater*, or spring-beetle, belongs to a group of coleopterous insects, forming the type of the order *Elateridæ*, many of which species are the parents of the numerous kinds of *wire-worms* which so dreadfully infest the crops of the farmer. These wire-worms are not to be confounded with the American wire-worm—a species of *Iulus*—which is not a true insect, but belongs to the class MYRIAPODA, a name derived from the great number of feet with which most of the animals included in it are furnished, whereas the true wire-worm has only six feet. The body of the elater is comparatively long, the head is sunk to the eyes in the thorax, the antennæ are of moderate length, and more or less notched on the inside. The legs are short and slender and the feet are five-jointed; on the under side of the breast, between the bases of the first pair of legs, there is a short blunt spine, the point of which is usually concealed in a corresponding cavity behind it. When the insect by any accident falls upon the ground, its legs are so short and its back so convex, that it is unable to turn itself over, it then folds its legs close to its body, bends back the head and thorax, and thus unsheaths its breast spine, then by suddenly straightening its body, the point of the spine is made to strike upon the edge of the sheath, which gives it the power of a spring, and reacts upon the body of the insect so as to through it perpendicularly in the air; thus, by a half somerset, they have the power of regaining their natural position; hence the entomological name of elaters, and the popular name of spring-beetles, skip-jacks, click-beetles, &c. The elaters are of various colours, some are of a reddish brown, some mouse coloured, and some black.

The eggs of these beetles are very minute, of a yellowish white colour and slightly oval. The larvæ are at first almost invisible to the naked eye; they grow slowly, and become when full grown three-fourths of an inch in length; they have a wire-like form, a smooth surface, and extreme toughness, hence they are called *wire-worms*. They live five years in the proper state of larvæ, and cast off their skin, probably at three successive periods as they increase in size. The wire-worm is of a pale ochreous colour, becoming darker when dead, with a few hairs scattered over its skin; the back is round, the belly rather flat, the head wedge-shaped; there are twelve abdominal segments, the three first being furnished with six short legs. There are two little antennæ in front of the head, they have each three joints, and similar to the palpi in form; on each side of the head behind the antennæ is a minute dot, like a little eye. When the wire-worm arrives at maturity it descends a considerable depth into the earth, and

*Kirby and Spence.

forms there an oval cell; it then casts its skin again and becomes a pupa. The pupa is long and narrow in form like the perfect insect, but is of a yellowish white colour; the insects commonly remain in this state two or three weeks. When the appointed time for their transformation comes, they burst from their tombs and arrive at the surface perfect beetles.

The most important crop which suffers from the wire-worm is wheat. A writer in the Linnean Transactions estimates the loss of crops of this grain sown upon clover leys, recently broken up pastures, pea and bean stubbles, at about a twentieth part of the whole; the proportion is sometimes greater, and sometimes the destruction is so excessive as to require the whole field to be ploughed up. The attacks in general do not begin until spring, and are indicated by the dying off of the lower leaves, and in the worst cases by the falling of the plant. The wire-worm attacks other crops besides wheat, such as oats and barley; oats when sown on newly broken leys suffer excessively, but wheat suffers the most among the grain crops, and white turnips among the green ones. The writer just above mentioned estimates the loss of wheat in England from the ravages of the wire-worm annually at 60,000 bushels.

Three of the most effectual preventives of the ravages of the wire-worm are, judicious fallowing, the judicious breaking up of leys and pastures, and the judicious surface treatment of ploughed lands. A clean and careful summer fallow, when accompanied with such a thorough burning of rubbish as will surely destroy both the eggs and larvæ of these beetles, is a perfect remedy against wire-worms, and if it occurred at regular intervals would always be a more or less powerful hindrance to their obtaining any lodgement, more especially if all the couch grass and other similar weeds whose roots might afford sufficient sustenance to the worms till the corn crop had struck root, were carefully gathered and burnt. In breaking up any old pasture a breast-plough should be used, to take off *not more than two inches* of the turf in the first instance, which will secure the crop from any attacks of the wire-worm; for an additional depth of two inches has so encouraged the pest that it has been known to destroy an entire field of wheat. The advantage of the shallow paring is, that the roots of the herbage die; whereas, if the sod is ploughed four inches deep they lie and vegetate, and afford sufficient sustenance to the worms until the wheat plants are forward enough to furnish them with a more agreeable food. Planting the soil with white mustard or woad has been found an effectual method of banishing the wire-worm in England, there being something in those crops very obnoxious to these insects; but this remedy is not applicable to Canada as such crops are not grown here.

Another good remedy for wire-worms is the application, by sprinkling, top-dressing, or intermixture with manure, of some substance which without injuring the plants, would kill the larvæ. Any strong saline solution would probably have the desired effect, and at the same time would benefit the soil. Nitrate of soda thus applied proved in one case most beneficial. Lime and soot if applied to the soil before sowing any grain will, it is affirmed, kill the wire-worms. Common salt on light lands is highly efficacious in destroying them. In England they slice potatoes, turnips and other vegetables, and place them over the field or garden which attract the larvæ, and they are then picked off every morning by women and children appointed for this purpose.

Bierkander, a Swedish observer, who tried many experiments in order to destroy these pests, found after all that hand-picking is one of the best remedies. On one occasion he employed a child to follow the plough and pick up the worms, by this means three hundred and fifty-one were collected in a piece of land 600 feet long and 56 broad. He considered it would be serviceable if children always followed the plough and gathered these yellow worms into a

bottle, as they would by that means be considerably diminished, and perhaps in time completely exterminated.

Birds of many kinds, both tame and wild, are greedy destroyers of wire-worms; the chief are ducks, turkeys, common poultry, night-hawks, and above all rooks. These last will fearlessly follow the plough to feed upon the wire-worms and other insects; the form of his bill, his strength and assiduity especially adapt him for detecting these larvæ in their hiding places. A writer on this subject states that he had repeatedly examined the crops of rooks: in six young that had been shot, the crops were nearly filled with wireworms; in the crops of others he found the larvæ of the cockchafer and other grubs. The following remarks by a Mr. T. G. Clithero are very interesting: "In the neighbourhood of my native place, in the county of York, is a rookery belonging to W. Vavasour, Esq., of Weston, in Wharfdale, in which it is estimated that there are 10,000 rooks: that one pound of food a week is a very moderate allowance for each bird, and that nine-tenths of their food consists of worms, insects, and their larvæ. Here, then, there is the enormous quantity of 468,000lbs., or 209 tons of worms, insects, and their larvæ, destroyed by the rooks of a single rookery in one year. To every one who knows how very destructive to vegetation are the larvæ of insects as well as worms fed upon by rooks, some slight idea may be formed of the devastation which rooks are the means of preventing."

These facts regarding the destruction of injurious insects by birds are well worthy of the earnest attention of Canadian farmers; too many of whom show such a want for taste in neglecting to plant shrubs and trees about their premises, and thus deprive insect-devouring birds of necessary shelter and encouragement to increase in cleared settlements; nature has wisely provided a remedy for nearly every evil, but by not paying attention to the economy of nature, man, by his shortsightedness, too often deranges its operations, and renders its wise provisions useless. Although the ravages of these wire-worms are not so alarming in their extent in Canada as they have proved in Europe, yet, as the settlements become older, and the slovenly farming so often witnessed is pursued, we may expect their ravages to increase. Our insect-eating birds ought therefore to be cherished and encouraged for their valuable services in destroying these plagues. Although we have no rooks we have crows, which may be seen in spring feeding on the grubs turned up in a newly ploughed field; possibly, as the climate of Canada becomes ameliorated and the winters less severe, colonies of rooks may be induced to take up their residence amongst us.* Those who have never seen a rookery are referred to that quaint description of one which is so happily pourtrayed by Washington Irving in his "Bracebridge Hall."

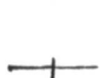
In addition to birds, many quadrupeds such as the weasel, skunk, rat, and mole, are devourers of these beetles, which are also sometimes the prey of other species of coleopterous insects. In France the golden ground beetle (*Scarabæus auratus*) devours the female dor or chafer at the moment when she is about to deposit her eggs. This beetle, with several others equally predaceous, are found on this continent, and contribute to check the increase of the destructive Melolonthadæ.

The Weevil is the next of the coleopterous order of insects which will engage a portion of our attention. This tribe is very numerous—nearly 4000 species having been scientifically named and described—in consequence of this fact many have ridiculed the idea of attempting to make the agricultural community acquainted with the leading characteristics of those species which are injurious to vegetation—more especially to the wheat crop. Now, it so happens that only *one* species of the weevil, the *calandra granaria*, or *curculio granarius*

*Since the above was written the author has learnt that an attempt to introduce rooks from England into Virginia, U. S., has been tried once but proved a failure.

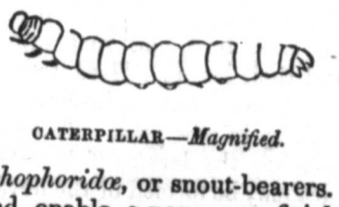
of Linnæus is found to destroy wheat; and it does not attack the growing crop, but the stored grain. As has been mentioned before, the name "weevil" has been given in this country to at least six different kinds of insects, two of which are moths, two are flies, and two are beetles; this has caused a great deal of confusion, and many communications to agricultural and other journals from intelligent and observant persons have been of no practical use in consequence of this misapplication of names. A few remarks, therefore, on the grain weevil, although it is not actually injurious to vegetation, may be useful as tending to prevent future mistakes.

THE WOLF—*Magnified.*



Nat. Size.

CATERPILLAR.

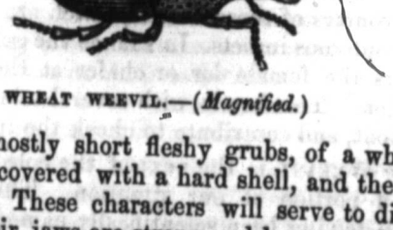


CATERPILLAR—*Magnified.*

The weevils belong to a group called *Rhynchophoridæ*, or snout-bearers. The characters of this group are well defined and enable a very superficial observer readily to distinguish its species from those of all other families, except perhaps the *Xylophagi*, or wood-eaters. The snout or beak of a weevil is its grand characteristic. Another distinctive mark of the whole family is furnished by the antennæ, which are usually knobbed at the end, and are inserted on the muzzle or snout, on each side of which there is generally a short groove to receive the base of the antennæ when they are turned backwards. Their feelers are very small, and for the most part concealed in the mouth. Few weevils are much observed on the wing, many which confine themselves to the ground have the elytra or wing cases soldered together at the suture, and are incapable of using them. The body is usually more or less arched lengthwise, and in many instances is pear-shaped. The legs are short, not fitted for running or digging. The feet are four-jointed, thus distinguishing them from the melolonthians, the feet of which have five joints. They make use of their snouts not only in feeding, but in boring holes into which they afterward drop their eggs.

WHEAT WEEVIL.—*Calandra Granaria.*

(*Natural Size.*)



WHEAT WEEVIL.—(*Magnified.*)

The larvæ of the snout beetles are mostly short fleshy grubs, of a whitish colour, and without legs. The head is covered with a hard shell, and the segments of their bodies are very convex. These characters will serve to distinguish them from the larvæ of flies. Their jaws are strong and horny, and with them they gnaw those parts of plants which serve for their food. It is in the larva state that weevils are most injurious to vegetation. Some of them bore into and spoil fruits, grain, and seeds; some attack the leaves and stems of plants, causing them to swell and become cankered; others penetrate into the solid wood, interrupt the course of the sap, and occasion the branch above the seat of

attack to wither and die. Most of these grubs are transformed within the vegetable substances upon which they have lived, some however, when fully grown, go into the ground, where they are changed to pupa, and afterwards to beetles.

The true *wheat weevil* (*Calandra granaria*) is a slender beetle of a pitchy red colour, about one-eighth of an inch long; its antennæ are scarcely longer than the head and the rostrum or snout; the terminal joint of its antennæ is a somewhat ovate club. The snout is slender and rather long, its thorax is elongate and a little narrowed in front, and covered with long oblong punctures; its elytra do not cover the abdomen, and are marked with deep lines, faintly punctured in the bottom. The larva is a small whitish worm about a line in length, comprising nine segments; the body soft, and the only external organs a pair of strong jaws. The pupa is white and somewhat transparent, and lies within the envelope of a grain of wheat like the kernel of a nut within the shell. The female deposits her eggs upon the wheat after it is housed, and the young grubs when hatched, immediately burrow into the wheat, each individual occupying a single grain, the substance of which it devours so as to leave nothing but the hull; and this destruction goes on within, while no external appearance leads to its discovery, loss of weight being the only evidence of the mischief caused among the grain. The fecundity of the female is so vast, that in a single season (according to one authority) upwards of 23,000 individuals may descend from one mother; Kirby and Spence say 6000 descendants may spring from a single pair; even from this calculation we may estimate the countless millions, equal in their effects to an Egyptian plague, which may spring up when the breeders are numerous. The perfect insect, also, feeds upon the grain, attacking kernels which have not been used by the larvæ, and eating portions of their substance; it does not appear to consume much of the interior of the grains, but seems to inflict damage principally by its numerous piercings and fractures of their envelopes.

There have been many remedies proposed against the attacks of the corn weevil. The passing of the grain through a fanning machine, as near as possible to the time when the great proportion of the insects are transforming from larvæ to pupæ, is cheaper and easier than any other proposed method, and if all the damaged grains were blown away, as from being very light they probably would, the insect might in a season or two, by this means, be expelled from the premises hitherto infected. These weevils may be effectually destroyed by kiln-drying the wheat; there is danger, however, of over-drying or calcining the grain by this process. Another scheme proposed, which is much approved, is to provide a small heap of grain, (barley is the best, as the insects are fondest of it,) this is to be placed near the principal store, which is then to be continually moved about; the weevils fond of quiet, will resort to the undisturbed heap. When collected there in sufficient numbers, they may be scalded in the heap with boiling water; this practice has been attended with highly favourable results. Grain that is kept cool, well ventilated, and is frequently moved, is said to be exempt from attack.

The *pea weevil* (*Bruchus Pisi*) is one of the most destructive of this family to the growing crops of the farmer. It is known in this country by the incorrect name of the pea-bug, but it is a weevil, and is supposed to be a native of the United States. The original meaning of the word Bruchus means devourer, a most appropriate name for this insect, so destructive to the pea crop.

Few people are aware how many insects they swallow unconsciously, while enjoying the luxury of early green pease. If the pods are carefully examined, small discoloured spots may be discovered inside, each one corresponding to a similar spot on the opposite pea. If this spot be opened, a small whitish grub destitute of feet will be found; this is the larva of the pea weevil, which lives

upon the substance of the pea, and arrives at its full size by the time that the pea becomes dry. This larva bores a round hole from the hollow in the centre of the pea to the hull, but leaves the latter and generally the germ untouched. Hence these damaged peas will frequently sprout and grow. The larva is transformed to a pupa within its cell in the pea, in the autumn, and before the spring, casts its skin again, becomes a beetle, and gnaws a hole through the thin hull in order to make its escape, which frequently does not happen before the peas are planted for a crop. The weevil lays its eggs singly in the punctures which it makes in the tender pod, just as the peas are formed, the grubs as soon as they are hatched penetrate the pod and enter the peas, making a hole so fine as hardly to be discovered, and which is soon closed up. Sometimes every pea in a pod will contain a weevil grub, and in some parts so great has been the injury, that the inhabitants have been compelled to give up the cultivation of this crop.*

In order to destroy this pea weevil, one plan recommended is to keep the seed peas one year over before planting them, in tight vessels. Others recommend putting the peas in hot water just before sowing them, by which means the weevils will be killed, and the sprouting of the peas will be quickened. Late sown peas escape the attacks of this weevil, as they are limited to a certain period for depositing their eggs.

The curculio which attack plums, peaches, and many other fruits, also causing a black warty disease on the branches of plum trees, is a beetle of the weevil tribe, called *Rhynchænus Nenuphar*, or *Curculio Nenuphar*, but as a description of these would be foreign to the proposed object of the present essay, we will not now dwell upon them.

The rice weevil (*Calandra Oryzæ*) is very destructive in the Southern States to the growing crops of rice, it also attacks stored grain; the remedies for them, are the same as those mentioned for the grain weevil, *Calandra Granaria*.

CHAPTER III.

ORTHOPTERA.

No Insect under this order particularly destructive to Wheat.—Locusts.

This order of insects will need but a very brief notice from us on the present occasion, for although it embraces the family of locusts, so well known for ages as extensive destroyers of vegetation, yet as Canada has so far escaped their ravages, they cannot receive a place in an essay devoted principally to insects injurious to the wheat crop. We may observe in passing, that locusts at various times have appeared in great abundance in different parts of the United States. In the State of Maine they often appear in great multitudes, and are greedy destroyers of the half-parched herbage.† In 1749 and 1754, they were very numerous and voracious—no vegetables escaped them—they even devoured the potato tops; and in 1743 and 1756, they covered the whole country and threatened to devour every thing green. So great was the alarm they occasioned, that days of prayer and fasting were appointed on account of the threatened calamity. Their voracity extended to every vegetable, even to the tobacco plant and the burdock. The garments also of labourers, hung up in the field while they were at work, were destroyed in a few hours.† In 1838 the vicinity of Baltimore, Maryland, was infected by insects of this kind, and the crops of the Mormons, in the territory of Utah, have suffered dreadfully from their ravages.

* Harris. † Harris.

CHAPTER IV.

HEMIPTERA.

Chinch Bug.—Thrips.—Devastations and Remedies.

Under this head or order are classed the numerous family of Aphides and Bugs, which infest plants and commit great depredations. Of these, the *Chinch Bug* and *Thrips* are found to be hurtful to the wheat crop.

The *Chinch Bug*. The word bug is used by entomologists for various kinds of insects, all, like the bed-bugs, having the mouth provided with a slender beak, which, when not in use, is bent under the body, and lies upon the breast between the legs. Bugs have no jaws, but live by sucking the juices of animals and plants, which they obtain by piercing them with their beaks. Owing to the peculiar construction of the wing-covers of these insects, the hinder half of each being thin and filmy like the wings, while the fore part is opaque, the order is called *Hemiptera*, literally half wings. There are other insects having the same kind of beak, whose wing-covers are entirely transparent, and are yet classed under this order, because they so much resemble them in structure and habits. Bugs undergo three transformations, but retain nearly the same form in all their stages, the transformations consisting of a gradual development of wing-covers and wings, and increase in the size of their bodies.

Kerby and Spence in their Introduction to Entomology, mention the chinch bug in the following terms:—"America suffers also in its wheat and maize from the attack of an insect, which, for what reason I know not, is called the "chintz bug-fly." It appears to be apterous, and is said in scent and colour to resemble the bed-bug. They travel in immense columns from field to field, like locusts, destroying everything as they proceed, but their injuries are confined to the States south of the 40th degree of north latitude. From this account the depredator here noticed should belong to the tribe of *Geocorisæ*, Latreille; but it seems very difficult to conceive how an insect that lives by suction, and has no mandibles, could destroy these plants so totally."

This description of the chinch bugs is not quite correct. They are not confined to the States south of the 40th degree; for Harris found one in his own garden in Cambridge, Massachusetts, and also received specimens from Wisconsin and Illinois. He also ascertained that the chinch bug is the *Lygæus leucopterus*, or white-winged Lygæus described by Mr. Say. In its perfect State it is is not apterous, but is provided with wings, and then measures about three-twentieths of an inch in length. It is readily distinguished by its white-wing covers, upon each of which there is a short central line, and a large marginal oval spot of a black colour. The rest of the body is black and downy, except the beak, the legs, the antennæ at base, and the hinder edge of the thorax, which are reddish yellow, and the fore part of the thorax which has a grayish lustre. The young and wingless individuals are at first bright red, changing with age to brown and black, and are always marked with a white band across the back. The eggs of the chinch bug are laid in the ground, in which they have been found in great abundance, at the depth of an inch or more. They make their appearance on wheat about the middle of June, and may be seen in their various stages of growth on all kinds of grain, on corn, and on herds grass, during the whole summer.*

The *Thrips* are such exceedingly minute insects, that to the naked eye they seem but as little specks, or rather like short lines, not exceeding the length and thickness of the letter *i*. In spring, these minute creatures may be found running about the petals of flowers, particularly the dandelion; but in summer

* Harris.

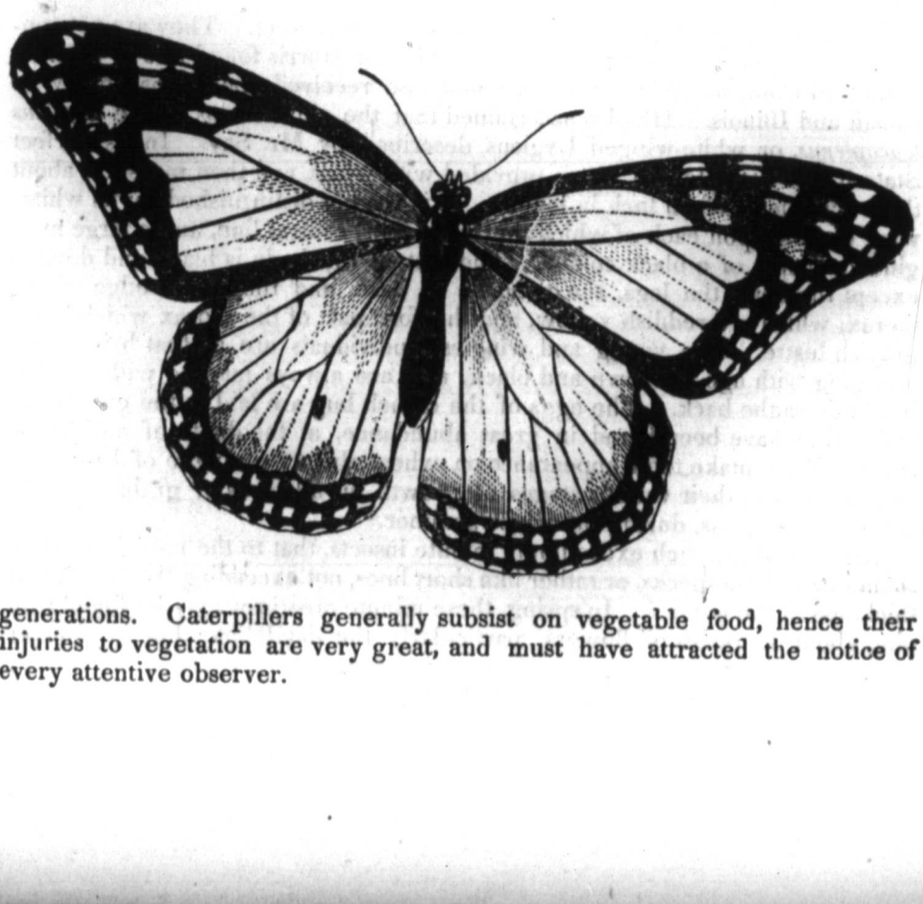
and autumn they fly into houses in considerable numbers, alighting upon the hands and face, and occasioning that troublesome irritation which many people experience during hot weather, without knowing the cause. These insects are highly noxious to the farmer, by deriving their nourishment from the embryo grains of the wheat plant, insinuating itself between the internal valve of the corolla and the grain, it inserts its instrument of suction in this last, and causes it to shrivel by depriving it of all its juices. In 1805 one-third of the wheat crop on the richest plains of Piedmont was destroyed by this seemingly insignificant little insect; in the same year the wheat in England also suffered from the same cause. In its larva state this insect is smaller than the maggot of the wheat fly; it is orange coloured, and is provided with six legs, two antennæ, and a short beak, and is very nimble in its motions. It may probably be destroyed by giving the grain a thorough coating of slacked lime. The *Aphides* or plant-lice to which family the thrips belong, are exceedingly prolific; Reaumur computes that each aphis may produce about 90 young, and that, in consequence, in five generations the descendants from a single animal would amount to the astonishing number 5,904,900,000, or nearly six billions.

CHAPTER V.

LEPIDOPTERA.

Angoumois Moth.—Noctua Cubicularis, or Grain-Worm.—Tinea Granella, or Grain-Moth.—Anacampsis Cerealella, or Angoumois Moth.—History.—Devastation.—Remedies.

This order comprises butterflies, hawk-moths or splinges, and moths. Their larvæ are called caterpillars, than which there are no insects so commonly and so universally destructive; they are inferior only to locusts in voracity, and exceed them in their powers of increase. As each female usually lays from two hundred to five hundred eggs, some idea may be formed of the millions which would spring from one hundred butterflies in the course of three or four



generations. Caterpillers generally subsist on vegetable food, hence their injuries to vegetation are very great, and must have attracted the notice of every attentive observer.

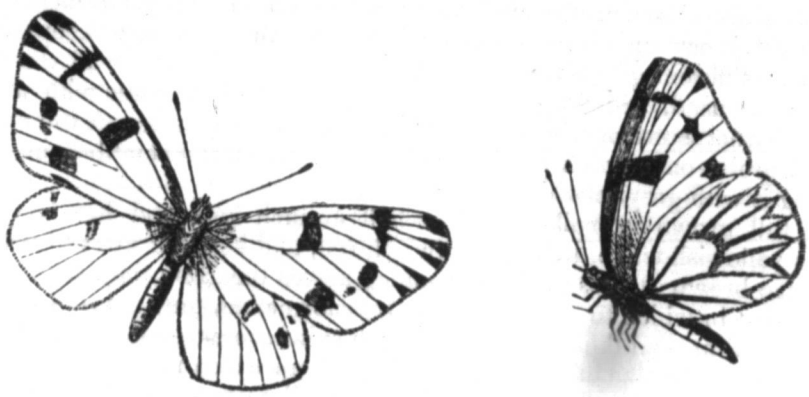
The word *lepidoptera* means scaly wings. The mealy powder with which the wings of butterflies and moths are covered, when magnified by a powerful lens are found to consist of little scales, lapping over like the scales of fishes. The body of these insects is also more or less covered with the same kind of scales, together with hair or down in some species.

All lepidopterous insects may be arranged under three primary divisions which are perceptible to the most inexperienced observer:

1st. The Butterflies (*Papiliones*) have the antennæ knobbed at the end, and fly by day only.

2nd. The Hawk-Moth (*Sphinges*) generally have the antennæ thickened in the middle, and tapering at each end. They fly in the morning and evening twilight.

3rd. The Moths (*Phalenæ*) the antennæ taper from the base to the extremity, and are either naked or are feathered on each side. They fly mostly by night.



The insects of this order, that are injurious to wheat, are the larvæ of the *noctua cubicularis*, the *tinea granella*, and the *anaeampsis cerealella*, all of them moths, and the two latter confining their depredations to stored grain.

Noctua Cubicularies.—The larvae of these moths are small caterpillars, which have been found very injurious to the wheat crop in England, by eating the grain before and after it is ripe. It is figured and described by Mr. John Curtis, in the Journal of the Royal Agricultural Society of England. They also exist in North America and are known by the names, *wheat-worm*, *gray-worm*, and *brown-weevil*. The name of *grain-worms* has likewise been applied to them, hence, they may have sometimes been confounded with the larvæ of the wheat-midge, *Cedidomyia Tritici*; they are, however, completely distinct, and do not belong to the same order of insects. The larva is from three to five-eighths of an inch long, of a yellowish brown color, it has twelve legs, and has the power of spinning and suspending itself by a thread. It feeds on the kernel in the milky state, and also devours the germinating end of the ripened grain. It is found in great numbers in the chaff when the grain is threshed. Unlike the maggots of the wheat-fly, with which they have been confounded, they remain devouring the grain until after the time of harvest. They have been seen in immense numbers upon barn floors after the grain has been threshed, but they soon crawl away and conceal themselves in crannies where they most likely undergo their transformations. They are supposed by some to be identical with the clover-worm. They may be distinguished from the maggot of the wheat-midge by their brownish colour, being three-eighths of an inch in length, having legs, and capable of suspending themselves by a thread of their own spinning. Whereas the wheat-midge maggot is of a deep

yellow colour, only one-tenth of an inch long, destitute of legs, and unable to spin a thread.

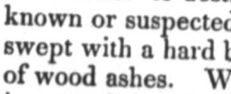
These destructive caterpillars may be separated from the wheat by threshing and winnowing; the chaff containing them should be put into large tubs and boiling water poured upon it sufficient to kill all the insects.

TINEA GRANELLA, or corn moth.—This insect sometimes attacks grain in the sheaf, but principally infests granaries, feeding on all sorts of grain, but most partial to wheat. The perfect moth does not exceed half an inch in length; its wings when laid over each other slope at the sides. The upper wings are whitish coloured, with dark brown and dusky spots; its body is brown variegated with white, and its head has a thick tuft of yellowish-white hairs. Thirty eggs or upwards are laid by each female; they are so minute as to be scarcely observable to the naked eye; one or two are attached to each grain of wheat. The larva is speedily hatched, and immediately bores its way into the grain, closes up the opening by which it entered, and remains in the interior till it eats up every thing but the husk; this process it keeps on repeating in different grains till it is full grown; it glues together all the grains which it has used, and tracks all the path over which it passes with a silken and somewhat excrementitious web; when full grown it leaves the chain of emptied grains on which it has fed, and runs across all the neighbouring grain, covering it with greyish-white webs.

The full grown caterpillar is about half an inch long and has 16 feet, its body is yellowish-white, its head brownish-red, and its neck marked with two transverse brown stripes. When running across the grain they are in search of a retreat in which to undergo their transformation, they get into cracks in the floor and around the corn bin, and each spins arounds itself an oval pod or cocoon about the size of a grain of wheat, from which in due time the full grown moth escapes. This insect prevails in all parts of North America and has been mistaken for the corn weevil.

In order to destroy these insects when the existence of the chrysalids is known or suspected, the floor walls and roof of the granary ought to be well swept with a hard brush, or washed with some caustic solution, such as the ley of wood ashes. When the caterpillars have effected a lodgment and the corn is not to be used for sowing, the whole of the grain should be kiln dried.

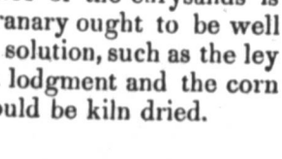
ANGOUMOIS MOTH.



Magnified Catterpillar.

Natural Size Catterpillar.

Magnified Moth.



Natural Size Moths.

ANACAMPSIS CEREALELLA, or *Angoumois Moth*, has been found to be more destructive in granaries in some provinces of France than the preceding kind. In its perfect state it is a little moth of a pale cinnamon-brown colour above, having the lustre of satin, with narrow broadly fringed hind wings of an ashen or leaden colour, two thread-like antennæ, a spiral tongue of moderate length, and two tapering feelers turned over its head. It lays from sixty to ninety eggs, placing them in clusters of twenty or more on a single grain. From these are hatched, in from four to six days, little caterpillars not thicker than hairs. They immediately disperse, and each one selects for himself a single grain and burrows into it at the most tender part, commonly where the

germ springs forth. Remaining concealed there it devours the mealy substance within the hull; and this goes on so secretly that the loss is only detected by the softness of the grain or by deficiency in the weight. The caterpillar is not more than one-fifth of an inch long, of a white colour with a brownish head, six small pointed legs, and ten very small prop legs. Having eaten out the heart of the grain, which is enough for all its wants, it spins a silken web or curtain to divide the hollow grain lengthwise into two unequal chambers, the smaller containing the rejected fragments of its food, and the larger cavity serving instead of a cocoon, wherein the insect undergoes its transformations. The insects of the first, or summer brood, come to maturity in about three weeks, remain but a short time in the chrysalis state, and turn to winged moths in the autumn, and at this time may be found in the evening in great numbers, laying their eggs on the grain stored in barns and granaries. The moth-worms of the second brood remain in the grain through the winter, and do not change to winged insects till the following summer, when they come out, fly into the fields at night, and lay their eggs on the young ears of the growing grain. Besides the two principal broods others are produced during the whole summer, the production of the insects being retarded or accelerated by differences in the temperature of the air. When damaged grain is sown it comes up very thin, the infected kernels seldom sprout, but the insects lodged in them remain alive, finish their transformations in the field, and in due time come out of the ground in the winged form."*

The Angoumois moth is unknown in England; but has been found in several parts of the United States, more particularly those between the thirty-sixth and fortieth parallel of north latitude; it has also been found in New England where the cold weather has probably checked its progress. There is reason to believe that it has been introduced into the States from Europe, *and persons fond of introducing seed wheat from foreign parts into this country should be on their guard, lest they bring in this plague also.*

These moths may be effectually destroyed by drying the damaged grain in an oven or kiln, at a heat of one hundred and sixty seven degrees, Fahrenheit, for a period of twelve hours. Or the heat may be reduced to one hundred and four degrees and the time lengthened to two days. Fumigation in close vessels with the gas of burning charcoal, is an effectual remedy which has the advantage of neither imparting a bad flavour to the grain, or impairing its powers of vegetating. A low temperature checks the propagation of the corn moth; the larvæ not being able to survive the winter in those places where the thermometer falls to zero.

CHAPTER VI.

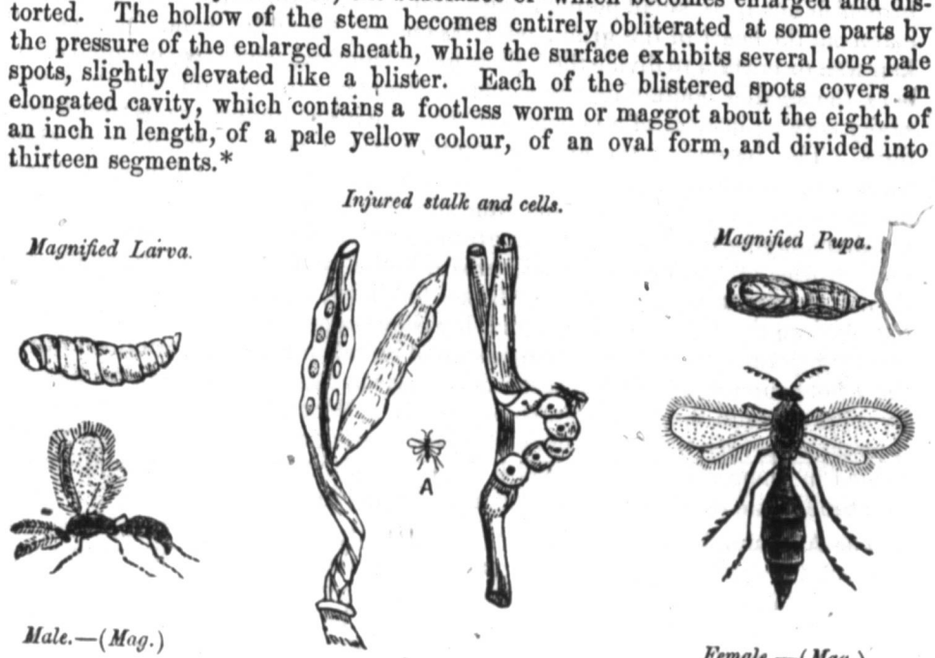
HYMENOPTERA.

Joint-worm—Habits—Ravages—and Preventives.

Under this order comes the Joint Worm, (*Eurytoma hordei*) an insect which has committed great depredations in the wheat crops of Virginia and other parts of the United States. The body of the Eurytoma Hordei is jet black, and slightly hairy. The head and thorax are opaque, and rough with dilated punctures. The hind body is smooth and polished. The thighs, shanks, and claw joints are blackish; the knees and other joints of the feet are pale yellow. The females are twelve or thirteen-hundredths of an inch long. The males are rather smaller, and are distinguished from the females by the following characters.

*Harris, who compiled the above from the "Memoires" of Reaumur.

They have no piercer. The joints of their antennæ are longer, and are surrounded with whorls of little hairs. The hind body is shorter, less pointed behind, and is connected with the thorax by a long stem or peduncle. The female lays several eggs in the outer sheath of the stalk of the wheat plant, above the joints, sometimes in the joint itself, the substance of which becomes enlarged and distorted. The hollow of the stem becomes entirely obliterated at some parts by the pressure of the enlarged sheath, while the surface exhibits several long pale spots, slightly elevated like a blister. Each of the blistered spots covers an elongated cavity, which contains a footless worm or maggot about the eighth of an inch in length, of a pale yellow colour, of an oval form, and divided into thirteen segments.*



JOINT WORM.—(*Eurytoma hordei.*)

The ravages of the joint worm, according to Harris, in the wheat fields of Virginia, were first observed in Albemarle County, about ten years ago, and have since extended to an alarming extent in many of the adjacent counties; the loss occasioned amounting often to one-third of the crop, in some cases, the farmers did not reap as much as they sowed. As the disease is seated mostly near the base of the straw, in or near the second or third joint, the greater part of the diseased portions will be left in the stubble when the grain is reaped. Most of the insects remain unchanged in the stubble until the following year, consequently it is of no use to plough under the stubble, as it has been found in Massachusetts that the insects undergo their transformations when so turned under ground, and easily make their way to the surface when the transformations are completed. The most effectual method then of destroying these insects is to burn the stubble containing them. All the refuse and straw unfit for fodder should likewise be burnt. These precautions should be observed for several successive years, and if carefully performed, will almost be sure to exterminate the *Eurytoma*.

"At the Joint Worm Convention, held at Warrentown, Virginia, in 1854, the following method was recommended:—Prepare well the land intended for wheat, and sow it in the beginning of autumn, with the earliest and most thrifty and hardy varieties, and do nothing to retard the ripening of the crop, by grazing or otherwise. Use guano or some other fertilizer liberally, particularly when seeding corn land or stubble. Burn the stubble on every field of wheat, rye, or oats, and all thickets or other harbors of vegetable growth, contiguous to the crop. Sow the wheat in as large bodies, and in as compact forms as prac-

* Patent Office Report, U. S., 1854.

ticable, and if possible, neighbours should arrange amongst themselves to sow adjoining fields in the same year. Feed all the wheat, or other straw, which may be infected, in racks or pens, or on confined spots, and in April set fire to all refuse fragments about the racks, and on or before the first of May carefully burn all the straw which has not been fed. The refuse of wheat, such as screenings, &c., should also be destroyed, as the pupa case is hard, and not easily softened by dampness or wet.."†

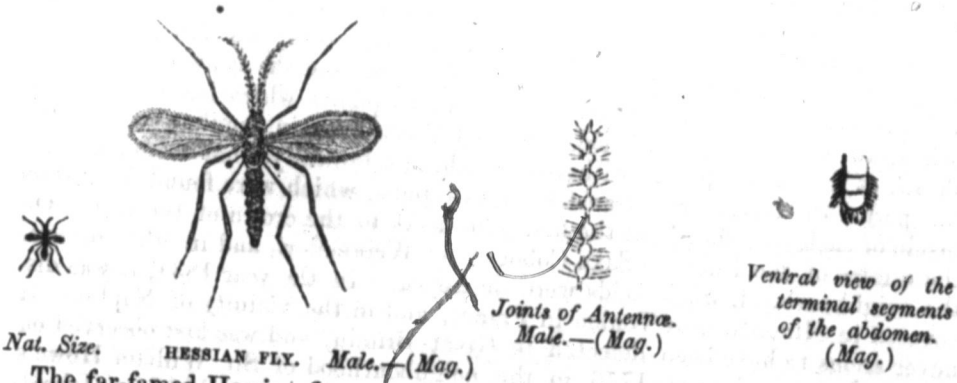
These directions are worthy of careful attention, as being the remedies proposed by those who have become painfully and practically acquainted with this destructive insect. A free use of manure and thorough tillage, by promoting a vigorous and rapid growth of the plant, is likely to render it less liable to suffer from the attacks of this insect. Large fields, sown with a liberal supply of seed, will probably escape better than those that are smaller and thinner sown, as the insects will not be able to penetrate so far when about to lay their eggs. Hence the advantage of neighours combining where possible, to have their wheat sown in a large block.

CHAPTER VII.

DIPTERA.

Cecidomyiæ—Hessian Fly—Wheat-midge—History—Devastations—Remedies.

Under this order are classed all insects having only two wings, with two little knobbed threads in the place of hind wings, and a mouth formed for sucking or lapping. The word Diptera signifies *two-winged*. The young insects hatched from the eggs of gnats and flies belonging to this order, are fleshy larvæ, usually of a whitish colour, and without legs.



Nat. Size. HESSIAN FLY. *Male.—(Mag.)* *Joints of Antennæ. Male.—(Mag.)* *Ventral view of the terminal segments of the abdomen. (Mag.)*

The far-famed Hessian fly, and the wheat midge, belong to the family called *Cecidomyiadæ*, or gall gnats. The insects of this family are very numerous, and most of them in the maggot state live in galls or unnatural enlargements of the stems, leaves and buds of plants, caused by the punctures of the winged insects in laying their eggs. The Hessian fly, wheat midge, and some others, differ from the majority in not producing such galls. The proboscis of these insects is very short, and does not contain the piercing bristles found in the long proboscis of the biting gnats and mosquitos. Their antennæ are long, composed of many little bead-like joints which are more distant in the males than in the other sex, and each joint is surrounded with short hairs. Their eyes are kidney shaped; their legs long and slender; their wings have only two, three, or four veins in them, and are fringed with little hairs round their edges; when not in use their wings are generally carried flat on the back. The hind body of

* Harris.

the female often ends with a retractile, conical tube, wherewith they deposit their eggs. Their young are little footless maggots, tapering at each end, and generally of a deep yellow or orange colour. They live on the juices of plants, and undergo their transformations either in these plants, or in the ground.

The *Hessian fly*. The American Entomologist, Say, was the first who satisfactorily determined the species and genus of this insect, under the name of *Cecidomyia destructor*. It obtained its common name from a supposition which seems well founded, that it was brought to this continent in some straw by the Hessian troops under the command of Sir William Howe in the War of the Revolution. The statement of Sir Joseph Banks in his Report to the British Government in 1789, that "no such insect could be found to exist in Germany or any other part of Europe," is not correct, for this insect or one like it, had long been known in the vicinity of Geneva; an account of it was given by Duhamel in his "Practical Treatise of Husbandry,"* and in a communication made to the Duke of Dorset, in 1788, by the Royal Society of Agriculture of France. It was not until the autumn of 1833, that this destructive insect, or a species closely allied to it, was observed in Hungary, whether from its previous rarity it had been overlooked, or had not found its way into the Austrian dominions, is not known. Kollar† states that it appears from a report transmitted to the Arch-Duke Charles, that in the beginning of June the ears of wheat were observed to droop and the straw to bend, on his estates at Altenburgh, although the crop was previously in fine condition. In a few days, patches on the poorest soil in different parts became entangled, as if matted together by heavy rains or high winds, which were supposed at first actually to have been the cause. This soon proved to be unfounded, for the mischief gradually spread from the poor to the best lands, until the whole crop was blighted. Two-thirds of the straw at least was laid in less than a week, and the work of devastation was completed by the heavy fall of rain which took place during the latter part of June. The straw thus prostrated produced only small abortive ears; the few grains they contained were shrivelled, and would scarcely ripen, and the straw was of a very bad quality. On examining the roots of those plants which had died off, the soft straw where the larvæ had stationed themselves in families, within the sheath of the leaf, appeared withered, tough, and brown, yet not wounded. At this period the larvæ were transformed into pupa, which were found in clusters inside of each leaf sheath, at the first joint next to the crown of the root. On the estates of the Duke of Saxe Cobourg, at Weikendorf, and in other parts of the neighbourhood, whole fields were destroyed. In the year 1834, it was discovered in Minorca, near Toulon in France, and in the vicinity of Naples. It never seems to have been detected in Great Britain, and was first observed on this continent in the year 1776, in the neighbourhood of Sir William Howe's debarkation on Staten Island, and at Flat Bush, on the west end of Long Island. Having multiplied in these places, the insect gradually spread over the southern parts of New York and Connecticut, and continued to proceed inland at the rate of fifteen or twenty miles a year. They reached Saratoga, two hundred miles from their original station, in 1789. They were found west of the Alleghany Mountains in 1797, having apparently advanced about thirty miles every summer. Wheat, rye, barley, and even timothy grass were attacked by them, and so great were their ravages in the larva state, that the cultivation of wheat was abandoned in many places where they had established themselves. In a communication by Mr. J. W. Jeffreys, published in the sixth volume of Buel's "Cultivator," it is stated, that soon after the battle of Guilford in North Carolina, the wheat crops were destroyed by the Hessian fly in Orange County,

* Page 90, 4to., London, 1759. † Kollar's Treatise.

through which the British Army, composed in part of Hessian soldiers, had previously passed. Harris, to whose valuable work we are indebted for these statements, seems to think that in this instance the chinch bug (*Lygæus leucopterus*) may have been taken for the Hessian fly, and he says, it shows how prevalent was the belief respecting the introduction of this fly by the Hessian troops, which opinion he thinks deserving of some credit.*

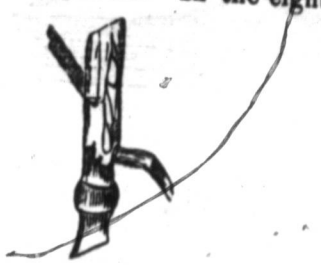
Nat. Size.

Joints of the Antennæ—(Mag.)

HESSIAN FLY. *Female.—(Mag.)*

The head, attennæ, and thorax of the Hessian fly are black, the hind body is tawny, more or less widely marked with black on each wing, and clothed with fine grayish hairs; the body measures about one-tenth of an inch in length. The egg tube of the female is rose-coloured, the wings are blackish, except at the base where they are tawny and very narrow; they are fringed with short hairs, rounded at the tip, and expand one quarter of an inch or more. After death the hind body contracts and becomes almost entirely black. The legs are pale red or brownish, and the feet black. The antennæ are surrounded with whorls of short hairs, the number of joints vary from fourteen to seventeen, besides the basal point which seem double. The form of the joint differs according to the sex; those of the male being globular, and those of the female, except at the base, oblong-oval.†

Two broods of this insect are brought to maturity in the course of a year, and the flies appear in the spring and autumn, earlier or later according to the latitude of the place. It has been asserted by some that the flies lay their eggs on the grain in the ear; whether this be true or not it is certain that they do lay their eggs on the young plant long before the grain is ripe, generally speaking as soon as the grain is sprouted, and begins to show a leaf or two, the flies appear in the fields, and having paired, begin to lay their eggs, which occupies them for several weeks. In the eighth volume of the *Cultivator*, there is an



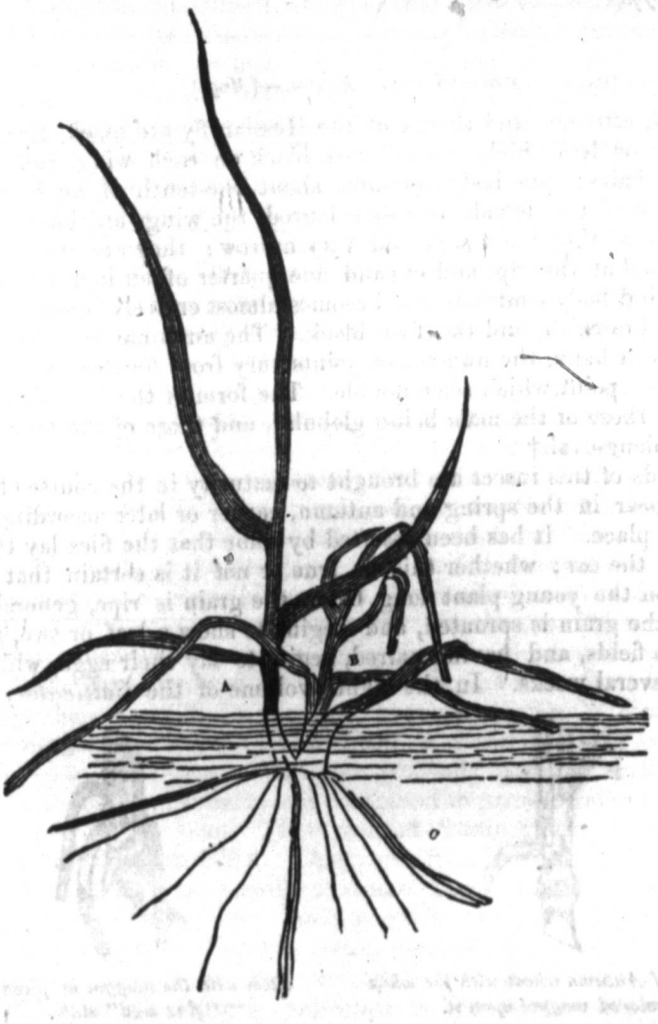
Stem of Autumn wheat with the white colored maggot upon it.

Stem with the maggot in pupa or "flax seed" state.

account, by Mr. E. Tilghman, of Queen Ann County, Maryland, of these insects, and the manner in which they deposit their eggs. He says: "By the second

*Harris. † Harris.

week of October, the first sown wheat being well up, and having generally put forth its second and third blades, I resorted to my field in a fine warm afternoon to endeavour, to satisfy myself, whether the fly did deposit the egg on blades of the growing plant. Selecting a favorable spot, I placed myself in a reclining position in a furrow, and had been on the watch but a minute or two, before I discovered a number of small black flies alighting and sitting on the wheat plants around me, and presently one settled on the ridged surface of a blade of a plant completely within my reach and distinct observation. She immediately began depositing her eggs in the longitudinal cavity between the little ridges of the blade." Dr. Chapman, who wrote in 1797, says, that the Hessian fly lays her eggs in small creases of the young leaves of the wheat. Mr. Havens, who wrote a history of this insect, which is contained in the first volume of the Transactions of the Society for the promotion of Agriculture in New York, says, that the fly lays her eggs on the leaves. In the fortieth number of the *Connecticut Farmer's Gazette*, Mr. Herrick says: "I have repeatedly, both in autumn



Appearance of a healthy [A] and of a diseased [C] shoot of wheat in autumn, the worms lying at [C].

and spring, seen the Hessian fly in the act of depositing eggs on wheat, and have always found, that for this purpose she selects the leaves of the young plant. The eggs are laid in various numbers on the upper surface of the strap-

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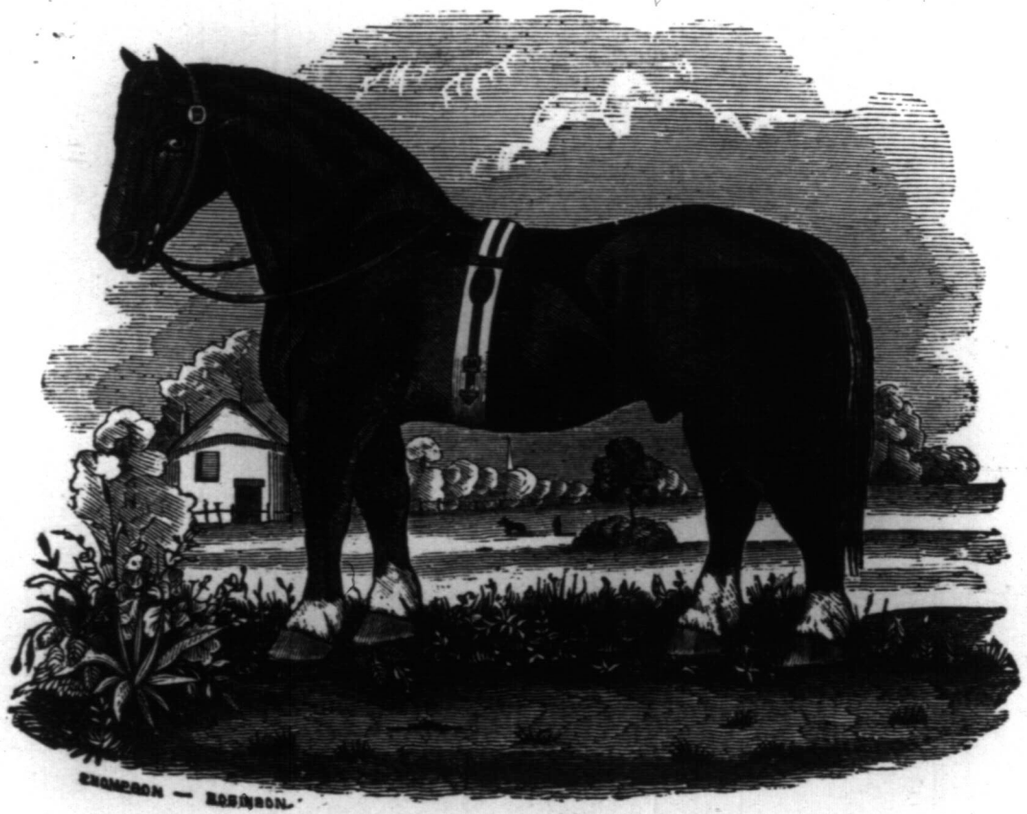
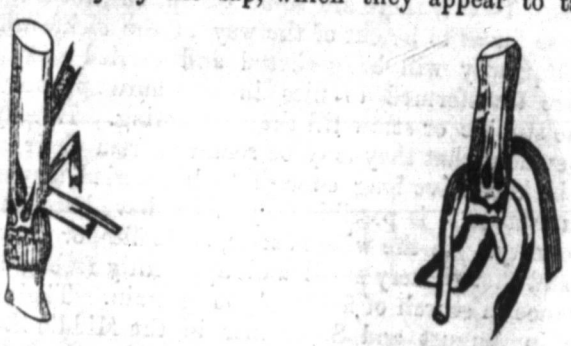


"CUMBERLAND."

Winner of First Prize as a Heavy Draught Stallion, at the Provincial Exhibition, Toronto, 1858. Imported from England. The property of David Rowntree, York Township. *See page* 176.

shaped portion, or blade, of the leaf." The number on a single leaf, he says, is often twenty or thirty, and sometimes much greater. The egg is about a fiftieth of an inch long, and four thousandths of an inch in diameter, cylindrical, translucent, and of a pale red colour. Under favourable circumstances, if the weather prove warm, they will hatch in four days.

"The maggots or larvæ, when they first come out, are of a pale red colour. They immediately crawl down the leaf, and work their way between it and the main stalk, passing downwards till they come to a joint, just above which they remain, a little above the surface of the ground, with the head towards the root of the plant. Having thus fixed themselves they become stationary, and never move from the place till their transformations are completed. They do not eat the stalk, neither do they penetrate within it, as some persons have supposed, but they lie lengthwise upon the surface, covered by the lower part of the leaves, and are nourished wholly by the sap, which they appear to take by suction.



Appearance of larvæ of the Hessian fly in the pupa (flax seed) state, on stems of wheat plants from which the leaves have been stripped.

They soon lose their reddish colour, turn pale, and become clouded with whitish spots; and through their transparent skins, a greenish stripe may be seen in the middle of their bodies. As they increase in size, and grow plump and firm, they become imbedded in the side of the stem, by the pressure of their bodies on the growing plant. One maggot thus placed seldom destroys the plant, but, when two or three are fixed in this manner around the stem, they weaken and impoverish the plant, and cause it to fall down, or to wither and die. They usually come to their full size in five or six weeks, and then measure about three-twentieths of an inch in length. Their skin now gradually hardens, becomes brownish, and soon changes to a bright chestnut colour. This change usually happens about the first of December."*

The insect in this form, has been commonly likened to a flax-seed, and this has been called the flax-seed state. While this change of the colour and texture of the skin is going on, the body of the insect, gradually becomes detached from the skin, and lies within it a motionless grub. This flax-seed shell has been correctly called a *puparium* or *pupa* case, because the pupa is subsequently matured within it. The process of growth goes on, and, by and by, on opening the leathery skin or puparium, you find the pupa so far advanced that some of the members of the future fly are discernible through the skin which envelopes and fetters it on all sides. Towards the end of April, and in the fore part of May, as soon as the weather becomes warm enough, the insects are transformed to flies, making their escape by breaking through one end of their shells.†

"Very soon after the flies come forth in the spring, they are prepared to lay their eggs on the leaves of the wheat sown in the autumn before, and also on the

* Harris. † Harris.

spring sown wheat, which begins, at this time, to appear above the surface of the ground. They continue to come forth and lay their eggs for the space of three weeks, after which they entirely disappear from the fields. The maggots hatched from these eggs, pass along the stems of the wheat, nearly to the roots, become

VIEW OF DORMANT LARVA TAKEN FROM THE LARVA CASE.

Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6.

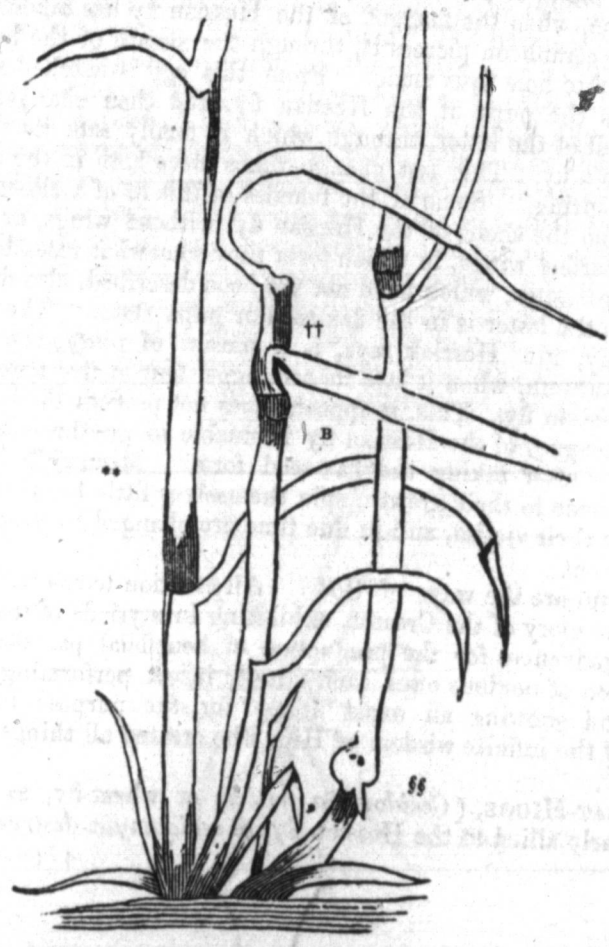
1. Magnified appearance of the worm when taken out of its larva case. 2. Magnified dorsal view of the worm or active larva. 3. Magnified view of the "flax seed" or larva case. 4. Magnified ventral view of the same. 5. Magnified lateral view of the same. 6. The pupa removed from the pupa case.

stationary, and take the flax-seed form in June and July. In this state they are found at the time of harvest, and when the grain is gathered they remain in the stuble in the fields. To this there are some exceptions, for a few of the insects do not pass down so far as to be out of the way of the sickle when the grain is reaped, and consequently will be gathered and carried away with the straw. Most of them are transformed to flies in the autumn, but others remain unchanged in the stubble or straw till the next spring. Hereby, says Mr. Havens, it appears evident that they may be removed from their natural situation in the field, and be kept alive long enough to be carried across the Atlantic; from which circumstance it is possible they might have been imported in straw from a foreign country. In the winged state, these flies, or more properly gnats, are very active, and though very small and apparently feeble, are able to fly a considerable distance in search of fields of young grain. Their principal migrations take place in August and September in the Middle States, where they undergo their final transformations earlier than in New England. They sometimes take the wing in immense swarms, and being probably aided by the wind, are not stopped in their course by mountains or rivers."* On their first appearance in Pennsylvania, they were seen to pass the Delaware like a cloud. Their numbers were so great that in wheat harvest the houses swarmed with them, to the extreme annoyance of the inhabitants. They filled every plate or vessel that was in use, and five hundred were counted in a single glass tumbler, exposed to them a few minutes with a little beer in it.†

Several means have been recommended for lessening or preventing the ravages of the Hessian fly; perhaps the most effectual method will be *to burn the stubble* immediately after harvest, and then ploughing and harrowing the land; as the greater proportion of the pupæ, from the spring laid eggs, remain in the stubble after harvest, it is evident that burning the stubble must get rid of so many of them. It is also recommended to procure seed from uninfected districts, but it is requisite that whole neighbourhoods should join in this precaution and persevere in it for two or more years in succession. It has been found in the States that *luxuriant crops more often escape injury than those that are thin and light.* From this we learn the importance of thoroughly working the land and bringing it to a high state of tilth before sowing wheat in it; a liberal use of fertilizing manures, and every thing that can be done in the way of early sowing or any thing that will insure a vigorous and forward state of the crop, will, in a great measure, act as preventives against the devastations of these destructive insects. Sowing the fields with wood ashes in the proportion of two bushels to an acre, in the autumn, and again in the first and last weeks in April, and as late in the month of May as the sower can pass over the wheat without injury to it has been found useful. Mr. Herrick, a writer in the American

*Harris. †Kirby and Spence.

Journal of Science, recommends, that, the stouter varieties of wheat ought always to be chosen, and the land should be kept in good order. If fall wheat is sown late, some of the eggs will be avoided, but the risk of winter killing the plants will be incurred, added to which they will still be liable to the insects depositing their eggs in the spring. Favourable reports have been made upon



Appearance of a healthy (**) and two diseased stalks of wheat, at harvest-time. (††) Stalk broken, from being weakened by the worms. (§§) Base of sheath swollen from worms having lain under it, and perforated by parasites coming from those worms. —*From Dr. Fitch's Report.*

the practice of allowing sheep to feed off the crop late in the autumn, and it has also been recommended to turn them into the fields again in the spring, in order to retard the growth of the plant till after the fly has disappeared; but this method must be regarded as very hazardous; and probably the practice of burning the stubble, procuring seed from uninfected districts, or fumigating infected seed with the gas of burning charcoal in tight vessels, or submitting it to the vapour of *chloroform* in similar vessels, together with judicious management of the soil, will be found the best means of lessening the evils arising from the depredations of this noxious insect.

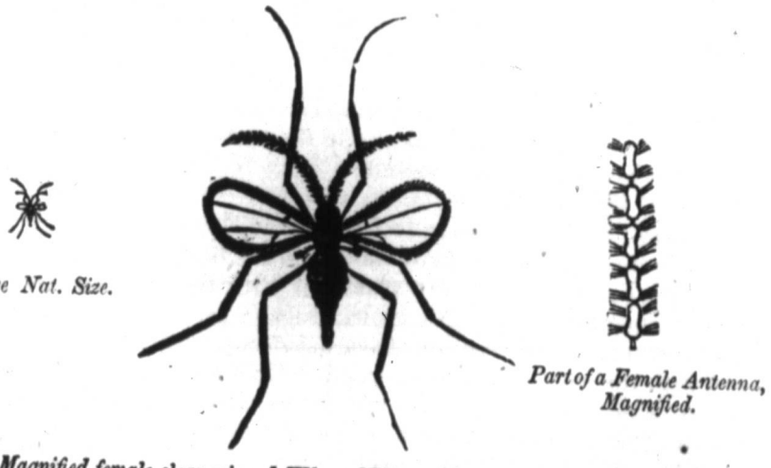
A benevolent Providence has ordered that the eggs, larvæ, and pupæ of the Hessian fly should be the prey of a host of parasitical insects. A large proportion, probably more than nine-tenths of every generation of this fly is thus

destroyed, according to Mr. Herrick's statement. These parasites are all minute Hymenopterous insects, similar in their habits to the true ichneumon flies. The chief parasite of the pupa is the *carapheon destructor* of Say, a shining black four-winged fly, about one-tenth of an inch in length. This has often been taken for the Hessian fly, from being seen in wheat fields in vast numbers, and from its being found to come out of the dried larva-skin of that fly. In the month of June, when the maggot of the Hessian fly has taken the form of a flax seed, the cerapheon pierces it, through the sheath of the leaf, and lays an egg in the minute hole thus made. From this egg is hatched a little maggot, which devours the pupa of the Hessian fly, and then changes to a chrysalis within the shell of the latter, through which it finally eats its way, after being transformed to a fly. This last change takes place both in the autumn and in the following spring. Some of the females of this or of a closely allied species come forth from the shells of the Hessian fly, without wings, or with only very short and imperfect wings, in which form they somewhat resemble minute ants.

Two more parasites, which have not yet been described, also destroy the Hessian fly, while the latter is in the flax-seed or pupa state. The egg parasite of the Hessian fly, Mr. Herrick says, is a species of *platygaster*, which is very abundant in autumn, when it lays its own eggs, four or five together, in a single egg of the Hessian fly. This, it appears, does not prevent the latter from hatching, but the maggot of the Hessian fly is unable to go through its transformations, and dies after taking the flax-seed form. Meanwhile its intestine foes are hatched, come to their growth, spin themselves little brownish cocoons within the skin of their victim, and in due time are changed to winged insects, and eat their way out.

So wonderful are the ways of God! All creation teems with life, and overflows with the glory of the Creator, exhibiting in myriads of instances the most exquisite contrivances for the production of beneficial parasitical animals, and the destruction of noxious ones, each minute insect performing its own proper functions, and showing an exact fitness for the purpose for which it was appointed by the infinite wisdom of Him who created all things and pronounced them good.

The WHEAT-MIDGE, (*Cecidomyia tritici*) or wheat-fly, as it is commonly called, is nearly allied to the Hessian fly, or *cecidomyia destructor*, both are destructive to the wheat crop, but differ in their mode of operation. The larvæ of the Hessian fly feeds upon the stem of the plant, exhausting its juices and



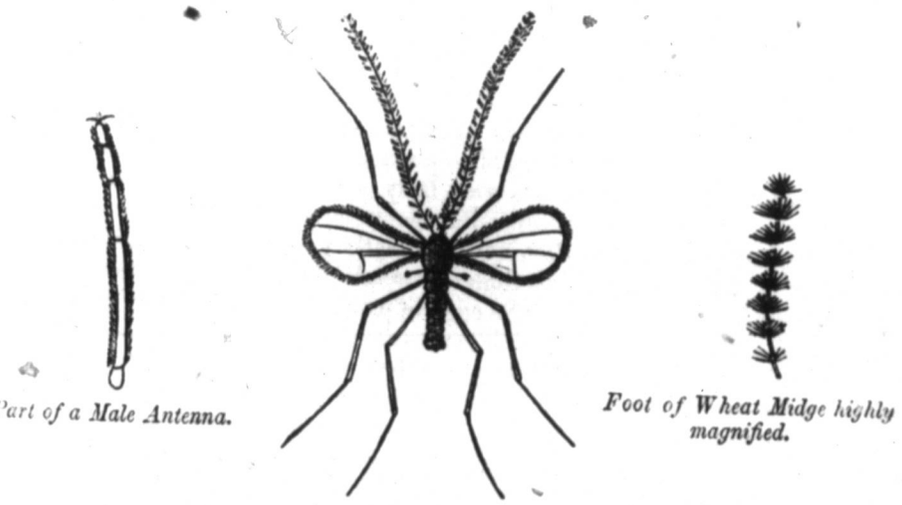
Wheat Midge Nat. Size.

Part of a Female Antenna, Magnified.

Magnified female clear winged Wheat Midge—(Cecidomyia Tritici.)

causing it at length to wither and fall. The wheat-fly, *cecidomyia tritici* lays, its eggs in the young ear of wheat just as it blossoms, where the young maggot as soon as it is hatched feeds on the pollen and juices of the ovary of the blossom, thus destroying the reproductiveness of the floret in which it is lodged, so that the seed never forms and the young germ shrivels up and decays.

"The wheat-fly is very minute, scarcely exceeding the twelfth part of an inch in length, and resembling a small gnat or midge. The female is orange-coloured, her eyes are intensely black, meeting on the crown, and covering nearly the whole head. The antennæ are pale brown, long as the body and clothed with longish hairs, they consist of twelve joints, which, except two at the base, are oblong, oval, and narrowed somewhat in the middle. The abdomen is rather short and tapering to the apex, which is furnished with an ovipositor nearly thrice as long as the body. The wings are incumbent in repose, longer than the body, yellowish white, and beautifully iridescent, or rainbow like, and fringed with delicate hairs. The two halteres, or poisers, are large and capitate. The six legs are long, slender, and nearly of equal length. The thighs and shanks are equally long. The tarsi, or feet, five jointed. The claws are very minute. The male is more rarely seen, they are usually smaller than the females and somewhat paler in colour. The antennæ of the males are twice as



Part of a Male Antenna.

Foot of Wheat Midge highly magnified.

Magnified Male of the clear-winged Wheat Midge.

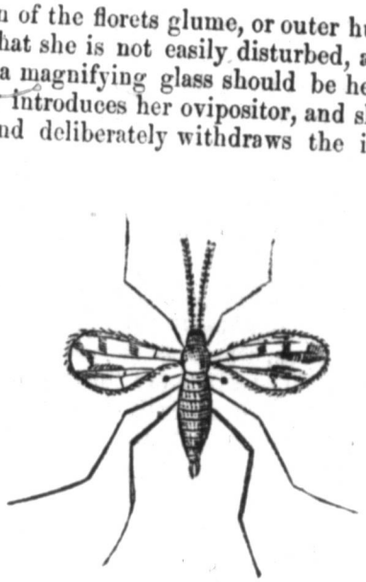
long as the body and consist of twenty four-joints, which, except the two basa ones, are globular. The ovipositor of the female is not seen, and would not by a stranger be supposed to exist in the ordinary condition of the fly; but is readily discovered by pressing the anus, or at the season of oviposition, or laying the eggs."*

The wheat-midge makes its appearance in wheat fields just about the time when the ear is beginning to emerge from its leafy envelope, most commonly in the early part of June. It readily escapes the observation of persons ignorant of its character, or not looking out for it, but to an intelligent observer it may be seen on calm evenings swarming about in small undulating clouds, in the manner of gnats and other kindred species, and it is occasionally seen also in the mornings and during the day. Each female usually chooses as the receptacle of her eggs an ear just emerging from the sheath, and she introduces them by means of her ovipositor into the floret, and while doing so keeps her arms nearly at right

*Rural Cyclopedia.

angles with the margin of the florets glume, or outer husk. She is so engrossed with her occupation that she is not easily disturbed, and may even go on with her operations though a magnifying glass should be held close to her by an observer; and she slowly introduces her ovipositor, and slowly parts with her eggs, and then cautiously and deliberately withdraws the instrument. So many as

Wheat Midge at rest, with its wings in their natural position—magnified.



Spotted winged Wheat Midge [C.Cerealis] *magnified.*

Magnified wing of spotted winged Wheat Midge.

thirty-five flies may sometimes be seen at one time upon one ear. Mr. Kirby, after some vain attempts to see the eggs pass through the long retractile tube, eventually witnesssed that curious phenomenon. "I gathered," said he, "an ear upon which some of the insects were busy, and held it so as to let a sunbeam all upon one of them; examining its operations under the three glasses of a pocket microscope, I could then very distinctly perceive the eggs passing, one after another, like minute air-bubbles through the vagina, the aculeus being wholly inserted in the floret." The eggs in passing through the oviduct, receive a coating of glutinous matter, which causes them to adhere firmly to the glumes or outer husk of the floret; and they are deposited in small clusters varying in number from two to upwards of twenty, and they amount in the aggregate to so vast a multitude as might seem to threaten terrible desolation or even utter destruction to wheat crops. The eggs are oblong, transparent, and of a pale buff colour, and are hatched in the course of ten or fourteen days. The minute maggots which proceed from them have the same general form as other dipterous larvæ, and are at first transparent and colourless, but soon begin to assume hues of straw colour, yellow, saffron, and orange, according to their age. They then feed upon the young germ, perhaps eating the pollen or fructifying principle of the flower, thus preventing the impregnation of the grain, so that the seed never forms, and the parts of fructification lose all their virus and shrivel and decay. So many as forty-seven have been counted in one floret, and even the smallest number ever present seem to be perfectly competent to do the work of destruction. The flies are not confined to wheat alone, but deposit in barley, rye, and oats, when these plants are in flower at the time of their appearance. The maggots have been found within the seed scales of grass, growing near to wheat fields. Being hatched at various times during a period of four or five weeks, they do not all arrive at maturity together. They do not exceed one eighth of an inch in length, and many, even when fully grown, are much smaller. In warm and sheltered situations, and in parts of fields protected from the wind by fences, buildings, trees, or bushes, the insects are said to be much more numerous than in fields upon high ground or other exposed places, where

the grain is kept in constant motion by the wind. Grain is commonly more infested by them during the *second* than the first year, *when grown upon the same ground in succession*, and it suffers more in the vicinity of old fields, than in places more remote. They prey on the wheat in the milky state, and cease their ravages when the grain becomes hard. They do not burrow in the kernels but live on the pollen, and soft matter of the grain, which they probably extract from the base of the germs. It appears from various statements, that very early and very late wheat escapes with comparatively little injury; the amount of which, in other cases, depends upon the condition of the grain at the time when the maggots are hatched. When the maggots begin their depredations soon after the blossoming of the grain, they do the greatest injury; for the kernels never fill out at all. When attacked in a more advanced state the grains present a shrivelled appearance. The hulls of the shrunk grain will always be found split open on the convex side, so as to expose the embryo.

Towards the end of July and the beginning of August, the full grown maggots leave off eating, and become sluggish and torpid, preparatory to moulting their skins, which takes place in the following manner. The body of the maggot gradually shrinks in length within its skin, and becomes more flattened and less pointed. The torpid state lasts only a few days, after which the insect casts off its skin, leaving the latter entire, except a little rent in one end of it. The cast skins are exceedingly thin and colourless, and, through a microscope are seen to be marked with eleven transverse lines. Numbers of the skins may be found in the wheat ears immediately after the moulting process is completed. Sometimes the maggots descend from the plants and moult on the surface of the ground, where they leave their cast skins. Late broods are sometimes harvested with the grain, and carried into the barn without having moulted.

Kernel of Wheat, the chaff pulled down to show the maggots in their usual situation.

A MATURE MAGGOT.—*Highly Magnified.*

After shedding its skin the maggot recovers its activity, writhing about, but taking no food. It is shorter, somewhat flattened, and more obtuse than before, and is of a deep yellow colour, with an oblong greenish spot in the middle of the body. Within two or three days after moulting, the maggots either descend of their own accord, or are shaken out of the ears by the wind, and fall to the ground. They do not let themselves down by threads, for they are not able to spin. Nearly all of them disappear before the middle of August, and they are rarely found in the grain at the time of harvest. In an account of the damage done by these insects in Vermont, in the summer of 1833, it is stated, that, after a shower of rain, they have been seen in such countless numbers on the beards of wheat, as to give the whole field the colour of the insect. Mr. E. Wood, of Winthrop, Maine, makes the following remarks: "This day, 9th August, a warm rain is falling, and a neighbour of mine has brought me a head of wheat which has become loaded with worms. They are crawling out from the husk or chaff of the grain, and were on the beards, and he says he saw great numbers of them on the ground." From this it appears that the descent of the insects is facilitated by falling rain and heavy dews.

Having reached the ground, the maggots soon burrow under the surface, some

times to the depth of an inch, those of them that have not moulted casting their skins before entering the earth. Here they remain, without further change, through the following winter. In June they are transformed to pupæ. This change is effected without another moulting of the skin. The pupa is entirely naked, not being enclosed either in a cocoon or in the preparium formed by the outer skin of the larva, and has its wings and limbs free and unconfined. The pupa state lasts but a short time, a week or two at most, and probably in many cases, only a few days. Under the most favourable circumstances, the pupa works its way to the surface before liberating the included fly; and when the insect has taken wing, its empty pupa skin will be seen sticking out of the ground. In other cases, the fly issues from its preparium in the earth, and comes to the surface with flabby wings, which soon expand and dry, on exposure to the air. This last change occurs mostly during the months of June and July, when great numbers of the flies have been seen apparently coming from the ground, in fields where grain was grown the year before.

The ravages of the wheat midge are not equally great in every place, and are very variable in their character, insignificant one season and excessive in another; but, in the aggregate of years, they are much greater than most farmers are aware of, or would readily believe. Mr. Kirby estimated the loss in a field of 15 acres which he particularly examined, at one-twentieth of the whole produce; or at an average of about two grains in each ear. Mr. Gorrie estimated the loss in the late sown crops in Perthshire, in 1828, at one-third of the whole produce, Mr. Bell, of Mid-Loch, writing in June, 1830, expresses apprehensions respecting the crops of Scotland, fully in accordance with Mr. Gorrie's estimate, and says: "Another year or two of the wheat-fly will make two-thirds of the farmers here bankrupts." Mr. Sidney says: "The author can assert that in the autumn of 1845, he found great quantities of the larvæ, not only in a first rate wheat district in Norfolk, but in other parts of the country. Ear after ear was examined by him, and the contents shown to farmers who never before had even heard of such things, and who were perfectly astonished when they saw them. Often has he also entered a barn and taken up a handfull of dust from the floor where wheat had been winnowed, turned out the little orange-coloured devourers, now in their membraneous cases, one after another, but scarcely ever met with any person who had previously noticed them. If they had been seen they took them for the seeds of some kind of weed.

This insect has been observed for several years in the northern and eastern parts of the United States and in Canada. It has been mistaken for the grain weevil, the Angoumois grain-moth, and the Hessian fly, and its history has been so confounded with that of another insect, also called the grain worm, in some parts of the country, that it is difficult to ascertain the amount of injury done by either of them alone. This grain worm has been already described in this essay, as the larva of a moth called *Noctua cubicularis* (order Lepidoptera), these larva are provided with legs, and suspend themselves by a thread of their own spinning; they remain depredating upon the ears of corn until after the time of harvest; and these characteristics will easily enable persons to distinguish them from the writhing maggot of the wheat-midge, destitute of legs and unable to spin a thread. The larvæ of the *Noctua cubicularis* crawl about. The maggot of the wheat-midge, move in a wriggling manner, and by sudden jerks of the body.

"The wheat-midge, or wheat-fly as it has sometimes been called, was first seen in America about the year 1828, in the northern part of Vermont, and on the borders of Lower Canada. From these places its ravages have gradually extended, in various directions from year to year. A considerable part of Upper Canada, of New York, New Hampshire, and of Massachusetts, have been visited

by it, and in 1834, it appeared in Maine, which it has traversed, in an easterly course, at the rate of twenty or thirty miles a year. The country over which it has spread, has continued to suffer more or less from its alarming depredations, the loss by which has been found to vary from about one-tenth part to nearly the whole of the annual crop of wheat; nor has the insect entirely disappeared in any place, till it has been *starved* out by a change of agriculture, or by the substitution of *late sown* spring wheat for other varieties of grain."*

In the report upon the census of the Canadas for 1851, so carefully and correctly compiled by Wm. Hutton Esq., we learn, that, "the worst wheat crops in Canada West in the year 1851, were in those counties where the weevil (wheat midge) was most prevalent. It committed the most serious depredations, in very many cases having rendered whole fields of most promising wheat, not worth the threshing. This fly, which deposits its larvæ (eggs) in the blossom of the wheat in order to feed upon the milk of the grain as it ripens, was unfortunately in that year most abundant in the counties of Frontenac, Lennox, Addington, Hastings and Prince Edward, and is travelling gradually west at the rate of about 9 miles every summer, and remains from 5 to 7 years in a locality. The only prevention yet discovered has been to sow early seed on early land, and very early in the Autumn, so that the wheat may blossom before its enemy takes wing, the period for which depends much upon the earliness of the season. So destructive was the fly in 1851, that the fine agricultural county of Lennox produced only 6 bushels per acre, Hastings about 10, and Prince Edward, Addington and Frontenac about 11. It had not in that year reached the county of Northumberland, but was very destructive in that county in the following year, 1852."

In this extract we find the popular name "weevil" used in speaking of the wheat-fly or midge; from page 18 of this essay it will be observed that the true grain weevil is a coleopterous insect, a slender beetle with a long snout, which does not attack growing crops of wheat, but confines its depredations to stored grain. The account given of the wheat fly in the Census Report is otherwise substantially correct and will be found to agree with that set forth in the pages of this essay.

The wheat-midge is generally believed in England, to have strong preferences and dislikes in reference to the commonly cultivated wheats, and has been supposed or observed to do prime injury to some, secondary injury to others, and little or no injury to others. One reason why some wheats are little affected by it may be, that they are generally sown at a time, which, conjointly with their habits, occasions their coming into ear at a period when the midge is not in a condition to attack them; and another reason why the same or other varieties enjoy comparative safety may be that they have too hard an envelop to be readily pierced by the midge's ovipositor. "The species of Woolly eared, Lammas red, and Rivet wheat," says Mr. Sherriff, "have been stated in East Lothian, to resist the attack of the fly. The two first mentioned kinds come into ear about a week sooner, the last about a week later than those commonly cultivated, and to these peculiarities owe their occasional escape, earing either before or after the general depositing of eggs takes place. The fly, however, does not always appear in strict conformity with the growth of the wheat plant, and the earing of different species is late or early, compared with the general crop, according to the time at which they are sown. The eggs of the wheat-fly are generally deposited when the ear is escaping from the sheath,—and when delayed beyond this period, the grains either become diminutive, or the maggots perish; and, therefore, a species of wheat in some measure impervious to the ovipositor

*Harris.

of the fly at this stage of the plant's growth must tend to mitigate the ravages of the fly. There is such a species cultivated in many countries, the name of which is the Polish wheat, *Triticum polonicum*. It is characterised by a large exterior chaff, which closely envelops the cups when the ear is escaping from the sheath, and at this time defends the flower in a great measure from the fly's ovipositor. I have grown the polonicum on a small scale amongst other kinds; and although it did not altogether escape the attack of the fly, it was much less injured than any of those which came into ear at the same time."

As the Polish wheat is very far from being eminent in other good agricultural qualities, the farmer must look for some other kind superior in quality yet possessing an equally thick chaff. Mr. Gorrie in the course of comparative experiments during the prevalence of the wheat-midge in 1829, found a wheat belonging to the species *Triticum tingidum*, nearly akin to the Rivet wheats, possessing a tall vigorous stem, yielding a very large produce, though inferior in quality to those of the common winter wheat, to be completely proof against the midge. "I had a fall of it," says he, "growing in the centre of a field of common wheat, which came into ear on the 22nd of June, exactly at the same time with the common variety. At that period I visited the field every evening for a week, and although the flies were numerously and busily employed on every ear of the common wheat (the half of which they destroyed), I, and my friends who went frequently with me, could only detect one solitary fly at work on the new variety; and although the ear was marked, no maggots could therein be aterwards discovered." The field of 15 acres examined by Mr. Kirby was planted partly with common white wheat, and partly with common red; and the result of his examination was, that the white wheat was destroyed at the rate of not quite 2½ grains per ear, while the red was injured at the rate of not quite 1½ grains per ear.

But all these experiments, it is feared, are more or less deceptive; and the different results may have been owing to the accidental circumstance of one crop being more exactly in the stage of fitness for the insect's use than another, or to the influence of the gregarious habits of the midge, whose swarms usually assemble and remain in the neighbourhood of the spot where they first make a settlement; and the farmer had better, perhaps aim at bringing the common varieties of wheat into early development before the time of oviposition of the fly, or delaying the season of blossoming until after the fly has laid its eggs, rather than trust to the reputed anti-fly properties of any variety.

Kirby recommended remedies or preventives directed immediately against the life or operations of the perfect fly as most likely to prove successful. "By a set of experiments first made upon a small scale," says he, "the intelligent farmer may possibly find out some method that will prevent this insect from laying its eggs in the wheat. These should commence as soon as the ear begins to quit the *folium vaginans* or hose; and they ought to be continued until the germen is impregnated, or to use the rural phrase, the wheat is off the blossom. Perhaps fumigations of tobacco or sulphur, if made when the wind is favourable, might render the ear disagreeable to this insect." But either fumigation of any such kind or medical aspersions, or any other applications which might be suggested, in order to be made on a sufficiently entensive scale to produce decided effect, would probably cost as much trouble and expense as the crop would be worth.

Remedies against the matured larvæ or pupæ have been recommended by some. "It is possible," says Mr. Duncan, "that Mr. Gorrie's plan of ploughing the wheat stubbles, and having what is called a skim coulter attached of such a construction as would cut and lay about an inch of the surface at the bottom of the furrow, would bury many of the pupæ at such a depth as to render their

resurrection improbable." This method, however, could not be adopted where the field was laid down with grass and clover seeds; which would also be a reason for not adopting the next remedy proposed, viz:

BURNING THE STUBBLE after the crop hes been taken off.. This, perhaps, as in the case of the joint-worm and Hessian fly will be found the most effectual method of lessening the numbers of the wheat-midge. When the stubble is short and scanty, the conflagration may be assisted by straw, or other inflammable matters, if it is rank the fire will be sufficient to heat the whole surface of the ground, and in all probability will destroy the greater part if not the whole of the pupæ, heat being speedily fatal to them. The farmer can take the precaution of laying down his clover and grass seeds with barley or some other spring crop, and even where clover has been laid down with wheat it would be better to sacrifice it, if at the same time, the destructive flies can be got rid of.

As a large proportion of the larvæ which live to become pupæ remain attached to the harvested grain till separated from it by the process of threshing, when they pass away with the chaff dust, and are apt to return directly or indirectly to the ground, care must be taken to prevent such a contingency, by carefully separating the chaff dust and burning it. A method of doing this has been suggested by Professor Henslow which is both simple and efficient. He says, "It occurred to me, that if a wire gauze sieve were placed before the winnowing machine in a sloping position, so as to allow the chaff to fall upon it, and then roll from it, the pupæ would pass through, and might be caught with the dust in a tray placed below the sieve. The plan was tried and found to answer satisfactorily; and doubtless might be made the means, were it generally adopted, of collecting and destroying myriads on myriads of the pupæ of this destructive fly.

"Several cases of the efficacy of fumigation in preventing the depredations of these insects, are recorded in the agricultural papers of the United States.* For this purpose brimstone has been used in the proportion of one pound to every bushel of seed sown. Strips of woollen cloth dipped in melted brimstone, and fastened to sticks in various parts of the field, and particularly on the windward side, are set on fire, for several evenings in succession, at the time when the plant is in blossom; the smoke and fumes thus penetrate the standing grain and prove very offensive or destructive to the flies, which are laying their eggs. A thick smoke from heaps of burning weeds, sprinkled with brimstone, around the sides of the field, has also been recommended. The Rev. Henry Colman, Commissioner for the Agricultural Survey of Massachusetts, says that lime or ashes strewn over the grain when in blossom, is a preventive which may be relied on with confidence. For every acre of grain, from one peck to a bushel of newly slacked lime, or of good wood ashes will be required, and this should be scattered over the plants when they are wet with dew or rain. Two or three applications of it have sometimes been found necessary."†

Harris says, that, in those parts of New England where these insects have done great injury, the cultivation of Fall wheat has been given up; and this course he believes to be the safest for some years to come. Spring wheat sown after the 15th or 20th of May, generally escapes the ravages of these destructive insects; but the time of sowing varies with the latitude and elevation of the place, and the forwardness of the season. Late sowing has almost entirely banished the wheat-flies from those parts of Vermont where they first appeared. Fall wheat, if grown, should be sown very early, so that the grain may have become hard before the flies make their appearance.

The wheat-midge is kept powerfully in check by some natural enemies sent in

* Cultivator, vol. V. page 136. † Harris.

mercy by Heaven as minute benefactors of our race. Particularly three species of ichneumons. One of these *Encrytus inserens* is black and shining, and about half the length of the wheat-midge; another, *Eurytoma penetrans*, is black with a brassy lustre, the abdomen glossed with blue, compressed and truncated behind; and the third, and most important, *Platygaster tipulæ*, is a minute black midge-like fly, with the legs and base of the antennæ red—the male quite black and rarely seen—the female of a pitchy colour, with a sharp ovipositorial point at her tail, exceedingly abundant and active in all infested fields in the months of July and August. Superficial observers have mistaken the ichneumon for the parent of the larvae of the wheat-midge, and have condemned it as the origin of the very evils it is destined to diminish. This little platygaster may be readily found on the glumes or chaffy covers of the wheat ears in the months of July and August. It runs rapidly over the ears and seems to know well those which are occupied by the larvæ of the midge. The female ichneumon deposits one egg, and only one, in each of the larvæ of the wheat-midge. When these eggs are hatched, the young maggots which they produce, and which are the catterpillars of the ichneumons, feed upon the fleshy or muscular parts of the caterpillar they are attacking, carefully avoiding the vital parts. At length the caterpillar they have been thus devouring dies, or, as frequently happens, it changes to the state of chrysalis before it is destroyed. The ichneumon caterpillars also pass to the chrysalis state, and either remain within the body of the dead caterpillar, or come out before they assume the fly state. Each species of ichneumon is restricted in its attacks to one, or at most to a few, species of caterpillar; and the females instinctively proportion the number of eggs they deposit in each individual to the relative size of their own offspring and that of the insect on which they are destined to prey.

CHAPTER VIII.

Conclusion—Farmers can learn to distinguish noxious insects without becoming thorough entomologists—Birds useful in destroying Insects—Insects most destructive in poor crops—Importance of well working land—Fallows—Wheat-fly worst in old settlements—Travel from East to West—Whole neighbourhoods should combine in adopting remedies—particularly the one sometimes adopted of starving out the Wheat-fly.

From the foregoing pages it will be seen that all those insects which have caused so much loss to the farmer by their devastations amongst his principle crop, wheat, are intimately known and their origin and habits familiar to scientific men. Order is Heaven's first law, and the same Almighty power that keeps the planets in their courses, and orders their goings, does not disdain to govern the tiniest insects by the same immutable law. To trace this harmony and evidence of design in the works of the creator has been the study of the lovers of natural history; and the conviction that there was such a law, assisted them greatly in their investigations. The scientific arrangement of the different orders of insects is so perfect that although it has been computed that there are upwards of 400,000 varieties or species of them, yet a naturalist has but to mention its generic and trivial names, and thus by the aid of two words alone he can speak of any one of them so distinctly that an entomologist in any part of the world knows instantly the very species that is meant. Now, it is not to be supposed that every farmer can become an experienced entomologist; but, it is not too much to expect that he will endeavour to make himself practically acquainted with those destructive insects, whose effects he so often painfully experiences in the devastation of his most valuable crops. Their ravages are of so appalling a nature as sometimes to blast the best founded hopes of the husbandman, and threaten to entail all the horrors of famine upon the land; yet their

species are not very numerous, and in the preceding pages the intelligent agriculturist will find the result of the investigations of learned men in Europe and America with regard to the nature and habits of those insects most injurious to the wheat crop. It should be a source of encouragement to the farmer when threatened with their ravages, to reflect that he has not to contend with a minute enemy, whose nature and habits are shrouded in mystery: for not only have these been clearly and distinctly detailed by careful and experienced observers, but the results of their investigations are within his reach, and at the same time are of such a nature as easily to be understood. Destructive insects are under the control of a superintending providence; they have their appointed tasks and are limited in the performance of them; if a destructive species should for a while preponderate, yet counter checks are provided, and, as has been seen, many of them become the prey not only of birds and quadrupeds, but even of their own race. There is no reason to suppose that any new species are created from time to time; those that are now attracting observation from their remarkable depredations, have either been brought to this country from other lands or, by the clearing of the forests, being deprived of those shrubs and plants on which they subsisted, are in a manner compelled to resort to cultivated plants for food. The wanton manner in which insect-eating birds are destroyed, deprives man of a most valuable auxiliary in keeping noxious insects within bounds, and, even when not recklessly destroyed, the neglect of providing ornamental shrubs and trees about Canadian dwelling houses, entails the loss of the valuable services of these feathered destroyers of the insect race, who would otherwise be encouraged to increase and multiply, if the necessary shelter were provided. The naked and desolate appearance of Canadian farms without a single ornamental tree or shrub, has long been a reproach to the country; let it be hoped when farmers find that these plantations are not only ornamental but useful, they will take pains to procure them. In "Anderson's recreations," it is stated, that a cautious observer having found a nest of young jays, five in number, remarked that each of these birds while yet very young consumed at least fifteen full sized grubs in one day; he then goes on to calculate that this one family of jays, including their parents, would consume twenty thousand grubs in the course of three months; if these jays were encouraged to remain or return to the same spot, we can easily conceive what myriads of destructive grubs would be removed by these birds and their descendants in the course of two or three years.

But perhaps the too anxious desire of the farmer to hasten to grow rich, which leads him to over crop his lands, or prepare it in a hasty and slovenly manner, has proved one of the greatest encouragements to the devastations of noxious insects. It is well known that animals in a sickly state are always more liable to the attacks of vermin, and it is equally true of plants, that the want of a healthy and vigorous growth encourages the attacks of parasitical insects. From what has been stated in the previous pages it will be seen that this has proved to be the case both in Europe and America. Baron Kollar mentions that in a report made to the Arch-Duke Charles of Austria on the Hessian fly, its ravages first commenced on patches of the poorest soil, and then gradually proceeded to the plants growing on the best. And in the United States, according to the authority of Harris, it has been found "*that luxuriant crops more often escape injury than those that are thin and light.*"

From this the farmer will see the importance of thoroughly working his land and bringing it to the highest state of tilth. Too often he has been encouraged by the high prices which have lately been given for wheat, to put in that grain after peas or other spring crops; the consequence is that the larvæ of many destructive insects which abound in the stubble of such crops are turned under

with a slight furrow in a position most favourable to come forth in summer and destroy the plants of growing wheat, the well known inferior luxuriance of crops so put in proving an encouragement for the attacks of such insects.

A naked fallow will always be found the best preparation for the wheat crop. By it the soil becomes thoroughly pulverized and mellowed, and rendered fit for the reception and growth of the young plants, an opportunity is afforded to rake up all the weeds and roots of plants, which are often full of the eggs of insects, and which can then be burnt. The eggs, larvæ, and burrowing adults of insects are also destroyed by mechanical and chemical action, and partly by exposing them to the attacks of birds. Facility is also afforded for the early and effective sowing of the wheat, which cannot be done when it is sown after a crop raised the same summer on the ground. From the investigations of that eminent chemist Liebig, it has been found that a summer fallow enriches the land by the disintegration of its mineral constituents, the dissolving of its organic remains, and the general results within it of chemical and electric action, so that one-half of the manure which would otherwise be required is sufficient for the luxuriant growth of the crops that follow.

The weeds and rubbish that collect around large stones and stumps of trees, and the briars that are often allowed to gather in fence corners, all prove to be harbours and an encouragement for the resort of destructive insects; it has been found that in the neighbourhood of such places, crops suffer the most from their devastations. The farmer then, has an additional inducement why he should get rid of such unsightly objects, as he thereby not only improves the appearance and value of his property, but lessens the casualties to which his crops are subjected by the ravages of destructive insects.

The theory that the wheat flies are most destructive on poor and worn out soils, is borne out by the fact, that on this continent they have commenced their ravages in the oldest settlements and from thence have gradually followed the progress of emigration and consequent clearing of the land. In Canada their progress has been from East to West, and the only exception to this rule has been in the state of Maine, where they advanced in an easterly direction, possibly because the Western part of the state was first settled, and the flies have only followed their usual instinct, in first commencing their depredations in the old and worn out settlements and gradually spreading to the later cleared ones. From the Canada Census Report for 1851,* already quoted, we learn that the wheat fly is travelling gradually west at the rate of about nine miles every summer. When we connect with this circumstance the fact, that in Vermont and other places the wheat fly has been *starved out*, by abstaining from sowing Fall Wheat in those parts, and sowing the Spring Wheat so late as to escape the season in which the flies deposit their eggs, it becomes a matter for serious consideration whether it would not be well for the farmers in Canada in the neighbourhood of the infested districts, to agree not to sow any fall wheat for two to three years, and thus interpose a belt of country, from two to three or more miles in width, between the infected and non-infected districts. From the great prices which are procured for fat cattle, and the rough grains, it is a question whether the production of them would not be equally remunerative with that of wheat; added to which is the certainty of the fact, that sooner or later the farmers, unless some precautionary measures are taken, will suffer in their turn from the attacks of the fly, and possibly be compelled to adopt an alternative, which, had they observed in time, would have averted the plague not only from themselves, but from their neighbours further west.

Whatever measures may be adopted either in the way of prevention or

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William Hutton, Esq.

remedy, it will be necessary for whole neighbourhoods to combine in observing them, otherwise they will prove of no effect. In the foregoing pages the result of the observations and experience of persons who have been practically acquainted with the evils in question, have been set forth for the instruction and information of the Canadian farmer. These remarks have necessarily been very brief, but it is hoped that they will be sufficient to enable the agriculturist to identify the insects most injurious and beneficial to his crops, to become acquainted with their habits, and to point out the best methods of repelling or destroying those which are most detrimental either in the larva, pupa, or perfect state. This information is the more necessary, since the insects which are the most destructive, the Hessian fly, the wheat midge, and the joint worm, are so minute as scarcely to be distinguished by the naked eye, without careful observation, and consequently their presence is apt to be overlooked until their ravages show, too late, where they have been. The study of the natural history of these insects will tend to impress upon those observing them a conviction of the providential superintendence of an Almighty and all wise Creator. The losses which they suffer from the devastations of such minute creatures will teach them a lesson of humility, and impress upon them a sense of dependence upon Him whose servants these insects are, who can at any moment afflict them with these plagues, and who in mercy hath promised to restore to the well-doing "the years that the locust hath eaten, the canker worm and the caterpillar, and the palmer worm, my great army which I sent among you."

DISEASES OF WHEAT.

MILDEW, known in all ages—Various opinions respecting cause of—True origin of—Fungus plant *Puccinia graminis*—Remedies—Clay soils offer greatest resistance to mildew—Moist weather favourable to it—Judicious culture of the soil a good prevention—Early sowing—Clean state of land—Application of salt a good remedy—RUST—caused by a fungus plant—Two varieties *Uredo rubigo* and *Uredo linearis*—Remedies same as those for mildew—thick crops less liable to attack than thin ones—Frequent repetition of wheat crop encourages these diseases—No amount of manuring will justify frequent cropping with wheat—SMUT—Two species—*Uredo segetum*—*Uredo fœtida*—Astonishing fecundity of these fungi—Remedies—Steeping in certain solutions—Lime water—Ley from wood ashes—Brine—Glauber salts—Even crops suffer the least—Importance of thoroughly working the land—Healthy and vigorous crops best resist the attacks of insects and diseases—wheat thinned out by snow drifts liable to smut—reason why—importance of scientific researches into these diseases—Farmers cannot apply proper remedies until their true nature is discovered.

The principal diseases to which the wheat crop is liable are *mildew*, *rust*, and *smut*.

Mildew has been known and dreaded in all ages as one of the greatest foes of grain crops, and as one of the mightiest instruments employed in the hands of the Almighty when he has seen fit to scourge a land with the horrors of famine. Its devastating nature was well known to the ancient Israelites. When their crops were blasted with mildew, God, by his prophet Amos, reminded them, "I have smitten you with blasting and mildew, when your gardens and your vineyards, and your fig trees, and your olive trees increased, the palmer worm destroyed them"—and again by the prophet Haggai, "I smote you with blasting and with mildew, and with hail in all the labours of your hands." It was also known to the Greeks. Theophrastus, in his "History of Plants" written about 320 years before Christ, observed that it occurs more frequently to corn

than to pulse; the Greeks found by experience that crops growing on high lands were seldom attacked by this disease, but that when situated in hollow places, surrounded by hills, where the winds could not get at them, they were more frequently infected. To the Romans the mildew was known under the name of "rubigo." Pliny in his "History of Plants," tells us, that the prevailing opinion was that this disease arises from certain dews settling upon the corn and obtaining a burning quality from the intense heat of the sun. He, on the contrary, thought that the disease arose from cold, and that the infection first occurred during the absence of the sun, and always about the new or full moon. Columella says that mildew is induced by hoeing grain crops during wet weather. Horace in his Odes speaks of it as the "sterile rubigo" and Virgil alludes to it in his Georgics:

> "Mix et frumentis labor additus, ut mala culmos,
> Esset rubigo, &c."

The Greeks and Romans were conscious of the destruction it would inflict on their crops, and regarded it as an instrument of vengence directed by a particular deity, to whom they applied the same name as that by which the plague was known. A festival to propitiate this deity, entitled *Rubigalia* was instituted by Numa 704 years before the birth of Christ. Reddish coloured bitches were sacrificed because the lesser dog star was then in the heavens, and was considered unpropitious to corn.

In the prophet Joel, where the Almighty promises to the Jews, "I will restore to you the years that the locust hath eaten, the canker worm and the caterpillar, and the palmer worm,"—this passage is rendered in the Latin Vulgate, "Et reddam vobis annos, quos comedit locusta, *bruchus*, et *rubigo*, et *eruca*." Now, under the head weevil, it has been pointed out in this essay, that one of the most destructive insects injurious to the farmer is the *Bruchus pisi* or pea weevil, so that the latter part of this passage from the Vulgate may be rendered, "the *weevil*, the *rust* or *mildew*, and the *caterpillar*"—which singularly enough are the subjects of consideration in the present treatise.

The mildew has long been known in Great Britain as one of the greatest scourges of the farmer. A writer in the 9th volume of the Quarterly Journal of Agriculture treating of it says:—"Of all the other diseases which attack our cultivated plants, not one is so destructive as the mildew. It is the plague of our wheat crops. So constantly present is this destructive disorder, that in the fairest fields of wheat, grown in the richest corn districts of England, and in the most genial years, I never saw a single acre entirely uninfected. Every year the farmer is more or less injured by this disease; for the produce of each acre of wheat is unquestionably reduced annually several bushels. Yet those who suffer most by the loss, the farmers themselves, are almost universally ignorant of the fact, and their attention is rarely arrested by it till a year occurs in which their crop of wheat is nearly annihilated."

Opinions respecting the cause of mildew are various. It is ascribed in the writings of ancient naturalists, in the writings of modern agriculturists, and in the opinions of practical farmers of the present day to a number of causes, some of them very conflicting and some very absurd. As we have seen before, the Romans in the time of Pliny ascribed mildew to the settling of certain dews upon the corn, and to its obtaining a caustic quality from the heat of the sun. Pliny himself ascribed it to cold. The French agriculturists of the early part of last century imputed it to dry gloomy weather, about the time of the corn being at the height of its vegetation. M. Duhamel concurs with this opinion, saying—"I have many times observed that when a hot sun has succeeded dry hazy weather, the corn became rusted within a few days after. The distemper is not

common in clear and dry hot years; but when spring is wet, the finest fields of wheat run great hazard of being destroyed by the mildew, which generally appears upon the breaking out of the sun in the morning, after close and sultry weather, during which there has not been any dew."

M. Tillet ascribes mildew to a sharpness in the air in dry cloudy weather, which breaks the vascular tissue of the stems and leaves, and makes them discharge a thick oily juice of such a nature as to be changed by heat into a rusty powder.

Other writers of the last century supposed it to be a thick clammy vapour which settled npon the stems of the grain and so stopping the pores as to prevent perspiration, and impeding the circulation of the sap. A modern writer, Mr. R. Somerville, in a communication to the Board of Agriculture, ascribes mildew to the attacks of insects introduced with the manure; these insects however are found to be minute *acari*, which are almost always found upon decaying vegetable matter, and which in the case of mildew is the follower and not the cause of the disease.

The true origin of the Mildew has been found to be due to the regular parasitic growth of the *Puccinia graminis*, a fungous plant, belonging to the hypodermii division of the eutophyti class of coniomycetes. The name *Puccinia*, is derived from a Greek work which signifies "closely" or "thickly," and alludes to the crowded manner in which the minute fungi are packed in the tufts and patches in which they grow. When a stem of wheat begins to be mildewed, a number of dark coloured spots will be seen under the epidermis, some of an orange hue, and others of a dark brown tinge; in a short time the outer cuticle is ruptured, and through the openings are protruded dark clusters of spores, amassed in dense, diffuse tufts, often confluent or running into one another, so as to form long parallel lines, and commonly possessing at first a brownish

PUCCINIA GRAMINIS [*Common Mildew.*]

yellow colour, and changing afterwards to black. The spores or seed vessels generally grow immediately beneath the stomata, (or openings of the pores,) of the stems, and after they burst through the epidermis, they appear, under the microscope, like dense masses of pear shaped bodies, all distinct from one another, exhibiting diversities of form and outline, and each resting on a stalk into which it gradually tapers. Two compartments or chambers exist in every spore, and are filed with sporules, or the puff-like and surpassingly minute rudiments of another race of fungi. So wonderfully small are not only the sporules but the spores, that in the opinion of Sir Joseph Banks, from 20 to 40 spores may germinate in the hollow beneath any single stoma, (or mouth of a pore); while the stoma itself cannot possibly be detected by the naked eye, and requires to be seen through a good microscope.

The ribbed appearance presented by a stem of wheat when seen through a common magnifying glass, is caused by alternate longitudinal partitions of the epidermis or rind, the one set raised and imperforate, and the other set depressed

and furnished throughout their length with one or two rows of stomata or minute orifices, which in dry weather are closed, and in wet weather are open, and which serve the purpose of imbibing moisture according to the wants and condition of the plant. The leaves and glumes or chaffy covers of ears of wheat are provided with similar stomata, which also are to be found on the leaves, stems and branches of all plants, and are the means provided by nature through which plants obtain necessary moisture. Now these stomata, while imbibing moisture, also take in with it the sporules or seeds of the *puccinia graminis*. Each of these fungous plants sheds some hundreds of sporules, lighter and more minute than those of the puff ball; and as even a healthy crop of wheat produces myriads of *puccinia*, while a mildewed crop supplies inconceivably numerous myriads, we can imagine what vast invisible clouds of sporules are wafted by every wind during the sporing period, which lasts from May till October, and how they must become intimately mixed with all the dews and moisture which the thirsty plants imbibe. The Rev. Edwin Sidney, in his work entitled "Blights of the Wheat," says: "The rapidity with which mildew sometimes spreads is astonishing. Only let the circumstances be favorable, and millions upon millions of sporules seem ready to enter the stomata, and germinate beneath them. The atmosphere is charged to an inconceivable extent with such invisible organs of reproduction. Fries declares the sporules to be so infinite that they rise like thin smoke into the air by evaporation, and are dispersed in innumerable ways, as for instance, by the attraction of the sun, by insects, by wind, by elasticity, or by adhesion. He asserts that in one individual he calculated, on good grounds, that there were at least ten millions if not more. Thus a stoma can scarcely ever perform the function of inhalation without taking in more or less of these sporules; and it is a happy circumstance that they refuse to grow except in certain places, and under peculiar conditions, for if their vegetation were general the produce of the earth would be almost entirely consumed by them."

When the sporules of puccinia have entered the stomata of wheat, and effected a lodgement beneath the epidermis or rind of the plant, they both prey upon the tissues, and intercept a portion of the sap which ascends from the roots for the forming and nourishing of the grain; hence the grain never comes to perfection, but shrivels up, containing comparatively much bran and little flour, so that wheat which has been mildewed, has been found from accurate investigations to lose from 31 to 75 per cent. of flour.

Remedies of Mildew. From the above account of the nature of mildew we may easily perceive that it would be impossible wholly to exterminate the fungous plants which are the cause of it. But though it cannot be wholly exterminated, yet the power of controlling it remains in the hands of the observant and skilful agriculturist. The conditions of soil and culture, and the healthy or unhealthy state of the wheat plants, upon which the progress of mildew very much depends, may be powerfully modified by the skill and the arts of enlightened husbandry. All soils are subject to mildew, but some yield more readily to it than others. Clay soils offer the greatest resistance to it, in consequence of their tendency to keep up an equable temperature about the plants, and thus save them from frequent vicissitudes of heat and cold. Calcareous and sandy soils, on the contrary, from their opposite tendency encourage mildew on the crops raised upon them, hence the importance of an abundant mixture of clay among a sandy soil, at once improving its texture and lessening the tendency to mildew.

Moist and "muggy" weather has been found to be most favourable to the spread of mildew, and although the farmer cannot influence the weather, yet by judicious surface draining of all marshy places, and subsoil draining of all wet fields, much might be done to ameliorate the very climate, and remove the

cause of those damp unwholesome fogs which may often be seen to hover exclusively over moist situations, and which are a fertile cause of the spread of mildew.

The judicious culture of the soil, bringing it into such a state as is most favourable to the health and vigour of the wheat plant, has been found a good preventive. A writer in the Journal of the Royal Agricultural Society of England says :—"A general healthy state of the wheat plant without any over luxuriance of vegetation, is most likely to secure a crop against the attacks of the rust and mildew fungi; but whatever tends to render the plant sickly, whether it be excess of heat or cold, drought or wet, sudden changes of temperature, poverty of soil, over manuring, shade, &c., must be considered as a predisposing cause to these diseases." Another author remarks, "wherever the farming is of the best kind, and where drainage is good, the mildew fungus will not be found in any alarming degree. Just as the clean skin of animals is a defence against nauseous living parasites, so by an analagous method, the soil will be rendered free from the destructive fungi which cause mildew in corn. Improved domestic habits in our peasantry, are well known as tending to check the spread of epidemic diseases, and in the same way a better system of cultivation will avert diseases from our corn fields. Mildew was once more prevalent than it is at present, and doubtless its diminution is in a great measure to be ascribed to a better husbandry."

All varieties of wheat are liable to mildew, but some are more liable than others. The white is generally the earliest affected, and the bearded wheat the latest; the cuticle of the latter being of a firmer texture,* the openings of the stomata offer more resistance to the entrance of the sporules, and when any of these have entered, the harsh skin does not so readily yield to the outbursts of the fungi as they are being developed.

As a general rule *early sown wheat* is more likely to pass the time of blooming before the crop becomes attacked extensively. Late sown crops are green and full of sap at the very season when the moist chill dews of autumn are most rife, and are therefore more liable to the vigorous attacks of mildew. Excessive manuring, or any combination of circumstances which will tend to make a crop very rank, invites the attack and spread of mildew.

A clean state of the land is a preventive against mildew. *A foul state* is an encouragement. Weeds, especially those which come early to maturity, are all harbours for the mildew fungi, where they feed and multiply preparatory to severe and extensive attacks upon the wheat plant. "Mildew," says the Rev. Edwin Sidney, "will seldom prevail to any extent where the precaution of hoeing the land and keeping the surface clean is observed, but wherever there are many weeds on the land, the straw will be generally found more or less affected by it. The author can say from experience, that he has seldom, if ever, failed to meet with it in unclean lands."

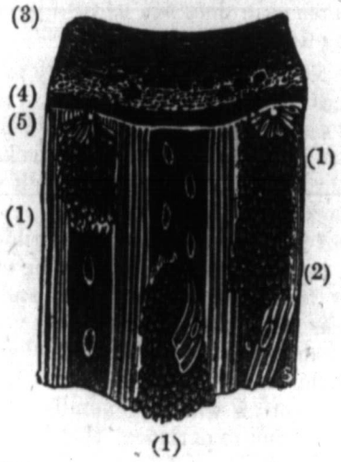
The steeping of seed corn in various mixtures is of no benefit in preventing mildew; it may possibly be a defence against the sporules that are lying in the ground and prevent their absorption by the roots of the plants, but they can offer no resistance to the attacks of the puccinia when the plants are in bloom and are assailed externally.

A solution of common salt has been found beneficial in killing the mildew fungus, and thus acting as a cure for the disease. Hence wheat grown by the sea side has been found to be free from attacks of mildew. Well authenticated instances of the advantages of using salt as a cure for mildew are on record, the remedy has been tried by many and found to be successful. The proportion of

*In consequence of containing more siliceous particles in its composition.

salt is one pound to a gallon of water, laid on with a plasterer's brush, the operator walking down one furrow and up another, thus sprinkling both sides of the land. Or the mixture may be applied with a watering pot; in either case, there must be a second person to replenish the supply to the operator. Two persons will thus sprinkle four acres a day. The *modus-operandi* of the salt destroying the puccinia is this: this plant being a fungus, its principal constituent is water, upon salt being applied, the watery particles are immediately absorbed, and thus the mildew plant is destroyed. The action of salt upon mushrooms, in making mushroom catsup, explains this theory.

RUST is also a disease of the wheat plant caused by a minute fungus of the coniomycetous order of plants. It is commonly ascribed by botanists to two species of the genus Uredo—*Uredo rubigo*, and uredo *linearis*, which probably are mere varieties of the mildew fungus or *puccinia*. It attacks wheat at all stages of its growth. The fungi have commonly an orange brown or rusty iron colour, when the spores are spherical the disease is termed *U. rubigo*, when they are oblong the fungus is called *U. linearis*. The plants when affected seem as if they were dusted with a rusty powder, especially after the sporules have burst through the epidermis or skin of the stem. It is said to prevail more among the rough chaffed wheats than others. The rust is not so injurious as the true mildew, though it causes great havoc when it appears in the later stages of growth of the wheat plant. The predisposing causes are the same as in the case of mildew; it is sometimes readily dissipated by an outburst of sunny weather, especially when attended with a healthy breeze playing over the growing crop. The remedies are the same as those mentioned for mildew. In the case of both mildew and rust it has been found that thick crops are less liable to

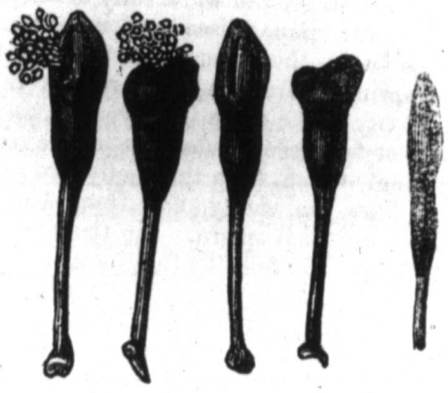


SECTION AND PORTION OF A STOCK OF WHEAT AFFECTED WITH RUST.

(1) (1) (1) Masses of the Rubigo. (2) Stomata, or breathing pores. (3) Cellular tissue. (4) Cuticle. (5) Epidermis.

their attacks than thin ones, that fields which have received a liberal supply of seed have resisted the disease when thin sown ones have been destroyed. A too frequent repetition of the wheat crop also encourages these diseases. Some farmers think if they only supply plenty of manure, they can go on growing wheat crops without end. This is a great mistake, and one into which Canadian farmers at the present time are too apt to be betrayed, in consequence of the high prices offered just now for wheat; the liberal supply of manure with which they hope to renew the vigour of the soil, does but increase the rankness of the straw, thereby encouraging the attacks of these diseases, while the ears of

grain, even if they escape disease, are only half filled, yielding after threshing a miserable shrunk sample, instead of bold plump wheat. The laws of nature are



UREDO RUBIGO (*Common Rust.*)

invariable and cannot be disregarded with impunity, the productive powers of the soil have a limit, beyond which man, with all his fancied skill, cannot force them; and he who, in his haste to grow rich, endeavours to over-tax those powers, will find that he is only killing the bird which laid him the golden eggs.

SMUT is a disease of the ears of growing grain, by which the substance which should form flour, becomes entirely changed into a black powder, similar to a puff ball, or dusty mushroom. It seems to have prevailed in the time of the Roman Empire, and is mentioned by Pliny and Columella. It has been ascribed by all classes of cultivators to a diversity of causes, which for the most part are all erroneous. Jethro Tull ascribed it to moisture; Lord Somerville to insects; Linnæus and Walker ascribed it to the same cause. Sir Humphrey Davy was of opinion that it was produced by a small fungus. Bauer, of Kew, who supplied some interesting articles to the Penny Magazine on the subject, discovered that it was occasioned by a very minute fungus, and from the researches of skilful men, aided by powerful microscopes, it has been ascertained that smut arises entirely from two minute fungi of the coniomycetous order.* The *uredo segetum* and the *uredo fœtida*.

These two species of fungi which produce smut, and whose spores constitute the fine, powdery, soot-like substance of the disease, have distinct characteristics, by which they may be easily distinguished from each other.

The *uredo segetum* has no smell, and attacks wheat, barley and oats. It sometimes affects the leaves and stems of the plants, but in general attacks only the ear—this it completely destroys. It first injures the interior parts of the flowers of the plants, so as to destroy their productive powers; it next makes the little stalks of the florets swell and become fleshy; it then consumes this fleshy mass, and at last appears through the chaff, scales or glumes, in the form of a soot-like powder. It generally comes to maturity some time before the crop is ready for the harvest, and the spores, which resemble fine lampblack in appearance, are profusely swept away and scattered by the winds before the grain is cut, so that although it may have committed great devastations, it is seldom seen at the time of harvest. It is comparatively rare in wheat, does not seem to occur at all in rye, is very common in barley, and still more so in oats. The straw of crops affected by this form of smut, is said to be very distasteful to cattle, and probably is very unwholesome.

* Derived from *konis*, dust, and *muktes*, mushroom.

The *uredo fœtida*, or smut ball, occurs only in the grain of wheat, has a disgusting smell, and is a well known and much dreaded disease. It occurs in the young grain at its earliest stage, and when fully developed occupies the whole interior of the grain. Mr. Bauer discovered it in the ovule of a young plant of wheat, sixteen days before the ear emerged from the hose, and twenty days before the sound ears, springing from the same root, were in bloom." At that early stage the inner cavity of the ovum is very small, and after fecundation, is filled with the albumen or farinaceous substance of the seed, and already occupied by many young fungi, which, from their jelly-like root or spawn, adhere to the membrane which lines the cavity, and from which they can be easily detached in small flakes with that spawn. In that state their very small pedicles may be distinctly seen. At first the fungi are of a pure white colour, and when the ear emerges from its hose, the ovum is much enlarged, but still retains its original shape, and the fungi rapidly multiplying, many of them have then nearly come to maturity, assumed a darker colour, and having separated from the spawn, lie loose in the cavity of the ovum. The infected grains continue growing, and the fungi continue to multiply till the sound grains have attained their full size and maturity, when the infected grains are easily distinguished from the sound ones, by their being generally larger and of a darker green colour, and if opened appear to be filled to excess with these dark-coloured fungi. But the grains infected with the *uredo fœtida* very rarely burst, and these fungi are seldom found on the outside of the grain, but if a grain be bruised, they readily emit their offensive smell, which is worse than that from putrid fish. When the sound grains are perfectly ripe and dry, and assume their light brown colour, the infected grains also change, but to a somewhat darker brown, retaining however the same shape that the ovum had at the beginning, the rudiments of the stigma also remaining unaltered."

The sporules of both U. segetum and U. fœtida are surprisingly minute. Not fewer than seven millions, eight hundred and forty thousand of the spores of the U. segetum would be required to cover one square inch. A single smut-ball of the U. fœtida contains about four millions of spores; some idea of the reproductive powers of these destructive fungi may hence be formed. They are supposed to find their way into the plants by entering the spongioles of the roots with the moisture, and then ascending with the sap. They are carried into the ground with the infected seed, and are thus readily absorbed by the root during the germination of the seed from which the plant has sprung. If the tainted seed be thoroughly cleansed, the plants will not be infected; this has been well ascertained, and hence the practice of washing seed-wheat universally prevails.

The chief preventive of smut is the steeping of seed wheat in some solution which, while it is powerful enough to kill the spores, yet will not destroy the vegetative powers of the grain. The spores which are dispersed at the time of thrashing are of an oily, greasy nature, and cling with considerable tenacity to the grains of wheat. Hence alkaline solutions, combining with this oily matter and forming soap, are found to be the best washes in which to steep seed wheat. Lime water, ley from wood ashes, and common salt, are all good and much to be preferred to violent poisons, which are very dangerous, and were perhaps first applied from the mistaken notion that smut was produced from insects. Fields in the vicinity of the sea are rarely injured, and never extensively, by the ravages of smut; this happens, no doubt, from the prevalence of saline particles. The effect of salt on the mildew fungi has been already noticed, and there is every reason to suppose that it will be found equally effectual in destroying the vitality of the sporules of the U. fœtida. Stale pickle, in which meat has been preserved, will be found very useful as a wash for seed wheat. If the grain be poured into a large tub containing pickle, the unbroken smut-balls will float to

the top and may be skimmed off. After the grain is thoroughly saturated it may be placed on a sieve or riddle and thus the wheat can gradually be drained, when it should be spread upon the barn floor and dried with fresh powdered lime, which may be scattered over it, and thoroughly mingled with the grain by raking it about.

A solution of sulphate of soda (glauber salts) in the proportion of 17¾ lbs. to 22 gals. of water has been found very efficient; as this salt does not readily dissolve, the solution should be made the day before it is wanted. Mr. Bauer recommends lime water, but perhaps nothing will be found more effectual, cheaper, or more easily procured than a pickle of salt and water.

A field of wheat that presents an even appearance, the stalks all being of equal height, suffers less from smut than an uneven field where some stalks are shorter than others, it will generally be found that the short wheat is all smutty; this may be accounted for in this way. When a field has been thinly sown, or when from winter killing or other causes the plants have been thinned out, those that are left are induced to stool out, and send up a fresh supply of stalks; these, of course, are later, and not so vigorous, as the parent stems, consequently they are more liable to the attacks of disease, and accordingly are the first to suffer from the smut. Farmers no doubt have often observed that wheat, growing near fences which have encouraged large snow drifts in winter, is always smutty. This is occasioned by the deep snow-drift killing out the wheat, or lying so long on the field after spring has set in, as to impair the vitality of the plants; consequently they become stunted and weak, and as a matter of course the first to be affected by smut.

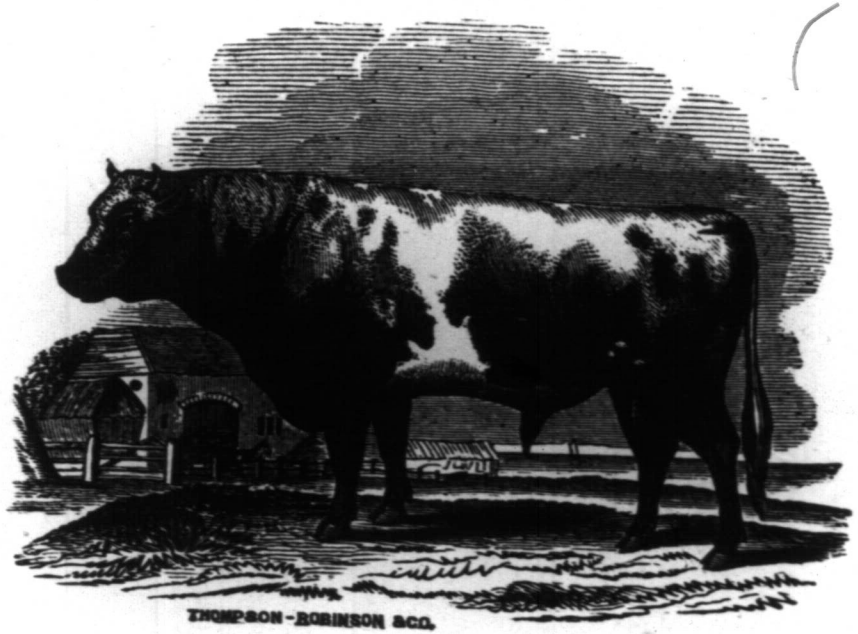
From this we learn the importance of thoroughly working the land, and sowing a liberal supply of seed, in order that the crop may present as even an appearance as possible, and that the plants may be in such a healthy vigorous state as to enable them to resist the attacks of disease. In the older settlements of Canada the land has not that freshness and fertility it once possessed, consequently more seed is required than when the land was first cleared. For the same reason the soil requires more judicious management, and more attention to be paid to the rotation of crops, when wheat will be sown only in due turn, and after a thorough fallowing of the land. Throughout this essay, the bringing the land into a good state of cultivation, avoiding over cropping it with wheat, and so inducing a healthy and vigorous state of that grain when it is sown, has been pointed out as one of the best means of averting the devastations caused by the insects and diseases injurious to the wheat crop, that form the subject of the present treatise. As a general rule it will be found that the crops of the industrious, intelligent, and observant husbandman, will, in consequence of attending to such directions as above, (directions which are founded on experience, and approve themselves to common sense,) escape these calamitous evils, while those of the lazy, negligent, and slovenly farmer are sure to be the first to fall a prey to them.

It may be asked, if the seed is properly cleansed where does the smut come from that attacks the sickly and defective wheat plants? How can the snow drift that kills out the wheat affect the few plants that remain with smut? The answer to this is, that no doubt the spores of smut fungi which are carried about by the wind, are deposited on the fences, on briars and weeds, and on the stubbles of the crops which have been reaped; in the last case they are ploughed into the ground ready to attack any wheat plants that are predisposed by their sickly state to receive the infection through their roots, or in case of those spores which are lodged on the fences, &c., the unhealthy plants receive them into their system through their stomata, in the same manner as the mildew and rust

fungi impregnate the culms or stems of wheat with their spores, which obtain an entrance through the stomata on the surface of the plants.

This theory may be erroneous; but it will deserve a place until a better is substituted. Certain it is, that short and weakly plants of wheat, owing their defective state to the causes already mentioned, are the most liable to disease; and it will be well, therefore, even though we cannot account satisfactorily for the origin of the disease, to try and avoid those causes which predispose the plants to receive it.

And here we learn the advantage of those researches of scientific persons who have thoroughly examined and satisfactorily determined the true causes, nature and history of these diseases. So long as their true origin was unknown, it was impossible for the agriculturist to apply the proper remedies; he was contending in the dark with an enemy whose evil effects he experienced, but of whose nature he was thoroughly ignorant, and consequently all his efforts to subdue it were useless, and the remedies he applied inapplicable. But this is no longer the case; learned men have discovered the true origin of these diseases, and the result of their investigations has been gathered in the foregoing pages for the information and benefit of the intelligent farmer; the remedies and preventives mentioned may not be the most effectual, but now that the husbandman knows the nature of those evils which devastate his crops, he can use his own judgment, and bring his practical experience to bear upon the best method which may be employed to counteract their calamitous effects. No amount of human prudence or foresight can altogether prevent their attacks; but, when contending against them, the farmer will now have the satisfaction of knowing that, being acquainted with the origin and nature of the diseases, he has gained more than half the victory over them.



"BELTED WILL 4th." (12464) E. H. B.

Winner of First Prize as an aged Durham Bull, at Provincial Exhibition, Toronto, 1858. The property of Hugh McMillan, Erin.

Calved in November, 1851, bred by the late Mr. Ralph Wade, Port Hope; got by Robin Hood (13608), dam (Duchess 2nd) by American Belted Will (12394), g. d. (Duchess 1st) by Cleasby, 117 U.C.S.R., gr. g. d. (Snowdrop) by George (12939),—by Pyramus (4853),—by Young Rockingham (2547),—by Denton (198),—by Ladrone (353),—by Henry 301),—by Danby (190). *See page* 177.

[It is but justice to this animal to say that the engraver has made a very inferior representation of him.]

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LECTURE ON PRACTICAL AGRICULTURE, DELIVERED BEFORE THE DUNDAS COUNTY AGRICULTURAL SOCIETY.

BY JAMES CROIL, OF WILLIAMSBURG.

The object of our meeting together is to excite an interest in our farmers, in support of their Agricultural Society. The association has for its object the improvement of agriculture, so that the subject that has been allotted to me, is at once the most appropriate that could be suggested, as it is certainly the most agreeable that I could have been asked to address you upon:—*Practical Agriculture*, or the Practice of Ariculture, not as opposed to scientific farming, but as contra distinguished to *theoretical* farming. I regret, however, that the subject has not fallen into abler hands. Simple though at first it may appear, there is a vast deal more comprehended in what is defined as practical agriculture than we would at first suppose. And were I to look back upon the ten years in which I have been interested in the agriculture and the Agricultural Society of this county, and to regard the interest hitherto manifested in its support as a criterion for the future, I should have to acknowledge my fears that I had come to address to you a *popular* lecture upon a very *unpopular* subject.

To treat the subject as its importance demands, I should have to trace its history from the time that man was first doomed to earn his bread with the sweat of his brow, down to the present time. And in doing so we should have to notice the many ups and downs that have either accelerated or hindered its progress during the intervening ages. But, as this branch of the subject, might very properly occupy not only a lecture but a whole course of lectures, I shall pass it by at once. And in the few words I have to say to you, I shall confine myself to the Practice of Agriculture, as we find it in the 19th century. And for the more clear elucidation of the subject and its more regular examination, we shall consider it very briefly in the different phases under which it occurs.

Farmers are divided into two classes: those who practise agriculture with a view to earning a livelihood by it, and those who follow it as an amusement or recreation. The former are divided into as many classes as there are different systems or kinds of farming, such as grain farmers, sheep farmers, dairy farmers, &c. These are what we call practical farmers. These are the men who provide food for the million—to whom the nation look up next to Providence for the supply of their daily food. The other classes of farmers are divided into such distinctions as these: the experimental, the theoretical, and the gentleman farmer.

Now, although I have undertaken to speak to you of *practical* farming, and another gentleman to speak to you of *scientific* farming, you are not to imagine that I throw agricultural science overboard. For what is science? It means knowledge; and this is the very idea I wish now to convey to you—the desirableness of having a thorough knowledge of your profession, and if there be any difference of opinion betwixt me and any other gentleman here present, it must be with regard, not to amount, but the kind of knowledge most desirable for a farmer to possess. Or, in other words, as to what are the essential qualifications of a good practical farmer.

Now, I will at once take up the ground that I mean to occupy and make the broad assertion, that an intimate knowledge of the sciences of Chemistry, Botany, Zoology, Geology, Entomology, or any of the other ologies is not indispensably necessary to the successful practice of agriculture. Now, understand me thoroughly at this point:. I am not inclined to put a light estimate upon

the value of the sciences we have referred to. Who can for a moment doubt the effect which the wonderful advances in these sciences has made upon the civilization of the world? And we are not to suppose that agriculture has not received some, nay, very much benefit from the researches of scientific men. Neither must you suppose that, while I advocate the supremacy of the more practical parts of our profession, I would therefore exclude the scientific branches from the education of the rising generation of farmers. Upon the contrary, I look upon them as accomplishments which every man—laying claim to be an intelligent and educated man, in the modern acceptation of the term—should be thoroughly conversant with: for the very same reason that I look upon painting and sculpture, music and dancing as most desirable accomplishments. But you will sooner convnce me that it is essential for a farmer to learn the art of dancing, how to "trip it on the light fantastic toe," than you will persuade me, that to be a first-rate farmer, it is essential that he should be an adept in analytical chemistry.

Without the most remote knowledge of the science of Botany, we have the knowledge suggested by experience and observation, that certain kinds of plants are best adapted to certain kinds of soils and climates, and systems of cultivation. We can distinguish between wheat and chess, between chess and oats, between potatoes and cabbage, while the science of Botany has failed to account for the astonishing similarity that does exist between wheat and chess. And all the sciences combined, and Dr. Liebig at the head of them, have failed to tell us what has produced the potato rot, or to shew how it acts upon the plant, much less to demonstrate a cure.

Without a knowledge of the science of meteorology, the prudence and foresight of the practical farmer enable him to predict and prepare for the coming storm. And instead of racking his brains with idle speculations in regard to comets that are to disconcert the seasons, or to annihilate the earth by their touch, he reposes confidence in Him who hath said: "While the earth remaineth, seed-time, and harvest, and cold, and heat, and summer, and winter, and day, and night shall not cease." Instead of trying to master the theory of storms and the currents of the winds, he pursues the even tenor of his way, remembering who hath said: "He that observeth the wind shall not sow, and he that regardeth the clouds shall not reap."

Without an accurate knowledge of Zoology, we are enabled by practice and observation, to form a very correct estimate of the properties possessed by certain classes of animals, that render them valuable to us for certain purposes.

At our last meeting, Mr. Stephens, author of "The Book of the Farm," (and himself an eminent practical Scotch farmer,) was cited as high authority in support of the importance of scientific farming. But I find that his views and my own so nearly coincide, that I cannot do better than give his summing up of the whole matter, in his own language, which is so clear and pointed as to leave no room for misapprehension. He says:

"The chief obstacle which exists to the advancement of scientific agriculture, is to be found in the unacquaintance of men of science with practical agriculture. Were the men of science to become acquainted with practice, much greater advancements might be expected in scientific agriculture, than if the practical man were to become a man of science; because, men of science, as such, are more capable of conducting scientific research, and until the relations betwixt principle and practice are well understood, scientific researches, though important in themselves and interesting in their investigations, tend to no practical utility in agriculture; in short, until the facts of husbandry be acquired by practice, men of science will in vain endeavour to construct a

satisfactory theory of agriculture, on the principles of the inductive philosophy." Here is the greatest compliment he can confer: "I am convinced that it is in the power of science to benefit agriculture, though perhaps not to the same degree which the sanguine expectations of many of its true friends would induce farmers to believe." The truth is, Mr. Stephens was writing a book on agriculture, so full and comprehensive as to commend itself to every taste; but had you asked him as a practical farmer his honest opinion of the scientific part of it, he would very likely have reminded you of the proverb: "He that tilleth his land shall have plenty of bread; but he that followeth vain persons is void of understanding."

I will now consider what are the essential qualifications of a good farmer, and how they are to be brought to bear upon his profession; or, in other words, what system shall a man adopt to entitle him to the name of a good farmer?

Were I now addressing myself to an old country audience, my catalogue of qualifications should have to extend over a very wide field, and I should certainly (entertaining the old fashioned views which I do, with regard to agriculture,) have to warn my hearers against being carried away with every wind of doctrine that scientific or theoretical men may advance. But, as I am now situated, I do not think there is any need for this warning; I have no apprehension that there is the slightest danger that any of my hearers will fall into this error.

The qualifications of a good practical farmer are twofold—mental and physical. I take for granted that we are all agreed, that every man should be possessed of a good sound education—such an education at least as the common schools of the country afford—and really we cannot sufficiently estimate the benefit that must arise from the working of our school system. I do think that the system is a good one, and, like everything else in a new country, must take time to develope itself. We already see the fruits of it. Many of our young men whose education commenced in the common schools of the country, and where they imbibed the first desires for higher attainments, have distinguished themselves, in the various branches of the learned profession in this country. But not in the common schools nor any other schools can we derive that information which makes a good farmer. We all know that if we wish to make a youth a shoemaker, or a carpenter, or a tradesman of any kind, we first send him to school in order that his mind may be expanded and prepared to receive the seeds of practical instruction, and just in proportion to his intelligence and the extent of his education, we form an estimate of the success that awaits him in after life. The amount of education beyond which the common school affords may be extended to any length you please, just according to your means and your appreciation of literary attainments; but for my present purpose this is all I demand. This I consider the first qualification of a good practical farmer: he must have a good sound education.

The next indispensible qualification is, he must be a man of good common sense. Now, although a good education will develope, it can never originate this sterling qualification; and hence we see many men with fine intellects, thoroughly versed in all the attainments of a highly finished education, and yet woefully deficient in this essential quality.

Now, without this I defy any man to be a good practical farmer. Having a good sound education, and possessed of good common sense, a man is still far from being a good practical farmer, just exactly so far as he is from being a good shoemaker, or carriage maker, and it is quite as necessary for the practical farmer to undergo an apprenticeship to farming, in order that he may set out in the world with credit and profit to himself, as it is to attain proficiency in any other business.

It is quite true that there is nothing so very mysterious about farming but that any man may take it up at his own hand: this is what we call learning by experience. Now, although experience teaches even fools, we all know it is dear bought learning; and unquestionably that man has the advantage, who, before entering on a farm on his own account, has lived and worked a couple of years upon another's farm, not only with the view of seeing and learning how to perform agricultural operations, but to enquire into the rational of every thing connected with them, and to have the study impressed upon his mind as a settled and fixed principle, which, if carried out must result in success, and on the other hand cannot be departed from with impunity.

We have self-taught artists, and self-taught mechanics, and self-taught farmers, lots of them; and as we look upon the former as a spurious breed, and not to be relied upon, so I am inclined to look upon the self-taught farmer: he is a Jack-of-all-trades and master of none. He tries one system of farming and that does not pay. He flies off at a tangent to another, and that is equally bad. He finds something at last that *must* pay, he goes into it wholesale and he comes out of it miserably disappointed. Give me the man of good sound education, of good common sense. Give me the regular apprenticed practical farmer, whether he has served his apprenticeship on his father's farm or another's. He commences the world fully impressed with the necessity of accommodating his system of farming to the peculiar circumstances of country, climate, or of soil in which he is placed, he scans intelligently the field of his future labours, he adopts a system—he never loses sight of it—though he may for a time be required to exercise patience, and to live in hope—he does so in the full assurance that in due time he shall reap the benefit.

These then are the mental qualifications of a good practical farmer; but in a country such as we live in, the qualifications we have referred to, ample though they may appear, are still insufficient to render succesful the efforts of the practical farmer. And my own experience, corroborated, I am sure, by every farmer now listening to me, is, that in addition to these mental attainments, the Canadian farmer, must himself be physically able and willing to put his own shoulder to the wheel, and if he cannot perform all that is necessary to be done himself, he must at least share in the labours of those whom he has engaged to assist him. In my native country, in that portion of it with which I am most familiar—the Lothians—farming is carried on so extensively as to render this qualification quite unnecessary; farming there bears more analogy to manufacturing and some other branches of business, and the man of talent and capital embarks his money in it as in any other speculation, and he does not say: if I have good crops, and if I have a good man, and a good team to help me, I shall do so and so; but he says: I know that I can grow 40, 50 or 60 bushels of wheat per acre, as the case may be; I know what it will cost me to do so and what profit I shall have; therefore it is a simple matter of pounds, shillings and pence, how much money he shall invest in farming.

Now, some of you will say, if farming is such a nice business in the old country, what brings so many poor Scotch bodies here? Those who are really poor come here because the wages in Scotland are so small, (or rather, were so small), that the labouring man can do little more than earn salt to his kail. This of course is all in favour of the Scotch farmer. And those again who possess a limited capital come here because a much smaller capital will buy the land and stock here, than will simply stock a farm at home. The capital required to stock a rented farm and pay expenses till the first crop is sold is about £15 per acre, so that to stock a farm of 300 acres, which is a very usual size, requires a capital of nearly $25,000.

Presuming then that you agree with me that a good education, common sense, and physical ability, are all the requisites for a good practical farmer in Canada, I will consider wherein the excellence of good farming consists. I must first, however, divide the practice of agriculture, into the different branches of which it is composed, and each of these systems is governed by leading fixed principles: you will now begin to see the truth of the statement I started with, that the subject embraced more than at first we might be led to suppose. The time would fail me to consider separately these different systems, I will therefore merely glance at them.

In Scotland we have five distinct kinds of farming, each quite separate from the other. We have—

1st. The pastoral or grazing farmer, wholly confined to the mountainous and hilly regions, where farming is entirely restricted to the raising of sheep and cattle, and, in some particular localities, altogether to sheep, upon a very large scale.

2d. Then we have another class of farmers very much restricted in their operations, and confined to certain localities; these are called in Scotland the Carse farmers, the name of carse being given to extensive level valleys of extremely rich alluvial clay deposit, chiefly adapted, and in many instances entirely so, to the production of wheat and beans; like some of our western prairies their capabilities for growing wheat year after year seems inexhaustible, but unlike them they require very skilful management, being composed of a heavy retentive clayey soil.

3d. A third class of farmers are those who, in the neighbourhood of cities and towns, devote their attention to the raising of green crops, such as potatoes, carrots, turnips and other vegetables; vetches, clover and other leguminous plants are extensively raised by them, cut while green and sold in bundles to cow-feeders and others in the city, the whole produce of the farm is disposed of, including hay and straw, and neither sheep nor cattle are kept at all. The fertility of the soil is kept up to the highest pitch by manure drawn from the city, by the return carts that were loaded with potatoes and other produce. This is often a very profitable style of farming, and is common enough in our own country near large towns. Of course for various reasons it is neither desirable nor practicable to adopt it elsewhere.

4th. A fourth kind is devoted entirely to dairy purposes, restricted in Scotland to those parts of the country which, from the humidity of the soil and climate, are more favourable for grass than others; in this country, however, we find them indiscriminately mixed up with others.

5th. The fifth system is that usually followed in the grain growing districts of Scotland, and is styled the improved system of mixed husbandry. The farmers of this improved system are supposed to combine all the qualifications for the various kinds of farming enumerated in a greater or less degree, according to the prominence of any particular branch in the individual practice of this system.

Now, before we consider wherein consists the excellence of practical farming in Canada, I must first enquire what is the peculiar system found to succeed best here. What is the system of farming in the County of Dundas? If any of you will tell me what system the farmers of this county pursue, I will tell you what are the essential requisites to its successful prosecution. But is it not too true, that our farming is better defined as the absence of any system at all.

I will assume that we have no system of farming, properly so called; but that from my own experience and observation the system we ought to pursue is the last I have mentioned, that of the improved mixed husbandry, and I

shall narrow down my remarks to what is now, and is likely to remain, the most prominant feature in that system as practised amongst us, and that is the cultivation of the soil for the purpose of raising grain and grass, and the great requisites for this are, a *proper rotation of crops, thorough cultivation, manuring and draining.*

A proper rotation of crops is due to those fundamental principles, that are inseparably connected with good farming; and in looking at the present position of agriculture in Canada, or more particularly in our own county, it is difficult to arrive at a correct conclusion as to whether the absence of this feature in our agricultural economy, is the cause or the effect of that absence of any system at all which we have referred to. But from whatever cause it arises, the fact is the same: we do not follow any regular rotation of crops. Now, I do not consider it incumbent on me to prove to you the necessity of this. I would rather demand it as an axiom, commending itself at once to the reason of every reflecting mind.

It is reasonable to suppose that the crops derive their nourishment chiefly from the soil, and that crops of the same sort require and will appropriate to themselves the same kind of food, and that just in proportion to the original supply of the particular kind of food required for the support of any particular plant existing in any soil, will that soil continue to produce and support that plant. And it is quite unreasonable to suppose that any soil, however fertile, should continuously produce forever any one kind of crop.

The medical man opens a vein in the human body, and withdraws a moderate portion of that life giving principle that animates the system, and, at proper intervals, he again, and again, fearlessly repeats the operation. He believes—he knows not how—that nature will reproduce and replenish the arteries with a healthier supply, but were he to omit to staunch the ebbing stream of life, who would express surprise if his patient, gradually enfeebled, should at last sink under the treatment and be beyond the reach of nature's restoring touch. Some of you may point me to the fertile plains of the far west, and ask why there we read of successive crops of wheat year after year, without any perceptible diminution in the fertility of the soil. Let me tell you, the process of exhaustion is surely and rapidly going on, and ere long they will have to deplore with the simpleton of old, that their poor farm gave out, just when it was learning to live upon nothing. And the day is coming when it will require all the skill that science and practice can combine to restore them to their original fertility. As proof of this, let me point you to the once fertile plains in the valley of the Richelieu, once the granary of North America, now reduced to the humiliating position of begging their bread. Look to that tract of country between Hamilton and Niagara, the most beautiful in Upper Canada, long supposed to be as inexhaustible as the prairies themselves. It is now in a position almost as bad: look at the old clearances in our own country, and we come very near the truth when we say, that they are already *drilled out.* The system of incessant cropping is very well for the tenant upon a short lease, or for the farmer who is blind of one eye and cannot see out of the other; but to the man who is wide awake—to the man of good common sense, the principle I referred to, commends itself, as at once reasonable and necessary to ultimate success.

The process of cultivation is carried on by various implements, and by the same implements at various times, and under different circumstances. The plough and harrow are the great mechanical agents employed in cultivating the soil.

Of ploughs, we have in Canada just as many different kinds as there are plough makers—strong presumptive evidence that none of them are of the right

kind. In Scotland, on the other hand, we have but one kind, or at least the difference is so trifling as to be quite imperceptible, except to the most practiced eye, whence I infer that it is not far from the right kind, and the nearer we approach to it in Canada it will be the better for us. Having a good plough the practical farmer must learn to be a good ploughman. Now undoubtedly good farming hinges on this point, and this is the very point of all others in which we are the most deficient. We evidently try, not how perfectly we shall plough a given piece of ground, but how much we can *scarify in a day*, and no attention is bestowed to have the work done up in a thorough workman-like manner: it seems to be of no importance that the furrows should be straight, deep, and firmly put together, or that the ridges should be uniform in width to facilitate the operations of sowing and harrowing, or that they should be carefully gathered up into the proper shape; and yet these are all most essential points.

We often hear the assertion that the grain grows as well on the crooked ridge as the straight one. This may sometimes be true; but we not unfrequently find that when a farmer ploughs straight, he also ploughs deep and regular; we find that he has his fences straight, his buildings straight, his deportment is straight—and, at the end of the year his account comes out straight.

The object of ploughing is two fold: 1st. To pulverize the soil and prepare it for the reception of the seed. And secondly, to wage a war of extermination against the weeds. The deeper we plough, we increase the area in which the roots of plants are to spread themselves out in quest of that food which common sense, unaided by science, tells us, is by them communicated to the plant. The depth of ploughing may vary according to the nature of the soil and the crop that is to follow, but we are quite safe in saying that from 7 to 8 inches is the least that we should be satisfied with. Eight inches is as much in most soils as a pair of horses will turn over easily, and when it is desirable to go deeper than this, we must have recourse to the sub-soil plough, which is drawn by two horses, following in the wake of the common plough, and stirring the ground to the depth of eight inches more, without, however, bringing any of the sub-soil to the surface.

The common practice is to use the sub-soil in the course of summer-fallow, or in preparing for green crops, or under any circumstances where the ground is thrown out of ridges into a level state; it is used across the intended ridges at the second last ploughing, and then in ridging up the land the plough is run to its greatest depth, probably 10 or 11 inches, thus bring up and mixing as much of the subsoil as will be considered advantageous with the surface soil. Where the under soil is of a decidedly inferior nature, it is better to stir it up and leave it where it is.

There is a plough invented by our ingenious neighbours, on the other side of the river, that has quite superseded the subsoil on this continent, and is said to be worked with one pair of good stout horses, that is the Michigan subsoil and trench plough—a most effective implement, consisting of two ploughs attached to one beam. By one operation the surface soil is turned over, and the subsoil is brought up bodily and deposited upon the top, the ensuing ploughing thoroughly mixing the whole together. Subsoiling is chiefly beneficial, where the under soil is of a stiff retentive clay, alike impervious to the roots of plants, the action of the atmosphere, and that heat and moisture which are necessary for vegetation. It may be used in any soil with advantage, but although it does not give the scientific man a moment's consideration, it becomes an all-important question with the practical man, whether or not it pays, and just in proportion as it is found to pay or otherwise, does he use it. Subsoiling and subsoil ploughs were introduced into Scotland by an enterprizing Scotch farmer, Mr. Smith, of

Deanston, and although the theory is undeniably correct, yet from the very consideration I have mentioned even in Scotland it is very little used. The greatest benefit derived from subsoiling occurs on stiff clay subsoils, and it has been proved that unless such land has been first thoroughly drained, the subsoiling is not only useless but actually injurious. This will appear evident if we examine the effect produced upon a piece of wet, blue clay, exposed to the action of a dry atmosphere; it becomes a hardened clod, incapable of imbibing the fertilizing properties of the manures applied, and of course incapacitated for affording nutriment to the roots of plants.

I therefore come to the conclusion, that viewed in the light of pounds, shillings, and pence, the expense of subsoiling will prevent its coming into very general use in Canada—nor in our present state of agriculture would I advocate it very strongly.

But I have said that the object of all ploughing is to pulverize the soil and to eradicate the weeds that infest our fields. Now, by keeping in view the ultimate object of any operation, we may often arrive at the end, by a shorter and easier method than by adhering to the old fashioned practices of our grandfathers. Having once brought a given piece of ground into a thorough state of cultivation, by means of good ploughing, draining, and manuring, it may be kept in a highly productive state, with very little use of the plough; indeed we are too apt to think that to get a field into a productive state, all that is necessary is to plough it a certain number of times, and apply a certain quantity of manure; but I hold that ploughing, beyond what is necessary for pulverizing the soil, and eradicating weeds, is decidedly injurious to the soil, by faciliting the evaporation of the valuable gases and juices contained in it; and this is one of the great practical improvements, belonging to the system I have styled the improved system of mixed husbandry. Take for example a field that has been properly prepared and planted with potatoes, or turnips, as the case may be —after the crop has been removed, it was formerly considered good husbandry to plough that field in the autumn, to lay it dry for the winter, and to plough it again in the spring, to prepare it for the seed; whereas now-a-days, it is no matter whether the ground be in ridges or not during winter, the under drains are imperceptibly but effectually at work, and by the filtering process of draining off the surplus water, they are actually rendering the ground porous and accessible to the roots of plants, to a depth far below that attained even by the subsoil plough. All that is necessary then in spring is to freshen up the already mellow soil; this is done admirably by the grubber, an over-grown species of harrow, which scientific men might call an agricultural agitator, drawn by three horses and covering a space of five or six feet, stirring up the ground to a depth of eight or ten inches, and bringing up any remaining weeds to the surface. Here then is an economy of 20 per cent. on the labor of the farm, enabling four pairs of horses to do the work of five under the old system. If our land were drained, the same system would hold good in Canada, but as we are circumstanced, taking it for granted that we have eradicated the weeds by cultivating the crop, our proper course is to plough our land occupied by green crops in the fall, as late as possible, providing every facility for the surface water to find its way off, and in the spring to sow our grain without farther ceremony. The repeated action of freezing and thawing during the last part of winter, leaves the soil in the finest possible condition for receiving the seed. On the other hand, it is proper for us to plough our stubble lands, as early in the fall as possible, to afford time before the winter sets in for the stubble and other vegetable matter to decompose.

There is however one redeeming qualification in regard to our agriculture, for which, if for nothing else, we may claim credit, and I am bound to accord it,

and that is for consistency—O yes, we are very consistent. We pay no attention to any regular rotation of crops; we regard thorough cultivation as a matter of secondary importance, therefore we are quite consistent in giving ourselves no uneasiness at all, either to the accumulation or the application of manures. We are satisfied that the manure is all expended on the farm, and that in some way or other we must get the benefit of it. We do not stop to enquire how the benefit is to come, scientific men will probably account satisfactorily for that, *but it must come.* Now we claim that practical agriculture is a chain, and every link a principle, and if we break one link of the chain, the whole system falls to the ground. It is not only possible but necessary to the success of agriculture, to follow out a system of manuring. I will not presume for a moment that you are ignorant of the benefit derived from manuring, in the abstract. We have spoken of the once fertile plains of the Richelieu; the farmers there, we are told, were like ourselves, ever consistent in the practice of agriculture, but they carried their consistency far beyond us, for instead of spreading their manure upon the field immediately adjoining the barnyard, it was considered a much more dignified course, combining a higher degree of knowledge in the branches of mechanical art and science, to remove the barn from the manure.

As in cultivation, we must first ascertain the object to be attained by manuring, and this is certainly not to enrich one field at the expense of another, but to render every part of the farm alike productive, at least so far as the nature of the soil and other circumstances will admit, because, when we speak of a system of rotation, we do not confine ourselves to any given field, but we infer that every portion of our farm shall, in its proper turn, occupy its proper position in that rotation. The *object* of manuring is to increase the fertility of the soil, and having attained a certain point of fertility, the practical farmer is satisfied, if he can only carry on the system and retain that amount; but to do this requires no ordinary discretion and management on his part; indeed it has become a serious question amongst scientific and intelligent farmers, whether, even with the very best management, the ordinary resources of an ordinary farm, are capable of maintaining the fertility of every part of the farm. If it be true that they cannot do so—and I am not prepared to contradict it—how carefully should we attend to this very important matter. One thing is certain, if we continue to extract more from our soil than the resources of the farm will restore, we are moving backwards, and every step is bringing us to the brink of the precipice, where, if we do not discover our true position, and make an effort to recover our lost ground, we must tumble over amongst the fast men of the present day, who have committed no greater folly than that of living beyond their income. If we do not frequently hear of farmers *failing*, we every day hear of them moving off west, leaving us to draw our own inference as to their motives, and as far as my own observation goes, I have yet to learn that there is any part of the vast continent to the west of us, where the prudent and industrious practical farmer, can more surely, more comfortably, or more speedily attain to a competency for himself and his family than in this very county of Dundas.

In the barnyard we must look for the principal supply of nourishment for the soil, and the first symptom of a better system of farming will be the vastly increased bulk of our farmyard manures. We cannot expect our cattle to consume every blade and stem of the straw we raise, and in the spring to find a sufficient supply of manure in the yard, unless we are prepared to express our faith in the system of homeopathic dozes. We must find a system that will enable us lavishly to litter our yards with straw, and accustom our cattle to the luxury of wading amongst it knee deep. Instead of feeding them with wheat straw for breakfast, and beautiful barley straw for dinner, and scientifically chopped straw for supper, we must introduce a little of the stuff that will stick

to their ribs; we must feed out a share of our coarse grains; we must grow roots and give them to our cattle, we may rest assured that we are sending them to the best market by the nearest road. One acre will produce 1,000 bushels of beets, the most nutritive of all roots, at no greater cost than 50 bushels of corn. But in this, as in other things, we must make allowance for circumstances. In this climate we find that, while roots are most advantageously fed to young cattle and sheep, they are altogether unsuited and in certain circumstances injurious to milk cows.

It is here a very natural enquiry, whether cattle should be tied up in stalls or fed in open yards. The advantages claimed upon both sides are so decided as to leave the matter an open question. But as far as any individual is concerned it is very easily set at rest. If we are stock farmers or dairy farmers, unquestionably our policy is to keep as many cattle as we have food for, and to economize that food by tying up our cattle, and adopting every other means we can devise for *diminishing their appetites.* If, on the other hand, we are farming on the system of mixed husbandry, we shall keep no more cattle than are necessary for breaking down our straw into manure—and we shall attain this object at less expense, a great deal less trouble to our cattle man, and in a healthier and more comfortable style to our cattle, by keeping them in well littered and well-sheltered sheds and yards. Having thus obtained a sufficient supply of the needful, the question will then arise, how, by a judicious fermentation, we are to concentrate its properties, improve its quality, and reduce it to more portable dimensions.

If we have once overcome the great obstacle, and provided a sufficient quantity of manure, we must then proceed to apply it to the best advantage, but on this my present limits will not allow me to enter. It might be very interesting to consider the means we have within our reach for increasing our supply of this material, either by collecting what nature can supply us with, such as swamp muck, leaves, and other vegetable matter, lime, ashes, chips, saw dust and such like, or by importing such other special manures as the experience of others may prove to be remunerative.

We are all acquainted with the use and the effect of plaster of Paris, so called. In these days of total abstinence, objections have been made to it because it is a stimulant; but had Father Mathew himself been a practical farmer, I am sure he would have encouraged us in the free use of every stimulant that would increase the production of our soil. If it has the effect of increasing our bulk of hay and straw, it will correspondingly increase our supply of the *fertilizing needful*, which will stimulate the purse, and the purse will stimulate the heart of the wealthy practical farmer to do good to all men as he has opportunity.

In addition to those we have already mentioned we have guano, bone dust, and many others better known in theory than practice, some of them really valuable, and others got up by scientific knaves to catch the poor unsuspecting practical farmer. Of these guano is the most important; discovered about 20 years ago, it is now very generally used in the old country, and immense subsequent discoveries of this valuable fertilzer, have marked out a new era in the Agriculture of the United Kingdom, for to no other cause can be attributed that immense annual increase that has enabled farmers with wheat at 5s. per bushel to pay as high rents as they ever did when it was 10s. An intelligent friend of mine in Canada has this year purchased 7 tons of it, which cost him $500; we shall obtain the result of his experiments and by applying the infallable test of pay or no pay, we shall satisfy ourselves as to its merits.

If I have thus far carried my brother farmers along with me, I have no fear that they will now differ from me when I come to speak of draining, the last mentioned link in the chain. I shall simply state the object of it, and the

effect produced by it, and let some one else tell you how you are to accomplish it.

We all acknowledge the fact, that a certain amount of moisture is necessary to originate and continue healthy vegetation, and that a superfluity of moisture in the soil has a decided tendency in the opposite direction. Now the object aimed at, and attained by thorough draining, is of so important a nature as to provide at once an antidote and a cure for the two opposite extremes. The tile drain is to the soil precisely what the governor is to the steam engine. Land that has been properly drained is brought into a porous, mellow condition, at once impervious to the drouth, and in a highly favourable state for absorbing the moisture that falls upon its surface, which, penetrating to a depth corresponding to the depth of the drain, remains there in the soil to refresh and nourish the roots of plants, and as soon as the soil has imbibed more than nature requires for this purpose, its own spacific gravity forces it into the drains.

The effect of external moisture upon undrained land, is more familiar to most of us. After heavy rains we observe that the surface becomes hardened and impervious to the water, which either remains on the top of the ground until evaporated by the atmosphere, or is quickly carried off by the furrows into the ditch; in the former case the land becomes soured, and immense fissures with open mouth invite the action of sun and wind to penetrate into and carry off every trace of moisture from the soil; in the latter case the land is, as it were, washed, and much of the fertilizing ingredients of the soil is hurried into the ditch. Of two evils we must choose the least, and therefore we unhesitatingly prefer surface draining to no draining at all, but thorough under draining is the great secret of success in agriculture—it is the rudder which imperceptibly controls the motions of the ship. Universally carried out in the old country, it has been adopted in this country to an extent beyond what some of us are aware of, and by consulting the experience of others we shall easily and satisfactorily find an answer to that worn out interogatory, "Does it pay?"

If we wish for information as to the manner in which the moisture of the soil contributes to the growth of the plant, the man of science is at hand and will illustrate it in such a light as will convince the most sceptical, but it is enough for my present purpose that we merely give it a place, the last though not the least important, as one of those essential requisites to the proper cultivation of the soil.

Agriculture in Canada is in a peculiar and singularly interesting position; unlike the densely peopled regions of the old world, where agriculture has grown up with the growth of ages, it here exists in all the stages, which, during the world's wide history, it has ever assumed.

We do not require to move far from home to find ourselves cut off from all traces of civilization, in our own country we may travel for miles through the primeval forest, and save the rough road on which we travel, can see nothing to indicate that the foot of the white man has ever been before us, and if in the distance we discover the blue curling smoke, ascending among the branches, curiosity leads us as we near it to pause and admire the scene. Emerging from his lowly cabin the sturdy pioneer stalks forth to begin the labors of the day, all the modern appliances of art and science are nothing to him, his axe upon his shoulder he feels that he has all he needs—with an eagle eye he scans the giant denizens of the forest, and selects the first victim that is to fall beneath his blows. He pauses not to enquire of the man of science whether he is to cut his timber when the sap is in the branches or when it is not. He enters into no scientific calculations as to the precise angle of obliquity with which he is to guide his axe, but with a strong arm and a good will he plunges it to the eye at every stroke, the old king of the forest trembles on his seat, and with a

crash that makes the woods ring again he buries himself in the snow, in the very spot the woodsman had marked out for him; another and another follow, and in a few years a large portion of the forest disappears, and a wide clearance invites the labours of the practical farmer. But the absence of any fixed system soon sinks the virgin soil, replete with the essentials of fertility, below the level of older countries, and it requires all the energies of the modern practical farmer, the man of good sound education and good common sense, to restore and maintain its fertility.

I have thus taken as comprehensive a view of the subject of practical agriculture, as the limits of an ordinary address would admit of. I have considered the qualifications of a good farmer and the principles which he works upon, and so far from regarding the few remarks I have made as tending to much practical utility, I feel as if we were now just standing on the threshold of enquiry; and that it cannot be better explored, than by individual farmers coming forward, and giving to their brother farmers the results of their individual observations, so that the dear bought experience of one may serve as a land mark to all.

The system I have now advocated is no Utopian or visionary scheme, but one which has been long known and successfully practised, wherever the minds of intelligent men have been devoted to the practice of Agriculture.

I could tell you of an unassuming tenant farmer on the banks of the Clyde in my native land, eminently possessing the qualifications I have referred to—a man of good education, of good common sense, and who is not afraid to put his own shoulder to the wheel, surrounded by wealthy landlords possessing all the advantages of a highly finished and scientific education—who has attained for himself the enviable appellation of the "model farmer." And I could point out many in our own country and hold them up to you as examples of successful industry, who will tell you that the nearer they have approached to the system I have mentioned, the greater has been their success.

Nature has done much for us—science has grappled with, and triumphed over the obstructions of nature,—the rest, we must do ourselves. It is often vauntingly said, this is a great country. Undoubtedly it is a great country; but we have yet to learn to be a *great people*. Possessing all the advantages of a good system of education, let us endeavour by every means we can devise, to create a universal thirst for knowledge.

In the numerous mechanics and tradesmen of our rising towns and villages, we have a class of fellow citizens, whose information must flow to them through a different channel than that of our Agricultural Society. Why not establish a Mechanics' Institute, with a library and reading-room attached, in Morrisburgh, or in Irroquois. I am told it is too soon; but can it ever be truly said to be too soon for the philanthropist to assist in providing a higher and more rational amusement for our young men than can be found in the bar room or the saloon, or at the gaming table, or any of those other infamous dens of vice that infest our towns and villages.

Let us then rally round the standard of our Agricultural Society, laying aside all distinction of party, of sect or of country, let us meet on this common ground and unite in measures for the common good.

THE TORONTO EXHIBITION BUILDING.--LAYING THE FOUNDATION STONE.

The ceremony of laying the foundation stone of the building erected upon the Garrison Reserve, Toronto, and intended for the use of the Provincial Agricultural Association, took place on July 15th, 1858. The following account of the proceedings is extracted from Toronto daily papers:

"The afternoon was propitious, and the special train which left Front street conveyed a large number of passengers, among whom were many of the members of Parliament, the Mayor and several members of the Toronto City Council, the representatives of the Press, and a numerous company of ladies. The scene upon the site of the edifice was interesting. Probably two thousand people assembled within the space bounded by the iron columns, and engaged themselves in viewing the dimensions of the structure, which could be judged from the framework already erected, or ascended to the gallery to enjoy the mellow rays of the sun and obtain a better view of the impending ceremony.

The situation of the edifice is very prominent; commanding an extensive view of the lake and harbour, and enjoying the delightful breezes of Ontario. This latter is a decided advantage, and will much enhance the pleasure of visitors at the exhibition in the warm month of September.

The building is situated upon 20 acres of ground suitably enclosed, and will afford exhibition space of 32,000 feet. It is to be built in the style of the English Exhibition of 1851. It will extend 256 feet in length, 144 in breadth, and will be 56 feet in height, the wings being formed so as to admit of subsequent extension if necessary. 2,000 square feet of glass will be fixed upon the roof, and fully 6,000 feet below. The glass will be of the rough-rolled plate description, manufactured expressly in England, being for the sides one-eighth of an inch in thickness, and for the roof one-sixteenth of an inch thicker. The gross weight of the glass will be 12 tons. It is worthy of mention that the roof has been adapted to the climate. There are no gutters, as gutters if broken when frozen would have a tendency to burst the framework, and in a year or two destroy the building. The circular portion of the roof will be covered with tin. The castings were all made by the Messrs. Hamilton & Sons, at the St. Lawrence Foundry, in this city. The contractors' cost of the building will amount to £4,878. To assure perfect safety the girders have been tested to a strain of double the pressure to which they can by any possibility be subjected, and are calculated to bear five times the ordinary strain of pressure.

The Legislative Council and other public bodies having ranged themselves round the stone, while the articles were being deposited, the band of the Royal Canadian Rifles, stationed in the western gallery, played some of their best selections in their usual masterly style.

The MAYOR said, the ground upon which they stood had been appropriated by the City of Toronto, for agricultural purposes, in order to afford an opportunity for the agriculturists, mechanics, and artists of Canada to compete amongst themselves, and, to some extent, with others in the neighbouring countries. The ground was given by the Corporation and citizens of Toronto,—a sum of £5,000 had been contributed. and before many weeks he hoped that they would find there a building which would be an ornament to the city, and afford a recreation to its inhabitants. The building would, he had no doubt, be admirably adapted for agricultural purposes, and he hoped, from the care of the committee having the management, that the erection would reflect credit upon the city and all concerned with it. He trusted that agriculture in this country would, under the Minister of Agriculture, prosper, and that the country escaping from the

temporary pressure which affected it would resume its position among the nations of the world, and compete with those agricultural productions for which Canada was so admirably adapted.

Col. THOMSON, President of the Board of Agriculture, then addressed those assembled. He gave a short history of the Society, which had now been thirteen years in existence, and recounted the difficulties it labored under in the early period of its formation in carrying out the idea of yearly exhibitions. These difficulties had been happily overcome, and the building, the laying of the corner stone of which they were assembled to witness, was the best evidence of the success of the endeavours of the Society. The City of Toronto had acted generously in the part it had taken in this matter; and much credit must also be given to the City of Kingston, which had erected a fine permanent building for the exhibitions of this Society. Besides this, assistance had been given by many localities in the country. Although the building was a permanent one, it was not necessarily intended to have the annual exhibitions held there always. Heretofore, it had been found very inconvenient, as well as expensive, to erect buildings every year, and to remove them after the exhibitions had taken place. This difficulty would now, in a great measure, be removed. Then, as to the objects of the exhibition, they were intended not only to advance the interests of agriculture, but also to encourage arts and manufactures. (Hear, hear.) The Society was anxious that arts and manufactures should advance equally with agriculture. By agriculture alone, a country could never become wealthy. It must also have trade, and commerce, and manufactures, combined with agriculture. He would call on a gentleman more immediately connected with the interests of manufactures than himself, to address them.

W. B. JARVIS, Esq., President of the Board of Arts and Manufactures, said it was his duty more particularly to address himself to the manufacturers than to the agriculturists. A spirit of enterprise had led to the proposed erection of the Crystal Palace, and he trusted that on the completion of that building, artizans and others would readily exhibit specimens of their scientific industry. They had had their shows of grain and of animals, but the exhibition of manufactured articles had been amongst the most interesting. He hoped that they might not be disappointed in September, and that on the completion of the building the voices of many contributors would be heard within it.

The Rev. Dr. McCAUL then offered the following prayer:—

"O Lord God, without whose blessing the efforts of man are unavailing, look down, we beseech thee, with favour on the undertaking which we have commenced. Grant that the building whose foundation stone is now about to be laid, may be brought to a successful completion, and that the exhibitions to be held in it may effect the important purposes, for which they are intended: of advancing our agriculture, and promoting our arts and manufactures. May they be attended with advantage to the Province, with benefit to our fellow-creatures, and with the extension of Thy Honour and Glory.

"Bless, we beseech thee, our Sovereign; Her Majesty's Representative; and all that are set in authority under him; and grant that under our free constitution, in the enjoyment of peace and plenty, we may live in dutiful allegiance to the Queen, and in brotherly love and Christian charity, each towards the other; so passing through things temporal, that we finally lose not the things eternal. And this we beg in the name and for the sake of thy Son, our Saviour, Jesus Christ, in whose words we further address Thee:—Our Father, &c."

R. L. DENISON, Esq., Treasurer of the Association, read the documents of inscription as follows:

"On the 15th day of July, A.D., 1858, in the 22nd year of the reign of Victoria, by the grace of God, Queen, Defender of the Faith, His Excellency Sir Edmund Walker Head, Bart., C.B., one of Her Majasty's most Honourable Privy Council, being Governor General of this Province.

"This, the Foundation Stone of a Crystal Palace, wherein, under the direction of the Provincial Agricultural Association, the resources of Upper Canada shall be fostered by the Annual Exhibitions of the evidences of its progress in Agriculture and the Industrial Arts, was laid by the Honorable Philip M. Vankoughnet, President of the Executive Council and Minister of Agriculture, assisted by Edward W. Thomson, Esq., President of the Board of Agriculture of Upper Canada; William B. Jarvis, Esq., President of the Board of Arts and Manufactures; and William H. Boulton, Esq., Mayor of the City of Toronto.

THE OFFICERS of the Provincial Agricultural Association being D. B. Stevenson, Esq., President; William Ferguson, Esq., and John Wade, Esq., Vice-Presidents; Richard Lippincott Denison, Esq., Treasurer; Professor Geo. Buckland, and William Edwards, Joint Secretaries; Professor Henry H. Croft, Chemist; and Mr. James Fleming, Seedsman.

MEMBERS OF THE BOARD OF AGRICULTURE.—Edward W. Thomson, Esq., President; Henry Ruttan, Esq., Vice-President; Hon. Adam Fergusson, J. B. Marks, David Christie, M.P.P., Richard L. Denison, Asa A. Burnham and George Alexander.

TORONTO LOCAL COMMITTEE.—William H. Boulton, Mayor of the City; F. W. Jarvis, Sheriff of the County; William B. Jarvis, Esq., Rev. Dr. McCaul, Dr. Daniel Wilson; J. B. Robinson, George Brown, and Wm. McDougall, M.P.Ps.; Alderman Read, Alderman Brunell, Alderman Boomer, Alderman Ritchie, Alderman Carr; J. E. Pell, Samuel Walton, J. D. Humphreys; Joseph Hartman, M.P.P., Warden of the Counties of York and Peel; George Taylor Denison, Alexander Shaw, Professor Buckland, and all the members of the Board of Agriculture.

ARCHITECTS.—Messrs. Fleming and Schreiber.

BUILDERS.—Messrs. Smith, Burk, and Meldrum."

Mr. FLEMING then presented Mr. Vankoughnet with the silver trowel, which was thus inscribed:

"Presented to the Hon. P. M. Vankoughnet, Minister of Agriculture, by the Local Committee of the Provincial Agricultural Association. Toronto, July, 1858. Crystal Palace,"

In a tin case placed in the stone were the following articles:—Transactions of the Board of Agriculture for 1856-7, 2 volumes; Canadian Agriculturist, May, 1858; Act of Incorporation of the Bureau of Agriculture; By-laws of the Board of Arts and Manufactures, 1857; Annual Report of the Toronto Mechanics' Institute; Catalogue of the Library of the Mechanics' Institute; Horticultural Society's Report, 1858; copies of the *Daily Colonist*, *Globe*, *Leader*, and *Atlas*, July 15th, 1858; and of the *Canada Gazette*; Farmers' Association Report, 1858; *Canadian Journal*; Coins,—one florin, an English shilling, a half-sovereign and four copper coins; Maclear's Almanac, with map of Canada, 1858; a copy of the Montreal *Witness*; a small bottle of wheat; Twelfth Annual Address to the Agricultural Association, by G. Alexander, Esq.; Annual Report and Minutes of the Agricultural Association, 1858; copies of the Markham *Economist*, the Paris *Star*, and Barrie *Spirit of the Age*.

Hon. Mr. VANKOUGHNET, Minister of Agriculture, having performed the ceremony of "laying the stone," mounted the platform, and said he felt proud

to have had the opportunity of taking so prominent a part in the interesting ceremony of to-day. It was a most important one. Not local in its character, not confined to the City of Toronto, it was a matter in which the Province might and ought on many grounds to feel a deep interest, for it was an event which marked in many ways an era in the progress of Canada. (Cheers.) We had had occasion in Great Britain and other countries to notice the interest taken in proceedings of that kind,—royalty itself condescending to take part in them, in order to encourage the industry and taste of the people. (Cheers.) And in a new country the proceedings might be regarded as not of a local but of general importance. He looked upon it as the outward and visible sign of the progress which Canada was prepared to make in the arts and sciences, for if they had not felt it of importance they would not have been at the expense of such an interesting exhibition. When he looked upon the building in its present immature state, he saw enough to inspire him with a most lively interest in it, for it was intended to be the receptacle of the evidences of their agricultural and mechanical advancement. There would be exhibited the skill of manufacturers; and the frame-works—the very iron streture which surrounded them—was the work of the artizans and citizens of Toronto. (Cheers.) It would be furnished, in fact, entirely of the productions of this country, worked up by native artizans, with but two exceptions: the glass and the iron; which would be imported from abroad. Anything of that kind, which tended to cultivate the tastes of the people, was of immense value, and he quite agreed with the gentleman who had said that not alone by agriculture would a country become rich. Agriculture never could of itself make a country rich. We must find other elements and employ other resources. He had had the privilege and happiness of taking a part in advancing arts and manufactures. In Parliament he introduced a bill by which the Board of Arts and Manufactures was incorporated, and he was glad to see it duly noticed in the parent country as an evidence of the progress we in Canada were making in our own behalf. Now the people themselves should take a local interest in the matter, for Government could not do more than provide the convenient machinery by which the people might work out their own prosperity. September, he hoped, would see the building in perfect completion, when he was sure they would have reason to congratulate themselves and the public on such an erection. He felt it was due to those interested in its establishment that an expression of gratitude should be offered to them. It was creditable to the City of Toronto, that with a munificence rarely to be equalled, it had contributed the sum of £5,000 for completing a building which would not be of such importance to it as to the rest of the Province, and he hoped that if the funds were not sufficient they would not stop, but that other municipalities would come forward and provide the sum required. A locomotive engine passing the scene at this juncture, the speaker proceeded to say that he hoped it was one of native manufacture, and that the day was not far distant when Canada would be able to produce all the materials for the building of such engines. (Hear.) For that purpose the inauguration of such a building as that was of great importance as an earnest of the exertions of Canada in the progress of every branch of industry. Such edifices would encourage a taste for the finer arts and the more occult sciences, would stimulate an advancement, hand in hand, until Canada took that position in the world which the natural advantages and geographical position of the country demanded.

Three hearty cheers for the Queen having been given, the band executed the "National Anthem," and to its martial strains the assembled persons wended their way to the train, which had been in waiting, and which speedily conveyed them back to the city.

MEETING OF THE BOARD OF AGRICULTURE.

A meeting of the Board of Agriculture was held, pursuant to notice from the Secretary, at the office, King Street, Toronto, at 11 o'clock A. M., on Tuesday, the 10th day of August, 1858.

PRESENT:—Messrs. E. W. Thomson, President; H. Ruttan, Vice-President; R. L. Denison, A. A. Burnham, Hon. A. Fergusson, Professor Buckland, W. Eerguson, Vice-President of the Agricultural Association; W. B. Jarvis, President of the Board of Arts and Manufactures, and Dr. Beatty, Vice-President of do.

The minutes of last meeting were read and approved.

Prof. BUCKLAND submitted a communication from D. B. Stevenson, Esq., President of the Association, to the effect that owing to the state of his health he feared he should be unable to discharge the duties of President during the current year. On motion it was

Resolved—That the Board condole most sincerely with Mr. Stevenson in regard to the state of his health, and regret to learn that it is such that he may be unable to discharge the duties of President of the Association during the current year; and the Board request Mr. Ferguson, first Vice-President, to assume the duties of the President's office, unless Mr. Stevenson's health shall so far improve that he may be able to discharge those duties himself.

A communication was read from the Secretary of the Toronto Local Committee, embodying resolutions from that committee to the effect that the Board be requested to keep the Exhibition open, except for perishable articles, one week longer than the time already announced, and that the Board be requested to vote the sum of $200 for premiums for bands of music at the Exhibition.

A communication was read from Mr. J. Campbell, publisher, offering to furnish views of the Exhibition Building, similar to sample, printed on paper to suit the size of the Journal and Transactions, at a rate not exceeding $17 50c. per thousand copies —a prespective sketch to be furnished by the architects. On consideration this communication was referred to the printing committee.

The SECRETARY submitted the following communication from Mr. D. Bruce:—

TORONTO, 9th August, 1858.

George Buckland, Esq., Secretary to the Board of Agriculture.

SIR,—Having left last winter at the office of the Bureau of Agriculture in this city, a number of small kegs of the Concentrated Animal Manure, prepared by the process patented by me, to be tried this spring by the President, some of the members of the Board of Agriculture, and yourself, I take the liberty of submitting to the consideration of the Board the enclosed application made by me to the Legislature for a loan of $6,000 to enable me to erect works for the manufacture of the article, with the report of the committee thereon, referring the whole to the Bureau of Agriculture, &c. Hoping that in the certificates (from parties who have tried the article) which are printed with the report, together with the result of the experiments made with the small quantities left for that purpose, the Board will find sufficient evidence of its value to justify them in advancing me on security the amount asked for from funds under their control, to establish the manufacture of it in the city of Toronto. In which case, in addition to repaying the amount in one year with interest, I will agree that the farmers of this section of the Province shall have the privilege of using my process to prepare the article for their own use without charge.

I also enclose a letter from Mr. Hirschfelder to the Secretary of the Bureau of Agriculture, informing him that it protected his cabbage plants from the Black Fly, and beg also to state that Mr. H.'s onions, after they were attacked by the maggot, were saved by a top-dressing of the fish and shale.

I have the honour to be, Sir,
Most respectfully your obedient servant,

DUNCAN BRUCE.

Accompanying Mr. Bruce's communication was the printed report of the committee of the Legislative Assembly to whom his petition had been referred, embodying the petition, statements of analyses, statements of individuals who had tried the manure on a small scale, &c. The following documents are extracted:—

PETITION

To the Honorable the Legislative Assembly of the Province of Canada.

The petition of Duncan Bruce, of Paspebiac, in the Province of Canada, now residing in the City of Toronto,

HUMBLY SHEWETH:

That your petitioner has, by a process discovered by him, succeeded in producing from the offal of fish and from animal matter, which now in towns and cities serve no other purpose than to decompose and render the air impure and unwholesome, a compound which, as a fertilizer, has on repeated trials, on various plants, been found superior to Peruvian guano, being without the caustic qualities that in so many instances render that manure destructive to crops to which it is applied.

In addition to this, your petitioner would respectfully beg leave to direct the attention of your Honorable House to the important fact, that the fertilizer, produced by him, possesses, as proved by many experiments in this country and in the United States, the peculiar property of protecting crops to which it is applied from the ravages of insects.

That your petitioner has exhausted his own private means on the many experiments required to bring his invention to completion, while the general scarcity of money arising from the late commercial crisis has prevented others from joining him in the manufacture of the article so invented by him.

Your petitioner would beg leave to point out to your Honorable House the many advantages which this discovery, if successfully established, would confer on this country. It would create a new branch of business, which, at present, might amount to several hundred thousand pounds per annum, and be almost without limit in future; it would afford profitable employment to some thousands of men in manufacturing it—it would materially increase the earnings of the large number of Lower Canadians, and other British subjects now engaged in the fisheries; it would renovate land exhausted by excessive cropping; it would restore the cultivation of wheat to districts from which it has for many years been driven by insects, and arrest the progress of that agricultural scourge which is gradually spreading over the entire wheat growing portions of the country.

That these are the facts and circumstances which have induced your petitioner to make this his present application.

Wherefore he, your petititioner, humbly prays that your Honorable House will, under such conditions as to your wisdom may seem fit, grant to him a loan of fifteen hundred pounds, to enable him to erect the necessary machinery for the manufacture of the said fertilizer in sufficient quantity to prove its value and efficiency in the several respects above stated.

Such loan to be repaid in the article manufactured at its minimum valuation at such places in the Province as your Honorable House, or the Minister of Agriculture, may direct, by which, as your Honorable House must perceive, this Province will derive advantages almost incalculable.

And your petititioner, as in duty bound, will ever pray.

DUNCAN BRUCE.

TORONTO, 3rd May, 1858.

(Copy.)

STATE ASSAYER'S OFFICE,
Boston, September 22, 1856.

DEAR SIR,—I have made chemical analyses of your two samples of artificial Guano, and have obtained the following result, per cent.:

No. 1.—Fish Guano—

Organic matter and Ammonia	22.8
Shale or earthy matter	59.2
Phosphate of Lime and Oxide of Iron	13.6
Phosphate of Soda and Salt	4.4
	100.0

No. 2.—Slaughter-house Offal Guano—

Organic matter and Ammonia	53.5
Shale or earthy matter	36.5
Phosphate of Lime and Magnesia	6.5
Carbonate of Lime	1.0
Phosphate of Soda	2.5
	100.0

It is obvious from their composition that these are valuable manures.

Respectfully, your obedient servant,

(Signed,) CHARLES F. JACKSON,
State Assayer, &c.

NEW YORK, June 18, 1856.

I have tried the effect of a concentrated manure made from the offal of animals and fish; the manufacture of which has been discovered and brought forth by Duncan Bruce, Esq., the results of which, on several kinds of plants, have been quite perceptible, namely on corn, where there is quite a marked change both as respects growth and color; on lima beans, the growth has been striking and rapid. I have likewise tried it on cucumbers and melons, which, at the time I applied the manure, were in a very feeble state, and covered with the yellow bug, so that the destruction of the plants seemed nearly completed, but to my astonishment the plants sprung forth with renewed vigor, and hardly a bug was to be seen on them within 24 hours after the application of the manure. I have therefore found this manure not only a great promoter of the growth of plants, but an effectual cure against the ravages of insects. From my experiments on different plants, I can with confidence recommend it as the best fertilizer that has ever come under my notice, and congratulate Mr. Bruce on his great discovery, as a boon to the human family.

WILLIAM CURR,
Gardener,
160, East 31st Street, New York.

23rd June, 1856.

Duncan Bruce, Esq.

DEAR SIR,—After having given your "Blood" and "Fish Manures" a trial, I am prepared to say that I have found them to be admirably adapted for producing a healthy and vigorous vegetation. I give them a decided preference over guano, for reasons which I will hereafter give you *in extenso*. The odor arising from these preparations is so pungent and offensive to insects, that, for the time being, at least, they shun its very presence; and thus two important ends are accomplished apparently at one and the same time. I shall continue to use these two preparations during the season, and will give you the particulars as affecting a number of different vegetable productions. For roses and some other plants in pots, they are the best artificial fertilizers I have yet seen; and, in fact, this remark will apply, so far, to all the plants on which I have used them.

Respectfully yours.

PETER B. MEAD.

NEWARK (N. J.), 3rd October, 1856.

I have made repeated experiments the past summer, with Mr. Bruce's Fish and Offal preparation, and cheerfully recommend it as a most energetic fertilizer of both vegetable and flower plants. It was tried on verbenas, roses, petunias, as well as a variety of vegetables, which quickly assumed a plethoric growth, and continued vigorous throughout the season. I deem it a valuable addition to our chemical manures; its concentrated strength, thereby rendering it very portable, is not the least of its good qualities. A four ounce vial furnished some three dozen plants.

For Indian corn, tomatoes, egg plants, and early potatoes, it is capital.

GEORGE C. THORBURN, Florist.

TORONTO, June 14, 1858.

DEAR SIR,—I have applied Mr. Bruce's Fertilizer to various vegetables in my garden, in order to test its fertilizing power in the open ground, and also to ascertain whether it would keep off the insects.

I have now much pleasure in stating that, although the weather has been very unfavorable, and the growth, for want of heat, very slow, still its beneficial results have already, in several instances, become strikingly apparent. I applied some of it to half a bed of spinach, and in about two weeks the plants became at least three times the size of those in the other half of the bed to which the Fertilizer was not applied. Its effect upon strawberry plants was likewise highly beneficial.

As regards its keeping off the insects, I may state that I applied some to a bed of cabbage plants which were attacked by the *black fly*. They would, no doubt, have destroyed, if not all the plants, at least the most of them; but no sooner had I scattered the Fertilizer over the bed than they disappeared, and have never attacked them since.

Yours truly,

J. M. HIRSCHFELDER.

W. HUTTON, Esq.; Sec. B. A. & S.

A communication was also submitted from Mr. Brayley, agent, Toronto, accompanied by a pamphlet, in reference to an article of manure called "Sombrero Guano." This article has been recently discovered in the island of Sombrero, in the West Indies, 18 32 North Latitude, 63 30 West Longitude, which is said to contain an almost inexhaustible quantity. It is offered for sale by Messrs. Wood & Grant, New York, who claim that it contains a much larger quantity of phosphoric acid, and is consequently much more valuable as a manure, than Peruvian Guano. They state in their pamphlet that while Peruvian Guano contains but ten per cent of phosphoric acid, the Sombrero contains about 35 per cent. The Sombrero, or phosphatic guano, contains on an average 80 per cent of bone phosphate of lime, the quantity in pure bone dust being 56 per cent. Professor Hayes, State Assayer of Massachusetts, gives the following analysis of a sample. He found 100 parts to consist of:—

Moisture and organic salts of lime	8.44
Bone phosphate of lime	89.60
Sulphate of lime	1.00
Sand and Silica	86
	99.90

Mr. Brayley's communication stated that the phosphatic guano, though more valuable than the Peruvian, could be delivered in Toronto at a cheaper rate, and requested the favourable consideration of the Board in bringing the article into use.

The Secretary read a short communication from Mr. E. L. Cull, of the Canada Company's office, which had been published in the last number of the *Journal*, containing practical suggestions relative to the prevention of the devastating increase of the Wheat Fly, and which was now submitted for the approval of the Board. The members of the Board present concurred in the opinion that the suggestions were founded upon

correct observations of the habits of the insect, and that if acted upon they would tend very greatly to check its ravages.

The following communication, addressed to Mr. Fleming, seedsman of the Association, from Mr. Rose, of Cobourg, was submitted by the Secretary, accompanied by a cut sample of the "Alsike Clover" mentioned, measuring five feet in length:—

HAMILTON, by Cobourg, 6th July, 1858.

MY DEAR SIR,—By Express this P.M., I send to your address a sample of Alsike Clover, mowed this day, and just in time apparently for hay and seed. I have 4 acres of it, at which 3 men have been mowing 3⅓ days, and will finish this evening. I am anxious the Board of Agriculture should see the sample sent, and meantime I defer saying anything about the quantity of seed, for the simple reason that I cannot form an opinion, I may have 500 pounds and may have none, all depends on the success of my experiments. One fact I can speak of, and that too with something like certainty—the quantity of hay. I will certainly have *fifteen tons*. The quality can be judged by the sample sent. It is my present intention to address the Board on the subject, and for this reason I am desirous they should see the sample sent, or at any rate some of them at least, who shall be nameless, who I believe have the will and the ability to encourage improvements. I believe the introduction of this clover into Canada will do more in two years for the farmers than the Agricultural Exhibition will in twenty. No profit can accrue to me, suppose my gratuitous opinions were generally believed. I do not desire profit; I only wish I had the power to do all the good I think could be done, if supported by the influence of prominent men. I offer to give the Board every jot of my experience for 4 years with the clover, and also suggest the best means, in my opinion, to render their action available. Men may think this a small matter. So do not I; nor do I intend resting until the country generally have been induced to give it a trial. More on this subject by and by.

Yours, very truly,

Mr. Fleming, Seedsman, &c., Toronto. PATRICK WRIGHT.

P. S.—My men measured some of the clover six feet three inches high; the average will be over four and a half feet pulled. P. R. W.

The Secretary submitted the report of the committee appointed in March last, to negotiate with Mr. McDougall for the purchase of the *Agriculturist*, to the effect that the transfer had been mutually agreed upon for the sum of £300, payable to Mr. McDougall, one hundred pounds at the time of transfer by him of the paper to the Board, one hundred pounds in 12 months, and one hundred pounds in 24 months thereafter; Mr. McDougall to deliver the back numbers on hand for the current year, and two hundred sets of the volume of 1857; the Board to supply the publication for Mr. McDougall during the remainder of the year to all subscribers up to the date of transfer, all subscriptions after that date to be received by the Board. On motion the report was received and adopted.

The President, as Chairman of the Committee appointed at last meeting of the Board, to make arrangements for the trial of the Mowing and Reaping Machines intended for competition at the Provincial Exhibition, reported that a field had been selected on his own property for the trial of the Mowing Machines, and one on Mr. P. Howland's property, Dundas street, for the trial of the Reaping Machines. The trials had taken

place according to appointment, and the judges would make their report at the Exhibition.

Mr. DENISON stated that, owing to the manner in which the trial of Mowing Machines had been conducted, material damage and loss had resulted to the President's hay crop, and he had likewise, in making the arrangements, been obliged to incur some other expenses.

Hon. Mr. FERGUSSON then moved, seconded by Mr. Denison—

Resolved,—That the sum of £25 be placed at the disposal of the President, partly to cover his expenses, and partly to cover the damage done by the trial of mowers last July, on his farm.—Carried.

The Treasurer, Mr. Denison, stated to the Board, that it appeared from the public accounts, under the Act of the Legislature, 19 Vic., cap. 47, sec. 5, the object of which clause was to equalize the amounts granted to the Agricultural Societies of Upper and Lower Canada respectively, a balance had accrued to the credit of the Board of Agriculture of Upper Canada, of £3,330 6s. 1d., which he had not drawn upon; but as the Association was now incurring heavy expenditures, he proposed, with the concurrence of the Board, to draw upon this reserved balance.

It was then moved by Dr. Beattie, seconded by Mr. Burnham, and—

Resolved,—That the Treasurer of this Board be instructed to obtain the sum of money accrued to the benefit of "the several Agricultural Societies of Upper Canada," under the 19th Vic. cap. 47, sec. 5, and which it is provided, shall be paid into the hands of the Treasurer of the Board—the said sum, as per statement No. 55 of published public accounts for 1857, amounting to £3,330 6s. 1d. currency.

Several applications were received and read for the appointment of gate-keeper and care-taker to the Provincial Exhibition grounds. On motion of Mr. Denison, seconded by Mr. Burnham, the appointment was conferred upon Serjeant Dunbar, who has for years performed the duty at the Exhibitions, to the satisfaction of the Board.

The communication from the Local Committee, in reference to keeping the Exhibition open for certain articles a week longer than usual, having been taken up and discussed, it was moved and—

Resolved,—That for the purpose of affording manufacturers and others ample opportunity to exhibit their various productions, and also for the purpose of affording the public full opportunity to inspect articles that the owners may be desirous of exhibiting longer than the usual period, the building be kept open for one week after the regular show, for the exhibition of all such articles as the producers or owners may choose to leave during that additional time; and that during that time visitors be admitted at the doors of the building on the same terms as at the gates during the first week; and, further, that exhibitors be invited to leave on exhibition as many articles of a non-perishable character as they can without inconvenience.

Resolved,—That the sum of $200 be placed at the disposal of the Local Committee for premiums for Bands at the Provincial Exhibition.

Mr. Bruce's communication was then taken up and considered, and it was—

Resolved,—That the Board of Agriculture have no funds at their disposal which they could devote to the object proposed by Mr. Bruce; but at the same time the Board wish to record their opinion that an enterprise of so much importance as that of Mr. Bruce to the agricultural interest, would meet with, as it deserves, every encouragement

from the public. Sufficient time has not yet elapsed to enable the members of the Board who are testing the samples left with them by Mr. Bruce, to report; but they hope to be able to do so in due time.

Mr. Brayley's communication, with accompanying statements and pamphlets, having been taken up and considered, it was—

Resolved,—That Professors Croft and Buckland be requested to examine the specimens of Sombrero phosphatic guano submitted, and report to the Board at their earliest convenience.

The subject of lectures and public discussions during the show week being considered, it was—

Resolved,—That the Secretary, Professor Buckland, be requested to take measure to procure the aid of some popular lecturer or lecturers, to introduce subjects of moss interest to farmers and others that may be disposed to attend, on the evenings of the show week, when, after the subjects have been so introduced, conversational discussionst may be held by those disposed to take part in them. This arrangement to be carried out only in the case of a suitable room being procurable.

After some further discussion on matters of detail, and visiting the Exhibition grounds to witness the progress of the building, &c., the Board adjourned till further notice.

COUNTY AND TOWNSHIP AGRICULTURAL SOCIETIES.

Abstract of Reports received by the Board, embodying proceedings of County and Township Agricultural Societies for the year 1857, and giving when they have been forwarded, the names of officers of County Societies for the current year.

ADDINGTON.

COUNTY SOCIETY.—Number of members in 1857, eighty-three; amount of subscription, $86; balance from previous year, $41.68; amount deposited by Township branches, $292. Amount of Government grant, $540; total amount received, $959.68; amount paid Township Societies, $584; amount expended in premiums at Show, $246.75; incidental expenses, $48.50; balance carried to account of 1858, $80.43.

Secretary, 1858, C. V. PRICE, Newburgh.

TOWNSHIP BRANCHES.

AMHERST ISLAND.—Thirty-five members, subscribing $1 each; amount received from County Society, apportionment of public grant, $42; balance from 1856, $7; total receipts, $84; amount paid in premiums, $71; general expenses, $13.

CAMDEN.—Sixty-seven members; amount of subscription, $135; balance from 1856, $6.55; share of public grant, $121; grant from Township Municipality, $80. Amount paid in premiums, $291.50; incidental expenses, $34.55; balance in Treasurer's hands, $16.50.

ERNESTOWN.—Eighty-six members, subscribing $1 each; balance on hand from 1856, $23.28; share of public grant, $85; total receipts, $194.28;

amount paid in premiums, $146.50, contingent expenses, $24.70; balance in Treasurer's hands, $23.08.

SHEFFIELD.—Thirty-nine members; subscription, $44; share of public grant, $44; amount paid in premiums, $89.35.

BRANT.

Amount of subscription, $459; amount deposited by Township Society, $168; balance from 1856, $43.06; Government grant, $900; total receipts, $1570.06. This County having resolved to forego its own exhibition for the year 1857, and to give all its available funds in aid of the Provincial Exhibition, held at Brantford, the amount paid over to the Treasurer of the Provincial Association was $880; paid Onondaga Township branch on account, $17; paid premiums due from previous year $56.65; Secretary-Treasurer's salary, $120, incidental expenses, $55.36; balance remaining in hands of Treasurer, $439.05.

This County, under the Act 20 Vic. cap. 32, organized in January, 1858, a County Society for each electoral division, East and West Brant.

Secretary of East Brant Society—Wm. Patton, Paris.
President, West Brant Society—R. R. Bown, Brantford.
Secretary and Treasurer, do.—Duncan McKay, Brantford.

TOWNSHIP BRANCHES.

ONONDAGA.—One hundred and four members; subscription, $132.50; balance from 1856, $27.91; grant from Township Council, $30; part share of public grant, $17; total receipts, $207.41; amount paid Treasurer of County Society, $168; paid sundry accounts, $26.36; balance in hand, $13.05. The Directors report the Society in an unfortunate condition, pecuniarily, and unable to pay premiums awarded; for having paid their subscription money to the Treasurer of the County Society, and that officer having since failed in business, they had neither been able to get their portion of the Government Grant, or to get their own money back again, except only the sum of $17. They hope ultimately however to recover the amount.

Extract from Report.

While the President and Directors regret to report the present unfavourable condition of their money affairs, it is with pleasure that they review the otherwise healthy state of the Society, and the success which has attended their efforts during the past year; and as a proof your Directors would refer to the increased interest displayed at the last Annual Show, and the largely increased concourse of people who were attracted thither by the day's proceedings. This fact is the most cheering evidences that the results of our labours are appreciated by the farmers and mechanics of the Township. In the month of October, when the Annual Fall Show was held, there were over 300 entries of stock and articles. The show of horses was good, both as to variety and quality, some of them taking prizes at the Provincial Show held at Brantford. The classes of Durhams, Devons, and Ayrshires, shewed a decided improvement on former years, and the young classes presented a great variety of very pro-

"YOUNG VICTOR," 66, U. C. S. R.

Winner of the First Prize as a Four years old Durham Bull, at the Provincial Exhibition, Toronto, 1858. The property of Thos. Smith, Etobicoke.

Roan, calved 7th May, 1854, bred by Mr. P. Fisher, of Nelson; got by Victor, (12268), dam (Dairymaid) by Halton (11552), g. d. (Beauty 2d) by Agricola (1614) gr. g. d. (Beauty) by Snowball (2647),—by Lawnsleeves (365),—by Mr. Mason's Charles (127). *See page* 177.

mising animals. The sheep shown were mostly of the Leicester breed, and shewed an improvement on former years. Some excellent litters of pigs were shown. The show of grain, roots, and other vegetable productions was exceedingly good. The same may be said of all other articles in the produce department. Among dairy products, the butter and cheese were highly flavoured, and of good quality; the entries were numerous, and the competition spirited. The domestic department attracted attention during the whole day, and showed to great advantage the household economy reigning in the homes of Canadian yeomanry.

BRUCE.

COUNTY SOCIETY.—One hundred and thirty members, subscribing $1 each; balance from 1856, $53; deposited by township branches, $418; entry fees for competition of farms and gardens, $7.71; Government grant, $540; total receipts, $1148.71. Paid Township branches, $669.88; amount paid in premiums, $316.90; paid for building pens and various expenses of management, $165.72; balance due Treasurer, $3.79. The officers report the society in a prosperous condition.

TOWNSHIP BRANCHES.

CARRICK.—Seventy-five members; subscriptions paid, $64; share of public grant, $34.92½; total receipts, $98.92½. Amount paid in prizes, $76.97½; general expenses, $17.95

GREENOCK.—Amount of subscription, $58; share of public grant, $35; amount awarded in prizes, $99.50. The report is imperfect.

SAUGEEN.—Seventy members; amount of subscription, $97; share of public grant, $55.40; total receipts, $152.40; amount paid in premiums, $67.50; general expenses, $8.87½; balance in Treasurer's hands, $76.02½.

CARLETON.

COUNTY SOCIETY.—Fifty-nine members; amount of subscriptions paid, $222.75; deposited by township branches, $409; received for grass seeds sold, $37.25; Government grant, $900; total receipts $1569; amount paid to township branches, $948.97; paid for *Agriculturist* $20; paid in premiums at Fair and ploughing match, $485; general expenses, $114.86; balance in hand, 17 cents. Officers for 1858:—

President,—Geo. Bell, Nepean.

Secretary and Treasurer,—J. G. Bell, Ottawa.

Extract from Report.

The Spring opened cold and dry, which kept back vegetation. The months of May and June were so cool that grass and other plants did not thrive. We had frost every month of the season. The first warm night was the 10th of July. Hay was late and thin. On the 16th July rain began to fall, and continued for ten days, more or less, every day or night. There were eleven rainy days in the last half of July, eleven in August, and eight in September. Much hay was spoiled, and some lost,—what was saved cost two or three times as much as usual from the wet weather. Fall Wheat was much winter-killed—the yield about one-third below an average. Spring Wheat better—on high land much

better—but in low land it was laid, and very little wheat in the straw. The midge or maggot did much damage, especially in bald wheat. Fall Wheat, indeed, the whole harvest, was from two to three weeks later in being got into the barns than usual, which added much to the cost of the crop. Oats a full average crop. Peas—too much straw; crop much below an average one. Corn about an average crop. Turnips not an average crop. Potatoes a fair crop, but the rot has been prevalent this season.

A fair amount of improvements have been made in building barns, stumping, and draining. Tiles are much wanted to make draining cheaper and better. Numbers of mowers, reapers, and thrashing-mills, with other useful implements, have been procured by farmers this season.

At the County Agricultural Exhibition at Ottawa, good horses and cattle were shown—certainly as good as usual. Sheep were few in number, but very good. The Spring Wheat shown weighed 62 lbs. per bushels,—Fall Wheat more. Butter and Cheese very good; with some excellent manufacted goods, and ladies' work in good style. But there ought to have been far more competition. It is a mistake of the farmers that they take so little interest in the County Exhibition. There is no doubt that if farmers would employ more skill, we, as a county, would sell from 10 to 15 per cent. more than we do. Taken altogether, this has been a bad year for the farmers here. Wages high, men scarce, and the weather wet, so that little work was done, and produce very low. Any farmer who had to hire his help cannot make it pay. Present prices will not work the farm, leaving nothing for the capital or skill and time of the owner.

In travelling through the County one wonders at the groves of weeds to be met with; and no trouble taken to destroy them. The sides of the roads are in many places covered with thistles, which provide plenty of seed to supply that pest to the farmer. The Legislature could do nothing so good for us as to extend the statute to prevent the abuses to Agriculture to all Canada.

TOWNSHIP BRANCHES.

GLOUCESTER.—Forty-four members; subscription, $122; balance in hand from previous year and sundries, $31.46; share of public grant, $158.72; total receipts, $312.17½; amount paid in premiums on green crops, &c., $245.64; expenses of management, $70.35; balance due Treasurer, $3.80.

HUNTLEY.—Thirteen members; amount of subscription, $66; share of public grant, $66. The report is imperfect.

NORTH GOWER AND MARLBOROUGH.—Twenty-eight members, amount of subscription $60; share of Government grant, $79.21; balance from previous year, $24.33; total receipts, $163.54; amount paid in premiums, &c., $131.32; balance in Treasurer's hands, $32.22.

MARCH.—Amount of subscription deposited, $85; share of grant, $102.21; amount paid in premiums, $186; expenses, $15.22. Report imperfect.

RICHMOND AND GOULBURN.—Fifty-one members; subscription, $59; share of grant, $54.13; paid in premiums, $88.65. Report imperfect.

OSGOODE.—No report from this Society. Amount deposited with County Society, $52; share of Government grant, $68.66.

DUNDAS.

COUNTY SOCIETY.—One hundred and twenty-three members; subscription, $131; deposited by township branches, $119; Government grant, $540; admission fees received at gate of show ground, $130; total receipts, $910.06. Amount paid township branches, $440.50; amount paid in premiums, $328.50; paid for fencing grounds, $39.89; other expenses, $74.70; balance in Treasurer's hands, $26.47.

President, 1858, Wm. Elliot, Iroquois.

Secretary and Treasurer, John S. Ross, Iroquois.

TOWNSHIP BRANCHES.

MOUNTAIN.—Forty-six members, amount of subscription, $70; Government grant, $148.59; total receipts, $219.50. Paid in premiums, $182; expenses, $37.50. This is a new society, and the Directors report a very satisfactory commencement.

Extract from Report.

The board would notice that very little attention has heretofore been given to the obtaining instruction and information on agricultural subjects by the study and perusal of periodicals devoted to that purpose, and they think an effort should be made for the more general circulation of agricultural journals, of our own Upper Canada one at least.

It is as easy to raise a first class colt, calf, lamb, hog or fowl, as it is a poor inferior one and costs no more; they would therefore urge on the society the great benefit of obtaining some first class male animals for the improvement of the stock referred to.

From the shortness of our seasons for work, and the high price of labour it will be sound policy to prepare early for the introduction into the township of patent reaping and mowing labour saving machines, horse-rakes, &c., in order to do this the strictest attention should be paid to clear our fields of stumps and stones and a constant use of the field roller.

The exhibition of roots at our annual show was very creditable for a first essay, and shows the capability of our soil to raise them in great perfection; too early attention cannot be given to the more extended production of them, as experience has shewn the great utility of feeding cattle in connection with course fodder.

From the great natural fertility of our soil, too little attention has been paid to a system of rotation of crops and the making and saving of manures; these must in future engage more of our attention, as experience has shewn that even the richest soil, by constant and injudicious cropping, may be so exhausted as to become barren.

WINCHESTER.—Eighty-seven members; subscription, $134.50; share of public grant, $172.90; total receipts, $307.40; amount paid in premiums, $195.75; expenses, $17.50; balance in hand, $94.15.

DURHAM.

COUNTY SOCIETY.—Seventy-two members; subscription, $72; deposited by township branches, $793; Government grant, $540; donation from Hope Society, $100; from Hope Corporation, $50; local collections, $50.62. Total

receipts, $1624.22. Amount paid Treasurer due from previous year, $189.30; paid township branches, $1007.75; paid in premiums, $334.50; expenses, $76; balance due Treasurer, $4.60. Electoral Division Societies were formed in this county in 1858, under the Act 20 Vic., cap. 32.

Officers:—East Riding, *Secretary*, H. Crea, Port Hope.

West Riding, *President*, Andrew Milligan.

Secretary, E. A. McNaughton, Newcastle.

TOWNSHIP BRANCHES.

CLARKE.—Amount of subscriptions and balance from previous year, $199.75; public grant, $46.85; total receipts $246.60. Amount paid in premiums, $149; paid for *Agriculturist*, $60; expenses, &c., $34.25; balance in Treasurer's hands, $3.35.

DARLINGTON.—One hundred and fifty-four members; amount of subscription, $190; special subscriptions for Horse Show, $63.50; share of grant, $59.58; premiums paid at Horse Show in spring, $82; Wheat and green crop Show, $48; Fall Show, $249.75. No balance sheet given.

HOPE.—One hundred and seventy-nine members; subscription, $181.50; Government grant, $48.20; received from sale of seeds, $83.70; total receipts, $313.40. Amount paid for *Agriculturist*, $100; donation to County Society, $100; amount paid for turnip and carrot seeds, $67.50; paid balance due Treasurer from previous year, $12.25; expenses, $14.64; balance in hand, $19.01.

Extract from Report.

Your directors congratulate you upon the energy and enterprise of our farmers and breeders. Thanks to their zeal, Hope possesses several fine herds of improved breeds of cattle, sheep and swine, which we flatter ourselves would compete favorably with any in the Province. Reaping and mowing machines, and other labor saving implements, are used on almost every farm of any extent in the township, which in the past unusual wet season proved very valuable, and we venture the opinion that to the successful prosecution of farming they can but ill be dispensed with.

Your directors have great pleasure in reporting the crops generally pretty good. Wheat, we think, is beneath an average crop, owing to the heavy rains about harvest time and to the ravages of the midge—the latter cause, your directors feel confident, may be much mitigated, as its depredations was principally committed on the late or winter killed fall wheat and early sown spring wheat. Your directors would therefore urge upon farmers the increasing necessity of a higher cultivation of their farms and an increasing attention to the draining of their fall wheat lands, securing thereby earlier harvests.

MANVERS.—Seventy-two members; amount of subscription, $90; balance from previous year, $20.70; share of Government grant, $19.50; total receipts, $130.20. Amounts paid in premiums, $102; expenses, $13.85; balance in hand, $14.35.

CAVAN.—Amount deposited with Treasurer of County Society, $94; apportionment of Government grant, $25.25. No further report.

CARTWRIGHT.—Amount deposited, $56; Government grant, $15.17. No further report.

ELGIN.

COUNTY SOCIETY.—Sixty-three members; amount of subscription, $63; balance from 1856, $388.90; amount deposited by township branches, $450; Government grant, $900; total receipts, $1789.90. Amount paid to Township branches, $935; paid in premiums, $216.25; expenses, $81.45; balance in Treasurer's hands, $557.20.

TOWNSHIP BRANCHES.

ALLBOROUGH.—Amount deposited, $103; apportionment of Government grant received, $127. No further report.

BAYHAM.—Sixty-five members; subscription, $67.25; public grant $72; total receipts, $262.73. Amount paid in prizes, $175; expenses, $38.72; balance in hands of Treasurer, $49.01.

Extract from Report.

This branch Society, so far as we know, never was in a more flourishing condition than at the present time, and we think its prosperity might be traced to the granting of premiums to successful competitors, in place of purchasing and keeping stock as was formerly done by this Society. There were advantages derived by individual members under that system. Yet it was impossible to make a fair distribution of time that each should possess the stock and all receive justice. Another class of the community who are equally responsible, and taking a great interest in the various societies, and do not require the use of stock, are the mechanics. Manufactured articles, the ingenuity and developement of man's genius, form a strong arm in support of the various societies. Therefore we consider the true principle of giving justice to all parties concerned, is to grant premiums by the Branch Agricultural Societies irrespective of craft or calling. A suggestion might be made here, and if carried out we think it would give satisfaction and the county be generally benefitted. It is this: Let all the Branch Societies adopt the awarding of premiums and sell their stock, the County Society, doing away, with few exceptions, the awarding of premiums, and use their funds in importing or securing improved stock for the use and benefit of the various Branch Societies. Should this suggestion be improved upon, no greater benefit could be conferred upon us than securing a well bred stallion and travelling him for the use of each Branch Society.

MALAHIDE.—Amount deposited, $47; share of public grant received, $58. No further report.

SOUTHWOLD AND DUNWICH.—One hundred and fifty-two members; amount of subscription, $182; share of Government grant, $196; received for use of bulls owned by society, $56.75; balance on hand from 1856, $220.60; total receipts, $655.35. Amount paid for purchase and keep of Bulls, $404.20; other expenses, $42; balance in Treasurer's hands, $209.15.

YARMOUTH.—Eighty-one members; subscription, $81; balance from 1856, $242.77; share of Government grant, $84; total receipts, $407.77. Amount paid in premiums, $247.50; expenses, $50; balance in Treasurer's hands, February 1858, $110.27.

ESSEX.

COUNTY SOCIETY.—One hundred and thirty-one members; subscriptions paid, $184.87; deposited by Township Branch Societies, $373; balance on hand from 1856, $54.29; Government grant, $900; total receipts, $1512.16. Amount paid township branches, $912; paid in premiums, $451; expenses, $141.13; balance in hand, $8.03.

President, 1858, Josiah Strong,
Secretary, Alex. Bartlett, Windsor.

Extract from Report.

Your Board are sorry to report again a partial failure of the wheat crop in this county through the destructive ravages of the weevil, rendering many fields scarcely worth the reaping, thereby taking away from the farmer the principal means of support, and preventing him from meeting many obligations he would have met had his wheat not failed; and it also curtails the means at his command for making improvements on his farm. While on this subject your committee would take this means of expressing their obligation to Mr. Rankin, the late member for the county, for his presentation of a number of copies of an excellent essay on the wheat destroyer by Professor Hind, of Trinity College, Toronto, which will doubtless well repay a perusal by any of the members of the Society. Many valuable suggestions are there thrown out which will be found useful to the farmers in the cultivation of the wheat crop. The wild lands of the county also require a passing notice from us. At present a large quantity of them are held by speculators, who only hold them in order to make money by them. They ask such enormous prices for them that the industrious emigrant is prevented from settling amongst us, and is compelled to find a home in the neighbouring republic, where he will find lands at prices more suitable to his means than in Canada. Thus a large portion of our fine county is nothing better than a wilderness, arising entirely from the before-mentioned facts; and although it is not our province to enter into the discussion of a law to prevent such a state of things, still we may be allowed to suggest that a limit might be set to the amount of lands held by one man, instead of allowing him to hold tens of thousands of acres as at present.

TOWNSHIP BRANCHES.

COLCHESTER.—Fifty-nine members; subscription, $59; balance from previous year, $373.24; Government grant, $85; received for services of stallion owned by society, $72; total receipts, $591.24; expenses keeping horse, $115.50; other expenses, $15.50; balance in Treasurer's hands, $460.24. The Society held no show during the year, the directors being of opinion that their funds could be better applied in purchasing improved stock for the use of the Society than in holding Township Fairs.

GOSFIELD AND MERSEA.—One hundred and twenty-six members; subscription, $126; balance from 1856, $50.71; proceeds of sales of boars and rams, $171.75; received in repayment of money lent, $138.08; share of public grant, $182; total receipts, $668.74; amount paid for two Devon bulls, and expenses purchasing, $372.50; paid instalment in purchase of stallion, $106; paid note of hand, $130; expenses, $27.82; balance in Treasurer's hands, $32.42.

MAIDSTONE, ROCHESTER AND TILBURY WEST.—Eighty-seven members; amount of subscription, $87; balance from 1856, $62.86; Government grant, $168; receipts from sale and use of stock, $56.60; total receipts, $244.46; amount paid for purchase and keeping stock, $216.50; paid in premiums, $20; expenses, $20.88; balance due Treasurer, $12.92.

MALDEN AND ANDERDON.—One-hundred and seven members; amount of subscriptions paid, $104; balance in hand from 1856, $126.67; public grant, $149; total recepts, $379.67; amount paid in premiums, $307.25; expenses, $34.57; balance in Treasurer's hands, $37.85.

FRONTENAC.

COUNTY SOCIETY.—One hundred and two members; amount of subscription, $201; balance on hand from 1856, $7.64; deposited by Township Branches, $211.50; Government grant, $540; entrance fees at the Crystal Palace show grounds, $62.33; received from Treasurer of Local Committee, balance remaining in his hands, $107.42; total receipts, $1128. Amount paid Township Branches, $535.50; amount paid in premiums at Fall Show, $385; expenses draining and improving Crystal Palace show grounds, $73.95; other expenses, $109.60; balance remaining in Treasurer's hands, $25.84.

President, 1858, Angus Cameron, Garden Island.

Secretary and Treasurer, Thos. Glassup, Kingston.

An Electoral Division Society was organized in January 1856, for the City of Kingston, under the Act 20 Vic., cap. 32; President, O. S. Gildersleeve, Kingston; Secretary and Treasurer, John Duff, Kingston.

TOWNSHIP BRANCHES.

KINGSTON.—Thirty members; subscriptions paid, $55.50; balance from 1856, $2; share of Government grant, $64.80; total receipts $122.30; amount paid in premiums, $109.32; expenses, $9; balance in hand, $4.18.

LOUGHBOROUGH.—Thirty-one members; subscription, $45.20; Government grant, $64.80; total receipts, $110; amount paid in premiums $105.22; balance in hand, $4.78.

PITTSBURGH.—Forty-two members; subscription, $54.50; balance from 1856, $50; Government grant, $64.80; total receipts, $169.30; amount paid in premiums, $117.92; expenses, $44.77; balance in hand, $6.62.

PORTLAND.—Balance remaining in Treasurer's hands from previous year, $28.79. No show held since 1855. No further report of proceedings.

STORRINGTON.—Twenty-eight members; subscription, $56; share of grant, $64.80; total receipts, $120.80; paid in premiums, $108.45; expenses $11; balance in hand, $1.35.

WOLFE ISLAND.—Amount of subscription, $40; Government grant, $64.80; total receipts, $104.40; amount paid in premiums, $80; balance remaining in hands of Treasurer, $24.80.

GLENGARRY.

COUNTY SOCIETY.—One hundred and forty members; amount of subscriptions, $143; balance from 1856, $11.20; deposited by Township branches, $228; Government grant, $540; total receipts, $922.20; amount paid townships, $552; paid in premiums, $266.40; expenses, $38.45; balance in Treasurer's hands, $63.35.

TOWNSHIP BRANCHES.

CHARLOTTENBURGH AND LANCASTER.—Seventy-one members; subscription, $153; proceeds of note of hand, $100; Government grant, $208.17; total receipts, $461.17; paid Treasurer, balance due him from 1856, $1.11; paid Committee to procure a stallion, $26; paid for seed wheat, $400; *Agriculturist*, $6.50; expenses and sundries, $24.55; balance in Treasurer's hands, $3.03.

LOCHIEL AND KENYON.—Amount deposited, $81.50; share of Government grant, $115.83. No further report.

GRENVILLE.

COUNTY SOCIETY.—Seventy-five members; amount of subscription, $222.50; Government grant, $428; total receipts, $650.50; amount paid in prizes, $447.31; expenses, $89.30; balance remaining in Treasurer's hands, $203.19. This County Society was first organized in 1857, and held a very satisfactory exhibition in October at North Augusta. In January, an Electoral Division Society was organized for the South Riding of Grenville, under the Act 20th Victoria, cap. 32.

President for 1858, Wm. Ellis, Prescott.

Secretary, J. S. Lynch, Prescott.

GREY.

COUNTY SOCIETY.—Eighty-seven members; amount of subscription, $89; balance on hand from 1856, $115.62; deposited by township branches, $317; Government grant, $900; total receipts, $1421.62; amount paid township branches, $852.10; amount paid in prizes, $323.75; expenses, $156.65; balance in Treasurer's hands, $89.12.

President, Geo. Snyder, Owen Sound.

TOWNSHIP BRANCHES.

ARTEMESIA.—Forty-five members; amount of subscription, $48.50; Government grant for 1856, $43.12; total receipts, $91.62; amount paid in premiums, $70.50; expenses, $7.62; balance in hand, $13.50.

DERBY.—Amount of subscriptions, $55; share of public grant, $80. The Society held no Exhibition in the year 1857, but expended its funds in the purchase of two acres of land, now the unencumbered property of the Society, for a show ground, at a cost of $120, and in copies of the *Agriculturist*.

HOLLAND.—Forty-two members; subscription $42; share of public grant, $62; balance from 1856, $13; total receipts, $117; amount paid in premiums, $86.75; expenses, $19.35; balance ir hand, $4.90.

MOUNT FOREST.—Forty-seven members; amount of subscription, $55; balance from 1856, $88; Government grant, $93; total receipts, $236; paid in premiums, $134; expenses, $21.43; balance in Treasurer's hands, $80.57.

ST. VINCENT.—Amount of subscriptions, $62.50; share of Legislative grant, $95; balance on hand from 1856, $21 84; total receipts, $179.34; paid in premiums, $120; expenses, $17.38; balance in hand, $41.96.

Extract from Report.

The Agricultural Society of this place is in a progressive but not very rapid state of improvement. We have certainly better sheep and pigs, and the horned cattle are somewhat better; but from the facility of keeping any amount of stock in the woods in the summer, too many persons overstock, and while this continues, large and thorough-bred cattle would suffer even more than the smaller native stock. The samples of grain are clearer from smut and other rubbish, owing to greater pains being taken in the selection and dressing the seed. We are in too infant a state for any thing like scientific farming, but are not behind other townships similarly situated.

SULLIVAN.—Fifty-four members; subscription, $54; balance from 1856, $3.47; Government grant, $83.60; total receipts, $141.07; paid in premiums, $65.50; *Agriculturist*, $25; expenses, $18.20; balance in hand, $32.37.

Extract from Report.

"There is a marked improvement in stock, especially in sheep, and we hope that continued efforts will be made in the same direction, than which nothing will be more profitable to the farmer in the long run; as our great distance from a frontier market, and deficient means of communication, place us at a disadvantage in the production of grain."

SYDENHAM.—Fifty-five members; subscription $62; balance from 1856, $24.81; Government grant, $165.40; total receipts, $192.21; amount paid in premiums, $128; *Agriculturist*, $8; expenses, $57.04.

HALDIMAND.

COUNTY SOCIETY.—One hundred and three members; subscriptions paid, $102; amount deposited by townships not stated; Government grant, $900; apportionment of public grant paid Township Societies, $540; paid in prizes, $282; agricultural building, $116; expenses $64.

President, George Docker, Dunnville.

Secretary, Jacob Young, York.

TOWNSHIP BRANCHES.

RAINHAM.—Eighty-three members; subscription, $83; share of grant, $123.47; total receipts, $206.47; amount paid in prizes at Fair and ploughing match, $152.75; expenses $28; balance in hand, $25.72.

SENECA, ONEIDA AND NORTH CAYUGA.—One hundred and thirty-six members; subscription, $136; Government grant, $193.37; total receipts, $329.37; amount paid in prizes, $227; expenses, including balance due Treasurer from 1856, $88.72; balance remaining in hands of Treasurer, $13.65.

WALPOLE.—One hundred and fifty members; subscription, $154; balance from 1856, $50.15; Government grant, $223; total receipts, $427.15; amount paid in premiums, $296.50; expenses, $41.50; balance in hand, $89.15.

HALTON.

COUNTY SOCIETY.—Two hundred and twenty-five members; subscription, $309.50; deposited by township branches, $479; Government grant, $900; grant from County Council, $100; received from sale of tickets, $121; total receipts, $1909.50; amount paid township branches, $1019.04; paid late Treasurer balance due him, $14.84; paid in premiums, $452.50; expenses, $111.81; balance in hand, $321.61.

President, J. R. Bessey, Esquesing.

Secretary, Wm. C. Beaty, Omagh.

TOWNSHIP BRANCHES.

ESQUESING.—Amount of subscription, $100; balance in hand from 1856, $70; share of public grant, $126; total receipts $269; amount paid in premiums, $226.25; expenses, $30.60; balance in hand, $39.15.

NASSAGAWEYA.—One hundred and nineteen members; amount of subscription, $119.50; balance in hand from previous year, $31.85; Government grant, $99; total receipts, $250.35; paid in prizes at show, $226.50; ploughing match, $16.35; expenses, $31.57; balance due Treasurer, $16.07.

NELSON.—One hundred and twenty-nine members; subscription, $130; balance in hand from 1856, $59.68; total receipts, $326.68; paid in premiums, $244.30; expenses, $66.25; balance in hand, $16.13.

TRAFALGAR.—One hundred members; amount of subscriptions, $169; balance from 1856, $60.75; apportionment of public grant, $177; total receipts, $406.75; amount paid in premiums, $230; expenses, $39 30; balance in hand, $137.45.

HASTINGS.

COUNTY SOCIETY.—No report has been received from this County Society of proceedings for the year 1857. The amount stated in the usual affidavit to have been received as subscriptions for the year was $352; and the amount of Government grant receivable was $900. Electoral Division Societies were organized in January 1858, under the New Act, for the North and South Ridings of the county.

NORTH RIDING.—*President*, Henry Ostrom, Moira. *Secretary*, Elijah Ketcheson, Moira.

SOUTH RIDING.—*President*, Billa Flint, Belleville. *Secretary*, Jacob Jones, Belleville.

TOWNSHIP BRANCHES.

TYENDINAGA.—This is the only society in the county which has sent in a report for the year 1857. Fifty-four members; subscription, $54; balance from

1856, $43.75; public grant, $100; total receipts, $197.75; amount paid in premiums, $155.87; expenses, $14; balance remaining in Treasurer's hands, $27.88.

Extract from Report.

It is gratifying to us, as it must also be cheering to every individual member, to know from his own experience that this township is making quite an onward movement, both in farming operations and in the general improvement of the very best kinds of agricultural stock, as well as in all kinds of farm produce. It gives us much pleasure to observe, that throughout the township our farmers are quite alive to the necessity of raising root crops for winter feed, and are applying themselves assiduously to accomplish this desideratum. We also rejoice to observe that they are putting in a much larger breadth of clover and other profitable grass seeds, and many of them are throwing their farms into something like a proper course of husbandry, by which means we are sure they will quickly realize the extensive benefits to be derived from such enlightened procedure.

It gives us much concern to notice, that the weevil made serious inroads among the fall wheat crop of last year in this township; but that there were many exceptions our autumn exhibition abundantly proved. We are however, happy to notice that spring wheat generally, and all other spring grains were most abundant, and the hay crop certainly exceeded a full average, as also did roots and vegetables, with the exception, in some cases, of potatoes. It is also pleasing to observe, that up to last harvest, throughout the township, there was a considerable amount of board fencing made, and extensive preparations were being made for buildings of various descriptions, but the partial failure of the fall wheat crop (as already mentioned) and the general downward tendency of the prices of all kinds of grain, &c., has put a stop to many good intentions in this respect.

Before bringing our report to a conclusion, we think it but justice to present our acknowledgments to our active townsman, Mr. E. H. Lewis, for the many excellent stallions he has imported into this township, and especially for the "Morgan" horse, which he introduced nearly two years ago, the rising stock of which are now the pride of every farmer possessing them.

HURON.

COUNTY SOCIETY.—One hundred and four members; amount of subscription, $114.10; deposited by township branches, $504; proceeds of note at bank, $200; received for clover seed sold, $86.46; turnip seed, $13.37; premium wheat, $35; Government grant, $540; Canada Company grant, $60; received in payment of a note, $32; total receipts, $1584.93; amount paid Treasurer, balance due from 1856, $127.22; paid for clover and other seeds, $84; paid township branches $803.15; paid note at Bank $200; paid in premiums, $300.50; expenses, &c., $165.05; balance due Treasurer, $98.26.

President, David Clark.

Secretary, Andrew Johnston. Goderich.

TOWNSHIP BRANCHES.

CLINTON.—Forty-nine members; amount of subscription, $82.62; cash received on a note, $40; share of public grant, $35.64; sundries, $3.70; total receipts, $161.96; amount paid in prizes at spring and fall shows, $95.40; paid amounts due from previous year, $40; expenses, &c., $26.46.

EXETER.—Seventy-two members; subscriptions paid, $102; balance on hand from 1856, $2.24; Government grant, $60.58; total receipts, $164.62; amount paid in premiums, $115.90; expenses, $30.92; balance in hand, $17.79.

HARPURHEY.—One hundred and twenty members; subscriptions, $120; balance from 1856, $26.04; share of Goverament grant, $71.23; prize wheat, $3; total receipts, $220.27; paid in prizes, $155.25; expenses, $39.61; balance in hand, $25.42.

HAY.—Sixty-two members; subscription, $68; balance from 1856, $27.65; Government grant, $35.52; total receipts, $131.17; amount paid in premiums, $138; expenses, $20.75; balance due Treasurer, $27.58.

STANLEY.—Seventy-one members; subscriptions paid, $97; Government grant, $44.61; total receipts, $141.61; paid in premiums, $128.50; expenses, $36.48; balance due Treasurer, $26.62.

WAWANOSH AND ASHFIELD.—Fifty-one members; subscription, $58.50; No further report.

BAYFIELD.—Amount deposited, $80; public grant, $47.68. No further report.

KENT.

COUNTY SOCIETY.—Amount of subscriptions, $199; deposited by Township branches, $380; balance on hand from 1856, $65.78; Government grant, $900; sundries, $5; total receipts, $1549.78; amount paid township branches, $817; paid in premiums, $349.75; paid for *Agriculturist*, $40; expenses, $109.15; balance in Treasurer's hands, $233.88.

President, George Wade Foott, Chatham.

Secretary, Richard Monck, Chatham.

Extract from Report.

The farmers are beginning to take an increased interest in those annual exhibitions and ploughing matches, which indicates an approval of the mode of disposing of so much of the Society's funds; and which, no doubt, must tend to encourage agricultural industry in all its branches.

Your Directors report with pleasure that some of the Townships have introduced choice breeding animals, horses, cattle, sheep and swine, as well as new and improved agricultural implements, the beneficial effects of which must manifest themselves in after years.

Your Directors would further state, that they have, as usual, given to each county subscriber a copy of that very useful and excellent paper the *Canadian Agriculturist*, and would strongly recommend the several Township Societies to subscribe in like manner for that most important publication.

At our annual exhibition the amount of stock of all kinds was good. The coarse grain, such as oats, barley, corn and peas were excellent. Wheat not as good as in former years, being injured by the fly or weevil, and it is believed a less breadth of wheat has been planted this year than for years back, in consequence of the ravages of that most destructive insect. The vegetables and fruit of all kinds were of the first class.

In farming implements but small numbers exhibited. A large quantity of cloth and other hand manufactures were exhibited of superior quality. Exceed-

ingly good butter and cheese were shown, but the quantity was limited. Of agricultural implements we have several first class manufactories within our town and county, notwithstanding that at our annual exhibition very few implements of any kind were exhibited.

During the ensuing year it is intended to erect a building on the fair ground for the use of exhibitors of all kinds of produce, implements and manufactures, and generally for the convenience of all those attending the fair.

TOWNSHIP BRANCHES.

CHATHAM.—Forty-four members; amount of subscription, $49; apportionment of public grant received, $46; amount received in payment of bulls sold, $94.53; total receipts, $189.53; amount paid in premiums, $50.75; amount paid for keeping bulls, $108.50; expenses, $19.75; balance in hand, $10 53.

HARWICH.—One hundred and nineteen members; subscriptions, $128.86; balance on hand from 1856, $4.85; share of public grant, $141.45; received for services of stallion, $320.50; received in payment of a note, $100; total receipts, $696.21; paid balance due on purchase of stallion, $50; paid for seeds, $22.90; paid for keeping horse, $149; paid note $108; paid in premiums at fair, $148.60; ploughing match, $12; expenses, $42.30; balance in hand, $8.41.

Extract from Report.

We beg leave to make a few remarks on some of the crops that were grown in our township last year. Fall wheat was almost a total failure; it would scarcely average eight bushels per acre. The ravages of the midge have been very discouraging, so much so that there is not one-tenth of the summer fallows sown, and if the midge still continues its destructiveness, we are of opinion that there will be little or no fall wheat sown next year. We regret to have to say that it is not confined to wheat alone, for there are complaints of its being in the barley and oats also. Peas have been a good average crop; the bug is nearly gone from among them. There was a great quantity of potatoes planted last spring; the old disease showed itself among them in the early part of the season, but we learn that none that were put up for the winter have shown any symptoms of the disease.

HOWARD AND ORFORD.—Ninety-eight members; amount of subscription, $101; balance from previous year, $31.56; received for services of stallion, $264.25; Government grant, $81.65; received for sheep sold, $23.50; premium wheat sold, $2.25; total receipts, $504.21; paid in premiums, $99.25; paid money borrowed, $115; paid for travelling and keeping horse, $208; expenses and sundries, $27.63; balance in Treasurer's hands, $54.33. The Directors report that the samples of wheat exhibited at their show were inferior, owing to the ravages of the midge "which had been the most destructive on low lands, and in those localities in which the wheat was late in ripening." They also report that "the potato crop had been much injured by the rot, except where sown upon high sandy lands."

RALEIGH.—Thirty members; amount of subscriptions, $50; balance from 1856, $78.72; Government grant, $57.50; received in payment of various notes taken for stock, &c., sold by the Society, $337.58; total receipts, $523.80; paid

debts due from previous year, and in purchase of thorough bred sheep and pigs, and expenses, $398; balance in hand $125.80. The Directors report that their investment in superior sheep and pigs had been very advantageous, having sold the animals by auction at a considerable profit.

ROMNEY.—Twenty-three members; subscription, $46; Government grant, $52.50; balance in hand from 1856, $244.50; for seeds sold, and in payment of various notes, $87.08; total receipts, $430.08; paid for use of a bull, $23; paid for wheat, oats and other seeds, and expenses, $86.43; *Agriculturist*, $11; premiums at ploughing match, $11; balance in Treasurer's hands. $298.64.

TILBURY EAST.—Thirty-nine members; subscription, $50; balance from 1856, $40; Government grant, $57.50; total receipts, $147.50; amount for a bull for use of the Society, $37.50; expenses, $2.50; balance remaining in Treasurer's hands, $107.50.

LAMBTON.

COUNTY SOCIETY.—One hundred and eighty-three members; amount of subscriptions paid, $206.15; balance from 1856, $521.41; deposited by township branches, $477; Government grant, $900; sundries, $4.28; total receipts, $2108.84; amount paid for agricultural papers for members, $106.70; premiums on stallions, $150; paid township branches, $844.23; paid for spring wheat for seed, with expenses of freight, &c., $194.33; paid instalment on lot purchased by Society for an Agricultural Hall, $137.06; premiums at Fall Fair, $256.38; expenses and sundries, $88.67; balance in hand, $321.58.

Secretary, Ebenezer Watson, Sarnia.

Extract from Report.

In looking back on the past year, your Board feel that they cannot congratulate you on the prosperous state of the county, as some of their predecessors have so justly done. The year past has been one of almost unparalleled commercial embarrassment, and this has affected, to a greater or less degree, every class in the community. Your Board however, confidently believe that this county has suffered as little from the pressure of the times as any county in the Province.

The greatest calamity, in an agricultural point of view, which has befallen this part of Canada during the past year, is the almost universal failure of winter wheat, which has been caused by the devastations of the *wheat midge*. Early sown spring wheat, in many cases, has also suffered severely from the same cause. How long these depredators may continue amongst us, or what may be the extent of the future damage they may occasion, is, of course, impossible for us to predict. Up to this time no effectual remedy for their ravages seems to have been discovered. It is probable, as has been the case in other parts of Canada, that we shall have to discontinue the sowing of winter wheat, till the insects shall have run their course and disappeared. Though fall wheat has been, to a great extent, a failure, the spring crops have generally turned out well; and for dairy purposes the season has been more than usually favorable.

It was determined by the Board, to procure a quantity of spring wheat before the close of navigation, so that it might be in readiness for sowing next spring. After corresponding with parties in different localities, the Secretary went up to the County of Huron, and purchased a quantity of *Fife* and of *club* wheat. As

directed by your Board, the Secretary gave notice that any member of the Society might obtain one bag of this wheat on payment of the cost and charges thereon.

During the past season, various discussions took place among the members of your Board as to the expediency of purchasing cattle of some of the improved breeds; and also as to the breed best adapted to this part of the country. The high prices, however, of such animals as would be required, and the difficulty of making satisfactory arrangements about them when obtained, prevented your Board from taking any decided steps in the matter.

In order to encourage the introduction of a superior class of horses for agricultural and general purposes, your Board offered two premiums, one of $100, and another of $50, for the best and second best stallions which should travel within the bounds of the Society during the season. The first of these premiums was awarded to the owner of the horse "Farmer's Glory," and the second to the owner of the horse "French Clyde."

TOWNSHIP BRANCHES.

MOORE.—One hundred and eighty-two members; subscriptions, $183; balance from 1856, $22.69; share of public grant, $143.90; received on sale of bull, $9; total receipts, $358.59; amount paid for purchase and keeping bulls, $100.63; paid in premiums, $152.25; paid for copies of *Genesee Farmer*, and *Canadian Agriculturist*, $70; balance due Treasurer, $34.80.

PLYMPTON.—Forty-one members; subscription, $41; Government grant, $31.42; total receipts, $72.42; paid in prizes, $64.95; expenses, $4.02; balance in hand, $3.45.

Extract from Report.

The crops with us last year might be considered on the whole about a medium. In the southern part of the township, where the soil rather inclines to a sandy nature, the wheat was somewhat inferior, being damaged considerably by the midge; but in the northern part where the soil partakes of a heavy clay, the produce per acre may be estimated from 20 to 30 bushels, notwithstanding some little damage occasioned by the midge. Oats, corn, peas, hay, were a good crop, potatoes were generally affected by the rot.

SOMBRA.—Sixty-eight members; amount of subscriptions paid, $89; public grant, $39.53; total receipts, $128.53; amount paid in premiums, $14.25; paid for ram and boars, $60; expenses, 35 cents; balance in hand, $53.93.

WARWICK.—Two hundred and nineteen members; subscription, $219; share of public grant, $161; balance on hand from 1856, $54.47; received for sheep sold, $7; received in repayment of money loaned, $41; total receipts, $483.67; paid for keeping bull, $12.50; invested in loans, $413.60; expenses and sundries, $49.87; balance in hand, $7.70.

LANARK.

COUNTY SOCIETY.—No report received of proceedings for the year 1857. Electoral Division Societies were formed in January 1858 for North and South Lanark.

NORTH RIDING SOCIETY.—*Secretary*, David Campbell, Ramsay.

SOUTH RIDING SOCIETY.—*Secretary*, James Bell, Perth.

TOWNSHIP BRANCHES.

LANARK.—Balance in hand from 1856, $19 82; received from Treasurer County Society, amount of deposit and Government grant for 1856, $100; subscriptions for 1857, $64; received for *Agriculturist* supplied to members, $11.75; received for garden and clover seeds sold, $123.19; total receipts, $317.76; paid for *Agriculturist*, $19; paid for seeds, $129.33; subscriptions for 1857, deposited with County Society, $64; expenses and prizes at ploughing match, $13.55; paid for a ram, $11; paid in prizes at Fair, $53.75; expenses, $14.25; balance in hand, $12.87. This is the only Society in the County from which any report has been received for the year 1857.

LEEDS.

COUNTY SOCIETY.—One hundred and thirty-five members; amount of subscriptions paid, $104.50; deposited by township branches, $507.50; Government grant, $720; received from sale of stock, $150; total receipts, $1,484. Paid balance due treasurer from previous year, $193.06; paid township branches, $929.50; paid in premiums, $259; paid for books for library, $13.14; *Agriculturist*, $13.00; expenses, $76.30.

Electoral Division Societies were organized in January, 1858, under the new Act, for the town of Brockville, the South Riding of Leeds, and North Leeds and Grenville.

BROCKVILLE SOCIETY.—*President*, Henry Freeland, Brockville. *Secretary*, James Reynolds, Brockville.

SOUTH LEEDS SOCIETY.—*President*, Thomas Richmond, Gananoque.—*Secretary*, William Brough, Gananoque.

NORTH LEEDS AND GRENVILLE SOCIETY.—*President*, Gideon Leehy, Wolford. *Secretary*, William Smith, Frankville.

TOWNSHIP BRANCHES.

BASTARD AND CROSBY.—Forty-two members; amount of subscriptions, $188.20; Government grant, $130.80; amount paid treasurer, balance due from previous year, $23.95; paid in premiums, $260; expenses, $43.60; balance due treasurer, $8.55.

EDWARDSBURG.—This society, although situated in the County of Grenville, retained its connection with the Leeds County Society during 1857, as under the old Leeds and Grenville Society. Fifty-seven members; subscriptions, $57; balance from 1856, $24,83; Government grant, $42. Total receipts, $123.83. Paid in premiums, $91.25; incidental expenses, $22.50. Balance in Treasurer's hands, $10.08.

ELIZABETHTOWN AND YONGE.—Twenty-seven members; amount of subscription, $60.75; balance from 1856, $95.85; public grant, $44. Total receips, $200.60. Paid for Agricultural papers, $41.40; paid premiums, $102.50; paid viewers of crops, $22; general expenses, $22.92; balance in hand, $11.78.

GANANOQUE.—Twenty-seven members; amount of subscription, $135; share of Government grant, $112. Total receipts $247. Amount paid for four Leicester Rams, $84; paid for an Ayrshire Bull, $120; paid for a boar, $13.50; premiums at ploughing match, $29.50.

Extract from Report.

No Exhibition in connection with this Society was held during the past year. The Directors considered that it would be more advantageous to the members and more beneficial to the public at larger to apply the funds to the purchase of animals for the improvement of stock. Frequently, from there being but few competitors at the shows of societies like ours, prizes are awarded for very inferior animals and unworthy articles; and the grant of public money does not answer the purpose for which the Legislature intends it. But when superior animals for breeding purposes are purchased with the funds; not only are the members of the Society benefitted, but in a few years the benefit extends to the whole farming community. This society has always kept this view of the subject in sight—the breeding of superior cows, particularly, has received much attention, and the good results are apparent in the fine animals to be seen around Gananoque.

During the past year, crops in this section of the country were generally abundant. Potatoes were the only exception—they yielded poorly, and many of those raised, have since rotted and been lost. No remedy appears adequate to stop the ravages of the fell disease to which this valuable plant has become subject.

Fall wheat is again cultivated to some extent in the neighbourhood, and last year it was a good crop. Black Sea Spring Wheat was at one time a great favorite here, but now it has been almost entirely superseded by the variety called "Scotch" or "Fife" Wheat.

KITLEY.—Amount of subscription, $117; share of public grant, $90; received prize for ram owned by society, $5. Amount paid in prizes, $150; paid viewers of crops, $15; expenses, $10; balance in Treasurer's hands, $7.

LENNOX.

COUNTY SOCIETY.—One hundred and eleven members; amount of subscription, $112; deposited by township societies, $175; Government grant, $540; total receipts, $827. Amount paid to township branches, $350; amount paid in prizes, $370; expenses $96.84; balance in Treasurer's hands, $10.16.

President, John Hawley, Napanee. *Secretary*, Charles James, Napanee.

Address of President, A. Campbell, Esq., at the Annual Exhibition at Napanee, October, 1857.

GENTLEMEN:—When I observe so many about me better qualified by experience, to deliver an address on Agriculture, I approach the subject with extreme diffidence.

It is pleasing to meet on such occasions as this; when party spirit, with its concomitant evils, are lain aside, for the advancement of the real interests of the country; and none adds more to the progress of a country's wealth and prosperity than the system of Agrieulture, well and legitimately carried out with an admixture of education—for without the latter, the former cannot in

its true sense, succeed; but happily for the rising generation, "the schoolmaster is abroad." To our excellent school system, we must look for the advancement of our youth in the arts and sciences. I would then say, cherish that system which is intended to elevate the minds of your sons and daughters, that they may be prepared to occupy the position assigned them by an all-wise Providence. Without education, wealth is of little advantage; by its acquisition, your sons are enabled to occupy positions of trust and respectability, and your daughters to adorn the home circle. By education I do not mean to infer that books are the only course of study, a much more extensive field for the exercise of the mind is before us, the study of the different and improved modes of Agriculture; the arts and sciences, are all embraced. The young man must be in a position to study, examine, and decide for himself, the best modes of Agriculture, the implements used therein, with all late improvements; and the young woman, whilst learning to bring sweet music from the piano, must not forget the melodious sound of the spinning-wheel, nor a thorough knowledge of the varied branches of housewifery, for these alike tend to elevate her position in the social circle.

In taking a retrospective view of our Agricultural Societies, it is pleasing to observe their steady progress; when first organized, they were sustained by a few patriotic individuals, in a portion of the counties only—not being at that early period, general. After years of exertion, they began to increase, and become of more importance, many being induced to join them, not from patriotism, but from the sordid hope of carrying off a portion of the prizes. From County and Township shows, the Provincial was tried as an experiment; and, like its predecessors, on a small scale, had many difficulties to contend with—the farming community not coming *en masse* to its aid, as they should have done. Indeed, at the present day, I am compelled with regret to say, that too many of our farmers are possessed of the illiberal spirit of those who preceded them—never having contributed a shilling to forward the interests of Agriculture in a long life of toil and discomfort—for such it must be to the man who makes money his god, to the total neglect of the acquisition of knowledge. We can now look with pleasure to the rapid progress made by our Societies, both Provincial and County, a progress, I believe, unequalled in any country on this continent. To you who have attended the Provincial Exhibitions for some years past, in each succeeding one, a great advance has been perceptible; and I am happy to say that the late exhibition at Brantford sustained the position of progress yearly found in our Provincial Shows, the only drawback being that the elements were against us,—the principle day being a very wet and stormey one. At the meeting of delegates at Brantford, a resolution was passed authorizing the Board of Agriculture to apply to the Government for aid towards the purchase of sites, and erection of buildings for Agricultural purposes, in the several Counties in the Province. This, I think, you will agree with me, is an important move in the right direction.

The same onward progress in our County Shows, has for years been perceptible; and you will all agree with me in the expression of delight at the success of the present one. As a proof of the progress made by Canada in Agriculture, Horticulture and the Arts, I need only draw your attention to the position she held at the Exhibitions of London and Paris—a position held by no other country on this continent, and by few countries in the old world. Not only her Agricultural, but her Machinery and Mechanical Products, were the admiration of the numerous visitors and judges, and I am happy to add, that many of them carried off prizes.

I congratulate you on one important improvement in the management of the Show for this year, and have no doubt, that from its good effects this day,

the system will be continued : I mean the assistance of the ladies as judges of the works exhibited by the ladies. This, I am satisfied, will materially add to the successful working of the institution. When the ladies take an interest, success is certain ; and the specimens of their handiwork this day exhibited, prove that they are competent to lead in the arts and manufactures.

One important point in our farming operations, has, I fear, been too much neglected—that is, the proper tillage of the soil, and rotation of crops. We are too often led to crop too large an area of land. This I think an important error, as one acre well prepared will yield more than two acres in an imperfect state of culture. We should also pay more attention to a proper rotation of crops, and the laying down of our lands in grass—the latter will not only enrich the soil, but supply feed for the stock of the farmer during our long winters.

Another very important matter for our consideration is an improvement in the breed of our cattle. Although some progress has been made by us, much more requires to be effected, as we are still far behind our Western friends. When we contemplate the prices which cattle have realized at the recent sales of the Messrs. Wade, near Cobourg, and Mr. Stone of Guelph, we must feel astonished at the difference of value of the imported or improved breed over that of the common. This should stimulate us to increased exertions; and I hope that as we are in the onward path, we will not rest satisfied until we equal our friends of the West. Our lands are quite equal to theirs, both for cropping and grazing. All we require is the will and energy to carry out our wishes and we shall become one of the most important Agricultural and Stock-growing sections of Canada.

I regret, that from my imperfect knowledge of Agriculture, I feel my incompetency to enter more fully into the subject. You will please accept the will for the deed ; and with your superior practical attainments, make such advances in the science, [for science it is,] as will eventually place you in the first rank of that honorable pursuit.

TOWNSHIP BRANCHES.

FREDERICKSBURGH.—One hundred and twelve members; amount of subscription, $113; share of public grant, $111; balance on hand from 1856, $39.88; total receipts, $263.88. Paid for Agricultural papers, $12; paid in premiums, $188.75; expenses, $37.10. Balance remaining in hand, $26.03.

RICHMOND.—Sixty-five members; subscription, $66; share of government grant, $64. Total receipts, $130. Amount paid in premiums, $106.50; paid for *Agriculturist*, $16.50; expenses $4. Balance in Treasurer's hands, $3.

LINCOLN.

COUNTY SOCETY.—No report has been received from the County of Lincoln Society for the year 1857. The amount of subscriptions of the County and Townships as stated in the affidavit was $688; and the amount of government grant forwarded, $900. Electoral Division Societies were organized under the new Act for the County of Lincoln, and the Town of Niagara.

COUNTY OF LINCOLN SOCIETY.—*President*, James W. O. Clark, Louth; *Secretary*, Thomas L. Helliwell, St. Catherines.

NIAGARA ELECTORAL DIVISION SOCIETY.—*President*, E. C. Campbell, Niagara; *Secretary*, F. M. Whitelaw, Niagara.

TOWNSHIP BRANCHES.

CAISTOR.—Thirty-six members; subscriptions, $41.50; balance on hand from 1856, $17; share of public grant, $42.70. Total receipts, $101.20. Amount paid in prizes, $90; expenses, $12.15; due Treasurer, 95c.

GRIMSBY.—Amount of subscriptions, $63. No further report.

LOUTH.—Sixty-six members; subscription, $91.25; government grant, $80; balance from 1856, $1.66; receipts at show $5.50. Total received, $178.41. Amount paid in premiums, $149; expenses, $21. Balance in hand, $8.41.

MIDDLESEX.

COUNTY SOCIETY.—Two hundred and two members; amount of subscription, $231; balance on hand from 1856, $138.17; deposited by township branches, $856.75; Government grant, $900; received in rents, $250; total receipts, $2395.92. Paid in prizes at Spring Fair, $124; paid township branches, $1396.75; paid in premiums at Fall Show, $413; paid expenses of delegates to Provincial Exhibition, $50; other general expenses, $185; balance in hands of Treasurer, $224.92. The Directors report that an attempt had been made to dispose of the land held at London held in common by the Societies of Elgin and Middlesex, but that it had not yet been successful. They recommend the members to offer every inducement for the holding of the Provincial Exhibition at London every third year, and call "the attention of Township Societies to the importance of sending in more full reports than they have been in the habit of doing; a mere compliance with the law is not all that is desirable, their reports ought to contain more information on the progress of agriculture in their locality,—not, as some Societies have sent, a duplicate of proceedings of all their meetings, but information that might be useful, and interesting." This County did not avail itself of the provisions of the Act 20 Vic., cap. 32, entitling it to organize Electoral Division Societies for East and West Middlesex, and for the City of London.

President, 1858, J. B. Askin, London.

Secretary, J. G. Horne, London.

TOWNSHIP BRANCHES.

ADELAIDE.—Twenty members; amount of subscription, $40; share of Government grant, $25.21; donation from Messrs. Elliott and Burgess, a plough, value $30; fees at ploughing match, $8; receipts from use and sale of bull, $31.50; total receipts, $134.71; amount paid for keeping bull, $76.10; paid for ram, $8; paid prizes at ploughing match, including the plough presented to the Society, $38; incidental expenses, $11.51; balance in hand, $1.10.

CARRADOC.—A new Society, organized under the Act 20 Vic, cap. 32, in January, 1858.

DELAWARE.—Fifty-seven members; amount of subscriptions, $58; Government grant, $26.58; total received, $84.58; paid Treasurer balance from 1856, $4.32; paid in premiums, $65.50; expenses, $35.70; balance due Treasurer, $18.94.

Extract from Report.

It must be very evident to every one, that the organization of Agricultural Societies is of an immense benefit to any country, and particularly to such a one as this, if they will notice the improved system of cultivation, also the great improvement in the breeds of cattle and sheep within the last few years in this township, caused, we may say, solely through the organization of this Society, it having the effect of producing in the breast of every farmer that honorable spirit of rivalry, that desire, in a friendly spirit, to excel his neighbour. A few years ago it was considered high farming to have a quarter of an acre of turnips, and even very few had so large a space allotted to that root crop; but now every farmer has his acre and some two or three acres of turnips—consequently they are enabled to keep through our long winters an increased quantity of stock, and of a much superior quality. It is indeed exceedingly gratifying to us, as officers of this Society, to be enabled to state these facts. It was considered a good crop of turnips a few years ago if 500 bushels were taken off an acre, and this season it has been ascertained beyond a doubt that in a number of instances from 800 to 1200 bushels have been pitted from the same quantity of land.

The wheat crop in this section of the country was much below an average, and generally of a very inferior quality, owing doubtless to the severity of the winter and the wet, cold, and backward spring, and the effects of the wheat midge. The oat, barley, and pea crops, were, as far as we could ascertain, much above the average; but the turnip crop, from all the information we could glean on the subject, and particularly from the statements made by the Judges appointed to award the prizes by the Society, far exceeded in weight that of any former years. The potatoe crop was, on the whole, a very miserable one, as, owing to the wet season, more than one half of the crop was diseased. The few crops of mangold wurzel which were grown in this section, were very good. There appears to be little attention given as yet to the cultivation of this most excellent and serviceable root; but as our system of cultivation is improving so rapidly, we have reason to believe that every farmer will soon consider a mangold wurzel crop as necessary to the support of his stock as a crop of turnips, and indeed our own idea of the subject is, it is far superior to the turnip for milch cows and sheep at any time.

There is yet one subject to which we would particularly draw your attention, the importance of which we are assured no one will or can question, that is the absolute necessity of, as far as practicable, a thorough drainage of the soil, either by wood pipes or open drains. It is well known by every person here, that nature has been particularly favourable to this township, by intersecting it at all points with so many natural drains, as the numerous creeks and the River Thames which bounds it, nevertheless there is an immense portion of the township which absolutely requires a deep and thorough drainage. Certainly the high price of labour is a serious drawback to a great many, still, it must be patent to all, that if by draining the soil thoroughly a crop can be produced which will be sufficient to defray the expenses of cultivation, it must be perfectly suicidal to persist in cultivating the soil from year to year at an actual loss without it, as land so saturated with water will neither produce quantity or quality of grain, and is also a certain harbour for all kinds of noxious weeds.

North Dorchester.—Eighty-members; amount of subscriptions, $110.50; balance from 1856, $113.01; Government grant, $60.57; prize refunded, $4.50; total receipts, $288.58; amount paid in premiums, $169; paid for fencing show ground, $60; general expenses, $29.63; balance in Treasurer's hands, $29.96.

LOBO.—Eighty-three members; subscription, $84; balance on hand from 1856, $101.30; share of grant, $52·97; received for rams sold, $14.50; total receipts, $252.77; amount paid for keeping bull, $36; paid in premiums, $66.27; various amounts paid per order, service not stated, $123.96; balance in hand, $13.27.

LONDON.—One hundred members; subscription, $111.50; balance from 1856, $70.87; share of Government grant, $70 90; total received, $253.27; amount paid in premiums, $181; expenses, $18; balance in Treasurer's hands, $54.27.

METCALFE.—One hundred and forty-one members; amount of subscription, $168.75; Government grant, $86.05; balance from 1856, $18.30; received from sale of boar and sundries, $11.88; total receipts, $314.98; amount paid for keeping bull and other animals owned by Society, $191.12; other expenses, $44.40; balance on hand, $79.45.

MOSA.—Sixty-four members; subscription $64; balance from 1856, $70.06; Government grant, $31.50; total receipts, $165.56; amount paid in prizes, $101.50; expenses, $19.87; balance in hand, $44.19.

WEST NISSOURI.—One hundred and thirteen members; subscription, $114; Government grant, $67.31; amount paid for three ram lambs, $30; paid in premiums, $103; expenses, $27. The financial statement is incomplete.

WESTMINSTER.—One hundred and fourteen members; subscription, $136; balance from 1856, $2.75; Government grant, $83.71; total received, $222.46; amount paid in premiums at shows and ploughing match, $179; expenses, $26.37; balance in hand, $17.08.

WILLIAMS.—Fifty-five members; subscription, $60; balance from 1856, 37 cents; Government grant, 35.80; total receipts, $96.18; amount paid in premiums, $57.20; expenses $22.80; balance in hand, $16.18.

NORTHUMBERLAND.

COUNTY SOCIETY.—Sixty-two members; subscription, $62; balance from 1856, $23.46; deposited by township branches, $571; Government grant, $540; total receipts, $1196.46; amount paid township branches, $894.90; paid in premiums, $237; expenses, $64.56. Electoral Division Societies were organized in January, 1858, for the East and West Ridings.

EAST RIDING SOCIETY.—*Secretary*, Alfred T. Wright, Brighton.

WEST RIDING SOCIETY.—*President*, A. A. Burnham, Cobourg; *Secretary*, Charles Bourn, Cobourg.

TOWNSHIP BRANCHES.

BRIGHTON.—One hundred and seven members; subscription, $108; balance, from 1856, $85.44; government grant, $58.02; received from clover and other seed, $90.05; sundries, $2; total received, $343.53. Amount paid for seeds, $104.35; paid in premiums, $106.75; expenses, $31.20; balance in hand, $101.23.

CRAMAHE.—Eighty four members; subscription, $85.50; government grant, 47.67. Amount paid in premiums, $105.25. The report is incomplete.

HALDIMAND.—Seventy-seven members; amount of subscription, $107,50; government grant, $28.37; total received, $135.87. Amount paid Treasurer, balance due him, $30.78; paid in premiums, $110.85; expenses, $4.75; balance due treasurer, $10.52.

HAMILTON.—One hundred and ninety members; amount of subscription, $190; balance from 1856, $17.50; government grant, $101.57; total received, $309.07. Amount paid for premiums on Agricultural Stallion, $100; premiums at Fall Show, $140,50; expenses, $11.90; balance in hand, $56.67. The directors report that with the view of improvfng the breed in the township of the horse of all work, which had been generally admitted for some time to be deficient in essential points, they had offered the prize of $100 to be awarded to the best stallion in competition at the spring show, on condition of serving in the township. The prize was awarded to Mr. J. R. Ramor, of Markham, for his horse "Young Rainbow Rockingham," and the arrangement had so far been satisfactory.

MURRAY.—Fifty members; subscription, $54.96; government grant, $28.37; total received, $83.33. Paid in premiums, $79.33; expenses $4.00. The directors report that the wheat crop had suffered the preceding season from unfavorable weather and the midge. They also report with much satisfaction that the cultivation of root crops is evidently increasing.

PERCY.—A new society, organized in January, 1858.

SEYMOUR.—Sixty-seven members; subscription, $67; government grant, $32.90; total receipts, $99.90. Paid in premiums, $56.50; *Agriculturist*, $30; expenses; $5.90; balance in hand, $7.50

ALNWICK.—Amount deposited, $46; government grant, $26. No further report.

NORFOLK.

COUNTY SOCIETY.—Eighty-two members; subscriptions paid, $88; balance from 1856, $333.48; deposited by township branches, $484; Government grant, $900; total receipts, $1706.48; amount paid township branches, $1116; paid for *Agriculturist*, $6; paid contribution to Provincial Association for Exhibition of 1857 at Brantford, $200; expenses, $248.10; balance in hand, $136.38.

President, Daniel Matthews.

Secretary, D. W. Freeman, Simcoe.

Extract from Report.

In consequence of the Provincial Exhibition being held near this county, it was thought best to dispense with our annual agricultural show, and appropriate a portion of the Society's funds to the purchase of improved breeds of live stock. The proposition was acted upon in the most liberal spirit, by allowing the smaller societies to participate equally with the larger ones in the apportionment of the funds.

Your Board beg leave to assign a few reasons which induced them to make the disposition of the funds to which they have alluded. In the first place the animals brought to our show ground from year to year, were, to a great extent, the same, which induced the belief that there was not that energy and laudable emulation, among the farmers generally, which your Board felt to be desirable. Wishing to remedy the evil, they concluded the most efficient way to do so was to encourage the introduction of new and approved breeds of stock, rather than the re-exhibition of animals of doubtful character and ordinary appearance; knowing also that a diversity of opinion existed as to the comparative merits of the different breeds of animals, they concluded that this would be the means of bringing into our county many good animals, which would enable breeders to test their merits and adaptedness to our climate.

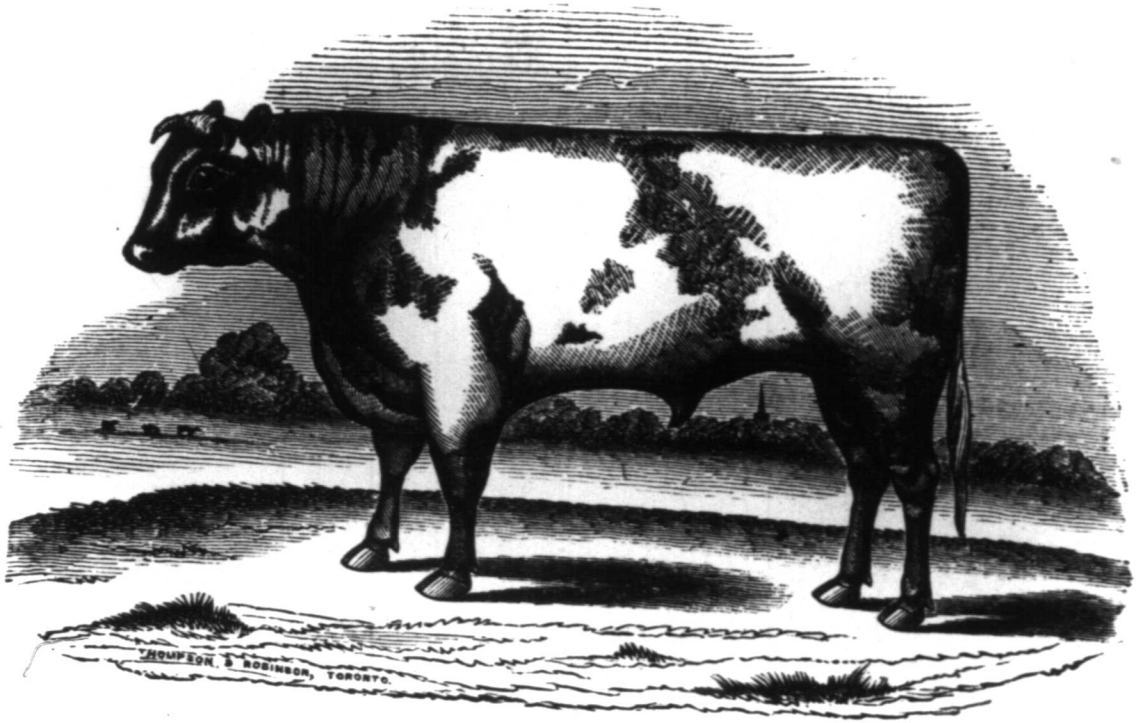
Your Board deem it fitting to say a word or two in reference to the Provincial Agricultural Association. They feel that to the success which has attended that Association we are mainly to attribute the introduction of so large a number of the most valuable stock, the vast improvement in implements of husbandry, the adoption of the more approved systems of tillage, and of domestic manufactures and domestic economy; and we also feel that our thanks are due to those gentlemen whose energy and zeal so well sustain that institution, and to our Government for the liberal grant annually set apart for the encouragement of agriculture, arts and science, and for the endowment of a Professorship of Agriculture.

The education of our young men who are designed for the profession of agriculture, is a subject which your Board would commend to your careful consideration; let them be educated generally,—let them also be specially educated for the occupation in which they are to engage. Then, and not till then, will agriculturists assume that useful and enviable position in society to which their pursuits entitle them, our rural districts be filled with men of intelligence, successful in their profession, amply qualified to represent our interests in our local institutions, and if need be, in the halls of Legislature. Should the next generation of farmers be thoroughly educated in the science and practice of agriculture, we can scarcely estimate the vast good that would result therefrom. From a careful analysis of the soil, they would be enabled to supply the elements which were wanting, and at all times know what kind of fertilizers were required and in what proportion. The science and practice of agriculture would be combined, and men would learn that intelligence and labour are not incompatible; an impetus would be given to all the industrial pursuits, and we should see more rapid strides in our progress than has ever yet been witnessed. To accomplish this desirable object, the Officers and Directors would most respectfully suggest, that the rudiments of agriculture should be taught in all our Common Schools, the same as the rudiments of arithmetic, geography, and grammar; and to carry out this important object, all our Common School teachers should be required by statute to be qualified to teach this department as well as the other departments of English education. Then our sons would be amply qualified to avail themselves of the greater advantages to be attained at University College, in which there is an Agricultural Professorship, in connection with an experimental farm.

TOWNSHIP BRANCHES.

CHARLOTTEVILLE.—Eighty-six members; subscriptions paid, $61; balance from 1856, $32.08; received on account of horse, $100; share of public grant, $175.50; total received, $368.58; paid in prices at ploughing match, $20; expenses, $1.25; balance in hand, $347.33.

TOWNSEND.—One hundred and twenty members; subscriptions, $123; bal-



"BRIDEGROOM," 456, U. C. S. R.

Winner of the First Prize as a two year old Durham Bull, at the Provincial Exhibition, Toronto, 1858. The property of John Thompson, Whitby.

Roan, calved July 2d, 1856, bred by Mr. James Douglass, Athelstaneford, Scotland; got by Hymen (13058), dam (Lily) by FitzLeonard (7010), g. d. (Quartz) by Granite (7047),—(Beauty) by White Bull (5643),—(Young Broadhooks) by Young Ladykirk (4170),—by Albion (731),—by Sirius (598),—by Wellington (679),—by Sultan (631),—by Signior (588). *See page* 177.

ance from 1856, $24.28; share of public grant, $201; total receipts, $348.28; amount paid on account of money borrowed, $80; paid for keeping horse and other expenses, $32.42; paid for a Durham Bull, $231.48; balance in hand, $4.38.

WALSINGHAM.—Amount of subscription, $44; share of grant, $141.75; total receipts, $185.75; amount paid for three Leicester rams, $100; paid on account of two bulls, $85; balance on hand, 75c. The Society reports being still in debt $100 on the stock purchased.

WINDHAM.—Forty-five members; subscription, $50.25; Government grant, $33.75; total received, $84; amount paid in prizes, $66; balance in hand, $18. The Society was still to receive the $111 appropriated by the County Society to each township, in additions to the usual apportionment of the Government grant, for the purchase of stock.

WOODHOUSE.—Seventy-nine members; subscription, $92; share of Government grant, $180; received on account of sheep and horse sold, $70; total received, $342; amount paid for keeping bull, $20; paid in prizes at ploughing match, $20; paid for rams, $80; expenses, $1.25; balance in hand, $211.25.

ONTARIO.

COUNTY SOCIETY.—One hundred and eighty-nine members; amount of subscription, $193; balance from 1856, $221.58; deposited by township branches, $744; Government grant, $900; special subscriptions and admission fees to Floral Hall at Exhibition, $160.45; total receipts, $2219.03. Amount paid township branches, $1284; paid in premiums at exhibition, $496.50; premiums at ploughing match, $72; expenses, $157.50; balance in hand, $209.03. The Directors report that six individual members of the society had, within the preceeding year, imported stock from Great Britain to the following named amount —two horses, three Durham bulls, three Durham heifers, twelve Leicester rams, eighteen Leicester ewes, four Cotswold rams, four Cotswold ewes, two Southdown rams, four Southdown ewes.

Electoral division societies were organized in January 1858, for the North and South Ridings.

NORTH RIDING.—*Treasurer*, Wm. Boynton, jr., Reach.

SOUTH RIDING—*President*, Ebenezer Birrell, Greenwood; *Secretary*, John Shier, Whitby.

TOWNSHIP BRANCHES.

BROCK.—Fifty-two members; subscription, $52; share of public grant, $36; total receipts, $88. Amount paid in premiums, $92.91; expenses, &c., $15.09.

PICKERING.—One hundred and eighty-seven members; subscription, $231; balance from 1856, $185.58; Government grant, $154.60; receipts at Floral Hall at Fall Show, $61; total received, $632.18. Amount paid in premiums at Spring and Fall Show, and ploughing match, $444.75; expenses, $38.05; balance in hand, $149.38.

REACH AND SCUGOG.—One hundred and seventy-seven members; amount of subscriptions and entries, $214.87; Government grant, $128.47; total received, $345.24. Amount paid balance due Treasurer from 1856, $25.99; paid premiums at Fairs and ploughing match, $210.50; sundries, $60.52; balance in hand, $48.32.

WHITBY.—Two hundred and sixty-six members; subscription, $270; balance in hand from 1856, $104.11; Government grant, $191.60; interest on money invested, $4; total received, $582.81. Amount paid in premiums at Fairs, $393.50; expenses, $50.88; balance in Treasurer's hands, $138.42.

EAST WHITBY.—A Society was organized under this name in January 1858, forty-one members signing the declaration.

OXFORD.

COUNTY SOCIETY.—Two hundred and thirty-five members; amount of subscription, $266; balance from 1856, $474.26; deposited by township branches, $886.50; Government grant, $900; received on account of stallion "John Long" sold, $400; received on account of bull, $82; received for services of stallion owned by Society, $370; total received, $3378.76. Paid for copies of *Agriculturist*, $48.75; paid township branches, $1426.50; paid premiums at Shows and ploughing match, $618.50; paid for keep and attendance of horse, 220.87; expenses and sundries, $326.59; balance in Treasurer's hands, $737.54.

Electoral Division Societies have been organized for each of the Ridings, North and South. Mr. James Scarff, Woodstock, Secretary of both societies.

TOWNSHIP BRANCHES.

BLENHEIM.—Two hundred and fifty-three members; subscription, $254.25; balance from 1856, $164.74; Government grant, $75.53; received at door during show, $26.37; total received, $520.89. Amount paid in prizes, $281.75; expenses, &c., $38.94; balance in hand, $200.20.

Extract from Report.

"The Directors feel assured that the improving prospects in all our productions are a source of much congratulation, and will venture to assert that no township in this highly favored province exhibits a more rapid and durable improvement than Blenheim; as in nearly every section the farms are assuming a neater and better cultivated appearance. The original log buildings have almost entirely vanished, and superior buildings of stone and brick are annually taking their place."

DEREHAM.—Sixty-one members; subscription, $116; Government grant, $60.92; sundries, $10.54; total received, $187.46. Amount paid in prizes, $166.25; balance in hand, $21.21.

Extract from Report.

The rivalry created by our exhibition is producing a most pleasing and salutary effect, as indicated by the improved appearance of farms and farm buildings, the beauty and excellency of breed in stock, whether of cattle, sheep, horses, or pigs. Your directors feel it their duty to call your attention to the fact, that

there is a tendency to over-cropping, especially in the article of wheat, and would recommend a more careful attention to the proper rotation of crops, the study of the nature and properties of the soil, and its adaptation to the different kinds of produce; and we would recommend a further and more extensive cultivation of root crops—a more careful breeding of improved stock, and a greater attention to the dairying business, as a guard against too severe a loss in case of failure of the wheat crop, which now seems inevitable, unless some means to arrest the ravages of the wheat destroyers be devised.

INGERSOLL.—One hundred members; subscription, $112; balance from 1856, $164.40; Government grant, $60.92; received on account of stock sold, $86; total received, $423.32. Amount paid in premiums, $171.66; paid for keeping stock, $187.91; expenses, $63.75.

EAST NISSOURI.—Sixty-nine members; subscription, $123.50; Government grant, $56.03; total received, $179.53. Amount paid in premiums, $110; expenses, $37.82; balance in hand, $31.71.

NORWICH.—One hundred and eight members; subscription, $137.87; balance from 1856, $4.70; Government grant, $54.82; total received, $197.39. Amount paid in prizes, $145.50; paid for *Agriculturist*, $14; expenses, $32.55; balance in Treasurer's hands, $5.34.

EAST OXFORD.—Sixty-four members; subscription, $86; balance from 1856, $83.62; Government grant, $49.65; total received, $219.27. Paid for copies of *Agriculturist*, $25; premiums, $108; expenses, $24.25.

WEST ZORRA.—One hundred and thirty-seven members; subscription, $143.50; balance from 1856, $17.08; Government grant, $83.43; total received, $244.02. Paid in premiums, $167; expenses, $23.51; balance in hand, $53.51.

PEEL.

COUNTY SOCIETY.—One Hundred and fifty-eight members; amount of subscription, $217; deposited by township branches, $516; Government grant, $540; grant from County Council, $120; admission fees at show, $49.40; total received, $1442.40. Paid balance due Treasurer from 1856, $2.63; paid township branches, $839.95; paid in premiums, $417.50; paid for *Agriculturist*, $37.77; expenses, $174.82; balance due Treasurer, $30.27.

President, John Tilt, Derry West.

Secretary and Treasurer, John Lynch, Brampton.

TOWNSHIP BRANCHES.

ALBION.—Seventy-seven members; subscription, $88; balance from 1856, $11.93; share of public grant, $52.74; total received, $152.67. Amount paid in premiums, $135; expenses, $12.90; balance in hand, $4.77.

CALEDON.—Amount of subscription, $69.12; balance from 1856, $33.58; public grant, $38.30; total received, $141,01. Paid in premiums, $104.50; expenses, $15.45; balance in hand, $21.06.

CHINGUACOUSY.—Seventy-nine members; subscription, $101.50; Government grant, $63.40; total received, $164.90. Paid balance due Treasurer from 1856, $15; paid premiums, $136.90; expenses, $13; balance due Treasurer, $31.10.

GORE OF TORONTO.—One hundred and sixty-seven members; subscription, $183.50; balance from 1856, $36.03; Government grant, $101.72; total received, $321.25. Paid in premiums, $272.50; expenses, $23.82; balance in hands of Treasurer, $24.93.

TORONTO.—One hundred and twenty-three members; subscriptions, $260; Government grant, $67.80; donations for special prizes, $25; total received, $352.80. Paid in prizes, $281.50; expenses, $53.31; balance in hand, $17.99.

PERTH.

COUNTY SOCIETY.—One hundred and twenty-three members; subscription, $2.05; deposited by townships, $378; Government grant, $860; cash borrowed, $100; received for bull sold, $120; grant from Stratford Municipality, $40, total received, $1703. Amount paid, balance from previous year, $1.40; keep of bull, $72.78; paid township branches, $869.97; *Agriculturist*, $51; paid loan, &c., $182.08; paid in premiums, $188.50; expenses, including fixtures for shows, officers' salaries, printing, &c., $340.27; balance due Treasurer, $3.

Secretary—Stewart Campbell, Stratford.

TOWNSHIP BRANCHES.

BLANSHARD.—One hundred and forty members; subscription, $142.50; grant from Blanshard and St. Mary's Municipalities, $32; Government grant, $205.75; received for bull sold, $170; total receipts, $550.25. Amount paid in premiums, $270.96; *Agriculturist*, $130.62; keeping bull, $24.50; expenses, $61.52; balance in hand, $62.65.

FULLARTON, LOGAN AND HIBBERT.—One hundred and twenty-four members; subscriptions, $208.50; balance in hand from 1856, $30.80; received on account of bull sold, $43; grant from County, $28.83; share of Government grant, $234.25; total received, $545.38. Amount paid for fence, gates, pens, &c., to show ground, $243.87; premiums, $224.25; *Agriculturist*, $40; general expenses, $93.60; balance due Treasurer, $56.33.

WALLACE AND ELMA.—Amount of subscription, $42; Government grant, $52.10; total received, $94.10. Paid in premiums, $55.82; expenses, $6.60; balance in hand, $31.68.

PETERBOROUGH.

COUNTY SOCIETY.—Eighty-one members; subscription, $86.25; balance from 1856, $55.13; deposited by township branches, $419.75; Government grant, $540; received for 86 barrels plaster sold to members, $119; received for seeds sold, $307.71; total receipts, $1527.84. Amount paid for 100 barrels plaster, $140; paid for 40 bushels clover seed and expenses on do., $332.17

paid for 100 lbs. Swedish turnip seed, $50; paid township branches, $689.05; paid in premiums, $211; other general expenses, $73.23; balance in Treasurer's hands, $32.39.

Secretary—J. W. Gilmour, Peterboro'.

Extract from Report.

The past has been a year peculiarly suggestive to the reflective mind, from its singularity, meteorologically, zoologically, and commercially.

The latter part of the winter being mild, the snow disappeared earlier than usual, leaving the ground exposed to the alternate freezing and thawing of winter. A cold wet spring was followed by a very moist, chilling summer, cold autumn, succeeded thus far by a mild winter. The effect of such a season upon the crops can easily be inferred. Fall wheat has suffered much from the want of its valuable protector, the snow, during the latter part of the winter, when very cold nights are succeeded by warm sunny days. This, together with cold blighting winds, has done much harm to the plant. Potatoes have been very extensively attacked by the rot; in some fields scarce a tuber was left; others fared somewhat better, while in a few instances, and those confined specially to high dry land, some good crops of sound potatoes have been gathered. The general prevalence of this disease may be safely attributed in a great measure to the wet season. Turnips have also been attacked by rot, though not by any means so general or destructive as the potato rot, yet it has been sufficient very materially to lessen the amount of produce. From the manner in which the disease commenced and progressed, it would appear that the heat of the sun was not sufficient to carry off the excessive moisture which fell during the past summer; the turnip became too gross and cracked at the neck; the frequent rains falling entered these cracks, causing decay, which would go on increasing until the whole inside of the tuber was rotten, leaving the outside rind apparently sound. During the past season the injury to the wheat, from the weevil, has been unprecedented. Its attacks were principally confined to late fall wheat, and early spring wheat. This appears the season when it is most numerous and active. Early fall wheat and the Scotch variety of spring wheat being late and after the fly season, suffered but little. Every one can draw a just inference from this, and it becomes the farmer to sow accordingly. All physiologists agree that a healthy animal or vegetable is better able to resist the attacks of its enemies than a deseased or weakly subject. We may therefore justly conclude that all means should be used by the farmer to get a vigorous plant, by proper tillage, seasonable sowing, and judicious cultivation. It may be that late fall wheat is more injured by this little depredator because of its being less vigorous and healthy in its growth than timely sown wheat. The same might apply to the early spring wheat this year; the cold wet season, together with the seed being often sown in soil unsuited for its reception, might give an unhealthy habit to the plant, which it would retain to maturity, thus making it an easier prey to its enemy. Every one should make such observations, as lie in his way, upon this insect, and endeavour, if possible, to discover something that would, if not remove the scourge, at least mitigate its effects. The average produce of spring and fall wheat for this year has diminished from one-half to one-third less than the preceding year. This may be attributed to the moist season and the ravages of the weevil. How remarkable, that the silent and unseen working of this insignificant insect can make a community tremble, and spread consternation and dismay throughout the land. Man may plow, and reap, and sow, but the increase must be of God. What great results follow combined effort, however insignificant in itself.

This season has been commercially singular. It has been particularly marked for great financial distress, extending throughout the world. This depression has reduced the price of produce to a comparatively low rate. The price of produce fallen comparatively low, and crops below the average, are reverses which the farmer is called upon this year to withstand. Though these difficulties have overtaken him, let not the farmer relax his efforts to advance his profession, and improve his condition in every way compatible with his means. From this general depression all may see the dependance of one class of the community upon another. The farmer, in particular, should see that his prosperity depends in a great measure upon that of the rest of the community. If one member suffers all suffer. Whatever will legitimately advance the interests of one class, must eventually, more or less, benefit all. It is therefore the duty of all to encourage and assist, so far as practicable, every improvement made, whether directly or indirectly benefitting their particular avocations. Let us also remember that we are happily located in a land whose resources are such as will enable us soon to surmount these difficulties, and bound forward in the march of improvement with accelerated speed and renewed vigor.

TOWNSHIP BRANCHES.

ASPHODEL AND BELMONT.—Amount deposited with County Society, $65; Government grant, $41.03. No further report of proceedings for the year 1857.

DUMMER AND DOURO.—Amount of subscription, $153.75; received from sale of 191 bbls. of plaster, $191; Government grant, $98.43; total receipts, $443.18. Amount paid Treasurer, balance from 1854, $172.75; paid for 25½ bush. clover seed, and expenses on do., $233.95; paid interest on money borrowed, $21.16; expenses, $21.17; balance due Treasurer, $5.85.

OTONABEE.—Amount of subscriptions, $123.95; received for clover seed sold, $497.60; received for turnip seed, $88.51; Government grant, $76.95; totel received, $787.01. Amount paid Treasurer, balance due from 1856, $65.04; paid for 85 bushels clover seed, $704; paid for turnip seed, $63; Copies of *Agriculturist*, $31; expenses, $67.91; balance due Treasurer, $143.94.

Extract from Report.

The Directors have to report considerable improvements in draining, stone fences, and buildings, and we are deriving benefit from the stock previously imported. The Chinese potatoes left in the ground last winter perished, although covered with litter, and those replanted this spring never grew; several small patches of the Sorghum or Chinese Sugar Cane were planted by members, but in consequence of the wet summer they did not come to maturity, growing to the height of from 5 to 10 feet, but never blossomed, with one or two exceptions.

SMITH, HARVEY, AND ENNISMORE.—Ninety-five members; subscription, $95; balance in hand from 1856, $16.34; Government grant, $56.43; received from sale of plaster, $635.60; from sale of turnip seed, $24.32; proceeds of a promissory note, $100; received from sale of clover seed, $144.23; total receipts, $1071.92. Amount paid, notes and interest, $606.65; paid for clover seed, 278.25; paid in premiums, $73.50; expenses, $71.01; balance on hand, $42.51.

PRESCOTT.

COUNTY SOCIETY.—Fifty-one members; subscription, $51; deposited by Township branches, $200; Government grant, $540; total received, $791.—Amount paid Treasurer, balance from 1856, $32.17; paid Township branches, $524; premiums, 208; expenses, $33.97; balance due Treasurer, $7.13.

President, Charles Hersey, Hawkesbury.

Secretary, S. M. Cushman, L'Orignal.

TOWNSHIP BRANCHES.

CALEDONIA.—No statement of receipts given. Paid in premiums, $93; expenses, $14.20.

HAWKESBURY.—Thirty-three members; subscription, $129; balance from 1856, $1.20; Government grant, $129.60; total received, $257.80. Paid to County Society, $26; premiums, $196; expenses, $36; balance in hand, $1.80.

PRINCE EDWARD.

COUNTY SOCIETY.—One hundred and two members; subscription, $103; balance from 1856, $46.75; deposited by townships, $348; Government grant, $900; admission fees, $53.20; total received, 1448.70; paid Township branches, $886.63; paid for *Agriculturist*, $35; paid instalment on Hall, $103; paid for repairing Hall, putting up pens, &c., $51.72; paid in premiums, $289.75; general expenses, $71.98; balance in Treasurer's hands, $10.62.

Secretary and *Treasurer*, Thomas Donelly, Picton.

TOWNSHIP BRANCHES.

AMELIASBURGH.—Eighty members; subscription, $80; balance in hand from 1856, $4,77; Governmental grant, $123.82; total received, $208.59.—Amount paid premiums, $171.36; expenses, $7.70; balance in hand, $29.53.

ATHOL.—Fifty members; subscription, $50; Government grant, $77.10; total receipts, $127.10. Paid in premiums, $113.40; expenses, $6,75; balance in Treasurer's hands, $3.45.

HALLOWELL.—Seventy members; subscription, $70; balance on hand from 1856, $20.46; Government grant, $108.35; total receipts, $198.81. Amount paid in premiums, $171.47; expenses, $16.81; balance in Treasurer's hands, $10 53.

MARYSBURGH.—Forty members; subscription, $40; Government grant, $61.92; total received, $101.92. Paid in premiums, $85; expenses, $8.50; balance in hand, $8.42.

SOPHIASBURGH.—Seventy members; subscription, $71; balance from 1856, 40c.; Government grant, 97.50; total received, $168.90. Paid in premiums, $133.55; expenses, $10.75; balance in Treasurer's hands, $24.60.

RENFREW.

COUNTY SOCIETY.—Ninety-six members; amount of subscription, $147; balance from 1856, $193.88; deposited by township branches, $114.50; Gov-

ernment grant, $540; received from sale of clover seed, $67.75; total receipts, $1063.13. Paid for clover and other seeds, $67.55; paid township branches, $221.50; paid judges of crops, $48; paid premiums, $562.80; general expenses, 149.25; balance in Treasurer's hands, $14.03.

President—Archibald Patterson, Admaston.

Secretary—George Ross, Renfrew Village.

Extract from Report.

The County of Renfrew at the present time bears every indication of the advantages derived from this Society, and it is a matter of congratulation that improvements of every description connected with agriculture, are observable throughout the County. The great object for which the government patronage has been extended, has been realised in the keen rivalry to surpass each other, which is a marked feature among the farmers of the county, and in the cultivation of farms, improvement of stock, introduction of superior agricultural implements, &c., there is a decided improvement. In regard to the stock of cattle, the Directors are of opinion that although superior as a native stock, an infusion of foreign blood is required, and as the farmers in the County are, in most cases, persons of limited means, the introduction of fresh stock is a matter of rare occurrence; however, to judge from the progress made by the farmers generally, since the establishment of this society, this deficiency, at an early period, will be remedied, as an anxiety for improvement in all the branches of agriculture, appears to animate those who, a few years ago, were most indifferent to the success of agricultural pursuits.

Since our last annual report, Branch Societies have been established in the Township of Westmeath, and another by the junction of the Townships of Ross and Bromley, and from which we hope to receive a favorable report at a future time, and they have all the natural advantages of good soil and an industrious population.

In reference to the crops, it may be said that an abundant harvest crowned the husbandman's toil, notwithstanding the late spring and cold rains.

The following may be taken as a fair statement of the crops generally:—

Fall Wheat—About one-fourth less than an average.

Spring Wheat—A fair average crop.

Oats—Over an average crop.

Peas—Fully one-fourth more than an average crop.

Corn—Half an average crop.

Potatoes—A fair crop.

Barley—A fair crop.

The Judges for growing crops during their tour of inspection, could not detect any appearance of either fly or rust; in fact, it may be observed that the County of Renfrew is particularly free from the ravages of the Hessian fly and the weevil, which are so destructive in other parts of the Province. The Judges also reported that farms generally were greatly improved in culture, fencing and buildings.

The Annual Exhibition of Live Stock, Manufactures, &c., was held at the Village of Renfrew in the month of October last. The weather was favorable, the concourse of people double that of any former exhibition, and the display of horses, cattle, agricultural products, manufactures, &c., very extensive and highly creditable to the County. The number of entries for the season was 882. The number of entries for discretionary premiums however, was so great that the Directors were obliged to throw them out from want of funds, although many of them were worthy of a premium, especially in the Ladies' Department.

TOWNSHIP BRANCHES.

BROMLEY AND ROSS.—A new Society, established in 1857; forty-eight members; subscription, $48. The deposit with the County Society not having been made till August, was returned without any apportionment of the public grant. No further report.

MCNAB.—Forty-two members; subscription, $66.50; balance from 1856, $110.35; Government grant, $123.13; total receipts, $299.98. Paid in premiums, $125.75; deposited with County Society, $66.50; paid for *Agriculturist*, $21; expenses, $28.92; balance in hand, $57.82.

RUSSELL.

COUNTY SOCIETY.—Fifty-two members; subscription, $212; balance from 1856, $74.90; Government grant, $540; total receipts, $826.90. Paid for Agricultural papers, $12; paid in premiums on field crops and at Show, $626.50; expenses, $105.25; balance in Treasurer's hands, $83.15.

President—Archibald Petrie, Esq., Cumberland.

No township societies reported.

Extract from Report.

The Directors are glad they have it in their power to report that the Society is making steady and onward progress, particularly in stock. The horses and horned cattle at last exhibition shewing a decided improvement on former years, and it is hoped the high price in cattle will lead to still further exertions to improve this description of stock.

The Inspectors of crops do not report favorably on the grain crops of the last season. A great deal of the winter wheat was killed by the spring frosts, and on the whole the spring crops will be light. Potatoes, though not a heavy yield, are mostly free from disease, yet in some localities they have suffered somewhat. Oats are scarcely an average crop, and corn generally light. The crop of grass will be an average of former years, and has been got in in good condition. Root crops have not been so much cultivated hitherto as they should have been; the yield in the present year has been good.

SIMCOE.

COUNTY SOCIETY.—Amount of subscription, $64; deposited by townships, $850.39; Government grant, $900; received from bank, $196.93; total receipts, $2011.32. Paid balance due Taeasurer from 1856, $107.55; paid to township branches, $1390.32; paid premiums, $239.20; paid bank, $200; expenses, $145.53; total expenditure, $2082.60; balance due Treasurer, $145.53. Electoral Division Societies have been organised under the Act 20 Vic. cap. 32, for the North and South Ridings.

NORTH RIDING.—*Secretary*—Joseph Thomas, Barrie.

SOUTH RIDING.—*Secretary*–David Thompson, Bradford.

Extract from Report.

Your Committee would congratulate you on the highly creditable show of live stock, &c., exhibited last October, and without enumerating every class of the exhibition in detail, it will be quite sufficient to state that the show was fully equal in appearance to any of its predecessors, and in some of the classes we

think superior, especially the sheep. But in order to raise a superior breed of cattle, there must be a proportionate quality of provender provided for them, and your Committee are much pleased to have it in their power to report that much more attention is paid to the raising of green crops at present than was the case formerly, and we are of opinion that until the system becomes general, the land, though naturally good, will decrease rather than increase in productiveness. It will be seen by referring to the Treasurer's balance sheet, that only twelve bushels of clover seed were purchased for the use of the several members of your society last year; but what is that quantity when distributed among so many? No doubt some farmers purchase from the storekeepers, but we heartily wish they could see that it would be to their advantage to act in concert, and purchase their seed in bulk from the wholesale merchant, and thereby procure the best article at the smallest price. The same may be said with reference to plaster, or any other fertilizer the farmer may require.

TOWNSHIP BRANCHES.

ESSA.—One hundred and six members; amount of subscription, $111.55; balance in hand from 1856, $92.53; Government grant, $86.80; total receipts, $290.88. Paid in prizes, $187.50; expenses, $22.13; balance in Treasurer's hands, $81.85.

WEST GWILLIMBURY.—One hundred and nineteen members; subscription, $122; balance from 1856, $1.17; Government grant, $72.87; total receipts, $196.3. Paid in prizes, $152; expenses, $29; balance in hand, $15.2.

INNISFIL.—One hundred and thirteen members; subscription, $120; balance from 1856, $61; Government grant, $74.35; total receipts, $255.55. Paid in prizes, $230.50; expenses, $25.06; total expenditure, $255.56.

MULMUR.—Thirty-two members; subscription, $45; total receipts, $107.08. Paid in premiums and expenses, $97.72; balance in hand, $9.32.

NOTTAWASAGA.—One hundred and eighteen members; subscription, $166.50; Government grant, $58.45; total received, $224.95. Paid in prizes, $122.50; expenses, $55.45; balance in hand, $47.

Extract from Report.

The Directors would congratulate the members of this Society on the great improvement made during the year to the several roads in this Towuship, thereby giving much encouragement to improve and increase the amount of produce and stock from the facility which is thereby afforded to convey the same to market; and they feel assured that no section of the Province could have shewn more rapid improvement than this Township; the farms and dwellings of the farmers assuming an elegant and much better appearance, and also the land is much better cultivated; they having in a great measure overcome the difficulties of a new settlement.

ORILLIA.—Amount of subscription and Goverament grant, $159.45; balance on hand from 1856, $105.99; total received, $265.44. Paid for seed wheat, $88; paid for keeping bull, $30.25; paid for copies of *Agriculturist*, $13; general expenses, $24.17; balance in Treasurer's hand, $110.02.

Extract from Report.

Since the first organization of the Society the objects most prominently in view with each successive body of Directors, appear to have been the diffusion

of agricultural knowledge, the improvement of stock, and procuring of fresh seeds. In accordance with these views each member subscribing 7s. 6d. has been furnished with a copy of the *Conadian Ariculturist*, free of charge. A Bull of an improved breed is kept at considerable expense, and fresh seeds are being procured. As regards the change af wheat for seed last year, wherever a fair chance has been given, the yield has been abundant, and the sample superior, so far as the Directors have been able to ascertain.

ORO.—Forty-six members; amount of subscription, $113.88; balance from 1856, $11.17; public grant, $52; total received, $177.25. Paid in premiums, $109.15; paid for clover seed, $24.50; *Agriculturist*, $20; expenses, $30.42; balance due Treasurer, $6.81.

Extract from Report.

We are much pleased to report that we consider the system in husbandry now generally adopted with us, superior to former years; the time was, and not long since, when clover and turnips were almost neglected, but now among the more thoughtful part of the farming community, the wheat and potatoes would as soon be forgotten for the family as the clover hay and Swedish turnips for the stock; the last mentioned crops are good with us this year. The result is, and we consider it no boasting to say, that our beef and mutton will compare favorably with any in the Province.

TECUMSETH.—Amount of subscription, $94.22½; balance from 1856, $24.18; Government grant, $59.82; total received, $178.17½. Paid in prizes, $142; expenses, $25; balance in Treasurer's hands, $11.17.

Extract from Report.

The Directors are glad to be able to say that the Annual Shows prove the stock of the Township to have greatly improved since the introduction of Agricultural Societies. The Show of the past year was strikingly illustrative of this fact, particularly in regard to horses. In this class there was great competition, and the stock of a very superior character.

VESPRA.—Twenty-six members; subscription, $99.50; balance from 1856, $32.17; Government grant, $46.72; total receipts, $178.48. Paid premiums, $124.75; paid for clover seed, $31.50; expenses, $33.55; balance due Treasurer, $11.32.

STORMONT.

COUNTY SOCIETY.—Amount of subscription, $72; amount deposited by township societies not stated; received from Cornwall Township Society to pay premiums at County Exhibitions, $511.63; Government grant, $540; total receipts stated, $1123.63. Paid in prizes at Show, $286.75; paid township societies apportionment of Government grant, $324; paid township society, due at last report, $429.88; expenses, $83.

President—Wm. D. Wood, Cornwall.

Secretary—John S. McDougall, Cornwall.

Treasurer—Martin McMartin, Cornwall.

TOWNSHIP BRANCHES.

CORNWALL.—Amount of subscriptions, $130; share of public grant, $192.32; balance from 1856, $560.58; total received, $882. Paid in prizes, on green

and root crops, $90; paid for clover seed, $25; *Agriculturist*, $10; expenses, $43.67; paid over to County Society, $511.63; balance in Treasurer's hands, $202 60.

FINCH.—A new Society, organized in January, 1858; sixty subscribers.

OSNABRUCK.—Amount of subscription, $88; balance in hand from 1856, $3.02; Government grant, $132.68; total received, $223.70. Paid in premiums, $191.47; expenses, $27; remaining in Treasurer's hands, $5.22.

VICTORIA.

COUNTY SOCIETY.—One hundred and eleven members; subscription, $111; balance from 1856, $398.30; deposited by township branches, $429; Government grant, $540; received for seeds, $81; total receipts, $1559.30. Paid for wheat, clover, carrot and other seeds, $325.89; paid township branches, $539; paid premiums, $70; general expenses, $32.50; balance in Treasurer's hands, $591.91.

President—John Gibb, Lindsay.

Secretary and Treasurer—A. A. McLauchlin, Mariposa.

Extract from Report.

As the President of the Bureau of Agriculture takes a deep interest in the settlement and opening up of the waste lands of the Government, we would bring under his notice the fact that a large tract of land fit for settlement lies to the rear of our County, unsurveyed and without roads. Many families have entered upon these lands, and we fear that much disappointment and perhaps litigation, may ensue, in consequence of the boundaries not being defined.

TOWNSHIP BRANCHES.

EMILY.—Amount deposited, $75; share of Government grant received, $55. No further report.

FENELON AND VERULAM.—Amount of subscription, $69; Government grant, $54; total received, $123. Amount paid for seeds and expenses, $123.

MARIPOSA.—One hundred and forty-four members; subscription, $144; balance in hand from 1856, $176,28; Government grant, $113,75; sundries, $4,61; total receipts, $438,64. Amount paid for clover and other seeds, $158.20; paid in premiums, $77.50; expenses, $32.23; balance in Treasurer's hands, $170.71.

OPS.—Amount deposited, $143. This society merged its funds for the year with those of the county society, for the purpose of holding a joint exhibition at Lindsay, in Ops, and makes no report of proceedings, or receipts and disbursements.

WATERLOO.

No reports have come to hand of proceedings of societies in this county, for the year 1857. The amount of subscription of county and township societies, named in affidavit, was $596; and the amount of Government grant forwarded from the Board, $900.

Electoral Division Societies were organized in January, 1858, under the new Act, for the North and South Ridings.

NORTH RIDING.—*President*, James Dow, Woolwich.

Secretary and Treasurer, D. S. Shoemaker, Berlin.

SOUTH RIDING.—*President*, James Cowan, Galt.

Secretary and Treasurer, W. A. Shearson, Galt.

WELLAND.

COUNTY SOCIETY.—Eighty members; amount of subscription, $94; balance from 1856, $348; amount deposited by townships not stated; Government grant, $900; total receipts stated, $997.48. Amount paid townships apportionment of public grant, $540; paid premiums, $215.50; expenses, $124.77; balance in hand, $117.21.

President, John Kerr, Stamford.

Secretary, John Rannie, Thorold.

TOWNSHIP BRANCHES.

BERTIE.—Forty-one members; subscription, $45; balance from 1856, $9.45; Government grant, $50.93; total received, 105.18. Paid in prizes, $102.25; expenses, $9.37; balance due Treasurer, $6.23.

CROWLAND.—Forty-seven members; amount of subscription, $54; Government grant, $59.28; total, $113.28. Paid in prizes, $87.44; expenses, $8.50; balance in Treasurer's hands, $17.34.

HUMBERSTONE.—Forty-nine members; subscription, $60.43; balance from 1856, $1.52; Government grant, $74.10; total received, $136.05. Paid in prizes, $99.25; expenses, $22.92; balance in hand, $13.87.

PELHAM.—Fifty-two members; subscription, $52; Government grant, $59.28; total, $112.06. Paid in premiums, $89; expenses, $15.49; balance in hand, $7.57.

STAMFORD.—Seventy-four members; subscription, $75; balance from 1856, $10.84; Government grant, $86.60; total receipls, $172.44. Paid in prizes, $113.50; expenses, $26.08; balance in Treasurer's hands, $32.86.

THOROLD.—Amount of subscription, $86; balance from 1856, $68.02; Government grant, $97.57; total receipts, $251.59. Paid in premiums, $165; expenses, $22.27; balance in Treasurer's hands, $64.32.

WAINFLEET.—Fifty members; subscription, $50; balance from 1856, $23.12; Government grant, $61.75; total receipts, $134.87. Paid in premiums, $100.13; expenses, $17.23; balance in Treasurer's hands, $17.51.

WILLOUGHBY.—Thirty-nine members; subscription, $40; Government grant, $49.40; total, $89.40. Paid in remiums, $75.25; expenses, $6.75; balance in hand, $7.40.

WELLINGTON.

COUNTY SOCIETY.—Two hundred and twenty-six members; subscription, $265; balance from 1856, $85.97; Government grant, $900; sundries, 95c.;

amount deposited by townships not stated; total receipts, $1241.92. Paid township branches, apportionment of Government grant, $538.12; paid in premiums, $414; expenses, $210.12; balance in hand, $89.68.

Electoral Division Societies have been organized for the North and South Ridings.

NORTH RIDING,—*President*, James Ross, Cumnock.

Secretary and Treasurer, John Beattie, Nichol.

SOUTH RIDING.—*Secretary and Treasurer*, James Wright, Guelph.

Extract from Report.

The Directors point with satisfaction to an increased subscription list, as well as an increase in the number of competitors; and also to the general interest evinced by the members in the success of the Society, and agricultural pursuits generally. The introduction and appreciation of labor-saving machines and improved implements of husbandry, give undeniable evidence of improvement in the management of the farm. The Directors are however of opinion, that with all the judicious arrangements and well directed and increased efforts of the farmers, that the money value of the surplus crop of 1857 will not realise one-third of the previous year, which may be attributed to the following causes, viz., the unfavorable season just past; the bad harvest, and low prices. It is however, gratifying to find that the quality of the grain has not been materially injured for milling; so that the well merited character of Upper Canada flour bids fair to be maintained in the foreign market. The fly has not appeared in this county with the same alarming symptoms observable in some parts of the Province, although in some localities its presence has been reported during the past two or three years. The stock of the county, long and favorably known throughout the Province, is likely to gain a more extended celebrity from the fact that several animals some of which were imported and others bred by F. W. Stone, Esq., were sold by him last September; some of which were purchased by eminent breeders from the neighboring states, and six of them were purchased by a gentleman to be taken to California. It also augurs well for the future of the county, that although Mr. Stone sold at that time between 40 and 50 head of pure Durhams, he still possesses the flower of his herd, and that several other breeders are contesting closely for the superiority, not only in Durhams but in sheep and hogs. The horses, too, have attained a degree of improvement, being better adapted for the work required of them, by an increase of muscle from judicious crossing with imported stock. The root crops in many localities evidently suffered from the continual heavy rains during the summer. The turnips in many places were inferior, having long necks, and on cutting off the tops were found to be hollow at the crown and partially unsound. The potato crop also suffered from the same cause, but not to the same extent on poor, as upon rich, highly cultivated lands.

TOWNSHIP BRANCHES.

ERAMOSA.—One hundred and fourteen members; subscription, $130; balance from 1856, $18.11; share of Government grant, $34.70; total receipts, $182.81. Paid in premiums, $168.50; expenses, $17; balance due Treasurer, $2.69.

ERIN.—Amount of subscription, $124; balance from 1856, $1.20; Government grant, $40.50; total received, $166.20. Paid in premiums, $125.75; expense, $28.81; balance in hand, $11.64.

GUELPH.—Two hundred and ninety-one members; subscription, $344; balance from 1856, $88; Government grant, $92.12; total received, $524.12; Paid in premiums, at exhibition, trial of ploughs and ploughing match, $439.50; expenses, $91.33; balance due Treasurer, $6.72. The Directors report that the Society is in a very flourishing condition, and that the autumn show was very successful, over 400 entries having been made.

Extract from Report.

The Directors having a large balance remaining on hand from the previous year, decided to offer handsome premiums to the manufacturers of ploughs, believing that such an arrangement would not only advance the interests of agriculture in this township, but also throughout the whole county.

The Society's Ploughing Match and trial of Ploughs, took place on the farm of Mr. Gideon Hood, on the 30th of October last, when the liberal sum of £25 was awarded in premiums, and then several of the best plough makers in the Province competed for the prizes offered; and the Directors are of opinion that the decision arrived at by the Committee who acted as judges on that occasion, gave general satisfaction. The result of such a trial will no doubt, tend to the introduction into this township of a superior quality of ploughs, which evidently is much wanted.

NICHOL.—Amount of subscription, $211; balance from 1856, $25.69; Government grant, $59.50; total receipts, $296.19. Paid in premiums at ploughing match, $40.30; premiums at show, $213.51; expenses, $52.23; balance due Treasurer, $9.83. The Directors report the annual exhibition to have been very successful, the number of entries being 500.

PILKINGTON.—One hundred and fifty-five members; subscription, $179.40; Government grant, $46.37; total receipts, $225.77. Amount paid in premiums, $183.50; expenses, $42.16; balance in hand, 11c.

Extract from Report.

In consequence of the increase of members, our Annual Show was considerably larger than usual, and in several classes a good deal of improvement was observable. In that of sheep (Leicester) especially, in consequence of the introduction of several imported rams during recent years, the improvement was noticed to be great. In regard to thoroughbred cattle, it may be said that hitherto there really have been none in this quarter; and the Directors were therefore glad to observe a two-year old bull, a bull calf, and yearling heifer, of the pure Durham breed, exhibited by Mr. Gavin Cardwell, of this township, purchased by that gentleman from the herd of F. W. Stone, Esq., of Guelph.

PUSLINCH.—Two hundred and twenty-two members; subscription, $266.50; balance from 1856, $17.53; Government grant, $71.60; total receipts, $355.63. Paid in premiums at fair and ploughing match, $277.50; general expenses, $55.89; balance in Treasurer's hands, $22.24. The Directors report the Society in a highly prosperous and flourishing condition, and that there has been a visible improvement effected through the instrumentality of the Society in the live stock and other agricultural productions throughout the township.

WENTWORTH.

COUNTY SOCIETY.—Two hundred and thirty-six members; amount of sub-

scription, $288.50; balance in hand from 1856, $99.87½; grants from county council and town of Dundas, $200; contribution from Flamboro West Agricultural Society, $246.15; Government grant, $900; deposited by township branches, $1058.50; total received, $2793.02½. Amount paid township branches, $1598.50; paid in prizes, $1034.50; expenses, &c., $218.75; balance due Treasurer, $58.72½. Societies have been organized under the new Act for the several electoral divisions in the county.

NORTH WENTWORTH.—*President*, Thomas Stock, East Flamboro'.

Secretary and Treasurer, H. R. O'Reilly, East Flamboro'.

SOUTH WENTWORTH.—*Secretary and Treasurer*, Wm. A. Cooley, Ancaster.

CITY OF HAMILTON.—*President*, Captain W. H. Nicholl, Hamilton.

Secretary and Treasurer, James S. Wetenhall, Hamilton.

A Turnip Match took place under the direction of the County Society, in the year 1857, of which the following is a report:—

Report of Committee appointed to decide the President's Prize of Five Pounds for the best field of Swedish Turnips, not less than one acre.

To the President and Directors of the County of Wentworth Agricultural Society.

Gentlemen,—The undersigned having at your request taken upon themselves to determine and award the prize of Five Pounds, offered by your President, for the best Field of Swedish Turnips of not less than one acre, commenced a circuit of inspection on Wednesday, the 4th instant, calling on the different competitors in the following order:

First, Mr. Thomas Hatt, situate on lot 52, in the 1st concession of Ancaster; soil, clay loam, wheat stubble manured with thirty loads of farm-yard manure, and ploughed in the fall of 1856, except about half an acre which was manured in the drills, the whole field comprising about 5 acres, was sown in drills thirty inches asunder; the seed had not been pure. The crop was a very fair average, yielding at the rate of seven hundred bushes to the acre; the bushel weighing sixty-seven pounds, making the yield 20 tons, 18 cwt. per acre.

Second, Mr. Thomas Stock, Lot No. 9, in the 3rd concesssion, East Flamboro'; soil, clay loam, clover sod, manured with 20 waggon loads of farm-yard manure, and ploughed in the fall of 1855, sown in the following spring to oats; manured again in the fall of 1856 with the same quantity and description of manure, and ploughed, ploughed twice in the spring, and thoroughly harrowed. Then applied a slight dressing of manure from the hen roost, which was gathered in the drills. Seed sown from the 14th to the 20th June, in drills, 24 inches asunder, at the rate of 3 lbs per acre. The plants were thinned to the distance of nine to ten inches asunder. The earliest sown, about one and a quarter acres, were of very impure seed, purchased as Mr. Stock informs us, from Mr. Bruce, a seedsman in Hamilton. This part of the field yielded at the rate of one thousand and forty-four bushels to the acre; the bushel weighing sixty-five pounds, making a yield a little over thirty and a quarter tons. The remainder of the field, sown a few days later, were very pure and very pretty; purple top Sweeds, yielding at the rate of nine hundred and nine bushels to the acre, and weighing seventy-one pounds to the bushels, making the yield 28 tons, 16 cwt. per acre; in the whole field there was scarcely a blank. The seed sown on the last one and a quarter acre, was purchased from Mr. Dally, York Street, Hamilton.

Third. Mr. David Armstrong, Lot No. 8 in the 2nd Concession, West Flamboro'; soil, clay loam, seed sown in drills, 27 inches asunder. Mr. Armstrong

had evidently committed an error in throwing the mould against his turnips in dressing, thereby encouraging a coarseness and an unseemly growth of small roots and suckers; he had also been unfortunate in purchasing his seed, which was very impure, from Mr. Bruce. Although upon the whole, his was a very fair crop of turnips, they were so inferior to those of Mr. Stock and Dr. Mackelcan, that they were not measured.

Fourth, Dr. Mackelcan, Lot No. 41 in the 2nd concession of Ancaster. Here we found as beautiful a fancy field of turnips as we ever saw; soil, sandy loam, clover sod manured in the fall of 1855, and ploughed; sown to millet in the following spring; manured with 20 loads farm-yard manure per acre, and ploughed in the fall of 1856; ploughed the following spring, 23rd May, and again the 15th June. Seed sown from the 19th June to 1st July, in drills 30 inches asunder, at the rate of 1½ lb per acre. Commenced thinning plants 17th July, to the distance of 11 to 12 inches. The yield averaged seven hundred and thirty-five bushels to the acre; weighing sixty-four pounds per bushel, equal to twenty-one tons.

We are of opinion that the drills were too wide asunder to produce the greatest weight to the acre; in that part of the field which was latest sown we observed several blanks, produced, no doubt, by the ravages of the fly. We are of opinion that the only remedy against this pest is thick sowing. Had the Doctor sown three pounds of seed instead of one and a half, his whole crop would have been increased, and the only unseemly appearance which his field exhibited, would have been avoided.

On the whole, we have great pleasure in bearing testimony to the beauty, purity, and excellence of this crop, in many respects superior to any we examined, but not equal in yield, for the reasons above stated, to that of Mr. Stock, either in the number of bushels, or in the weight of the bushel. We consider it proper to state, that the Doctor purchased his seed from James Osborne, James Street, Hamilton.

Fifth. Mr. Francis Wardell, Lot No. 47, in the 1st concession of Ancaster. Although Mr. Wardell's crop was very creditable, and one that would well repay his labor in cultivation, it was much inferior to Mr. Stock's and Doctor Mackelcan's—so much so, that it was necessary to measure. Mr. Wardell had also been unfortunate in purchasing some of Mr. Bruce's impure seed.

In the course of our route we visited several fields which were not competing, and found that nearly all those who purchased their seed from Mr. Bruce had been imposed upon; the seed being so impure, that no turnip grower would sow it, knowing its character.*

Root culture being a very important and interesting feature in the agriculture of the country, we have been much gratified with the advancement perceivable within a few years. A short time since a field of turnips was a rare thing to be seen; it has become now that there is rarely a farm without its field of turnips. Much improvement is also perceptible in the manner of culture, and those fields which we were called on to examine, with a view to awarding the prize, were examples of care and neatness.

For the general excellence of his crop, we have unanimously awarded the prize to Thomas Stock, Esq., of East Flamboro'.

Signed, { William Blair, Glanford.
John Weir, West Flamboro'.
John Smith, "

* It is but justice to Mr. Bruce to state that he imported the seed in question from an old and respectable house in England for pure seed, of good quality. It proved, however, to be mixed—a circumstance peculiarly unfortunate in a turnip competition. This is one of those casualties, to which the most careful and honest seedsman is occasionally liable, and, under the circumstances no blame can justly be attached to Mr. Bruce.—[Ed.]

TOWNSHIP BRANCHES.

ANCASTER.—One hundred and fourteen members; subscription, $145; balance from 1856, $1.07; Government grant, $81.50; grant from township council, $40; total receipts, $267.57. Paid in premiums, $218.75; expenses, $57.72½, balance due Treasurer, $8.90½.

BARTON, BINBROOK, GLANFORD AND SALTFLEET.—One hundred and twenty-one members; subscription, $134; balance from 1856, $36.70; Government grant, $102.17; total receipts, $362.87. Amount paid in prizes, $274.50; expenses, $37.77; balance in hand, $50.61.

BEVERLEY.—Two hundred and five members; subscription, $222; Government grant, $94.89; other items, $22.71; total receipts, $339.60. Total expenditure in premiums, expenses, &c., $349.08. Balance due Treasurer, $9.48.

EAST FLAMBOROUGH.—One hundred and sixty-eight members; subscription, $360; balance from 1856, $43.77; Government grant, $178.28; total receipts, $582.05. Paid in premiums, $444; expenses, $126.49; balance in hand, $11.56.

WEST FLAMBOROUGH.—Amount of deposit, $246.15; Government grant, $83.15. This society appears to have merged the amount of its subscriptions and apportionment of the public grant with the funds of the County Society, for the purpose of holding a joint exhibition, and makes no report of proceedings for the year.

YORK.

COUNTY SOCIETY.—Two hundred and twenty-six members; amount of subscriptions paid, $183; balance in hand from 1856, $202.15; deposited by township branches, $2031; Government grant, $540; sundries, 25c; total receipts, $2956.40. Paid township branches, $2355; paid premiums, $612; expenses, $69.55; total expenditure, $3036.55; balance due Treasurer, $80.15. Assets, consisting principally of unpaid subscriptions, $328. Liabilities, consisting of unpaid premiums, sundry accounts and balance due Treasurer, $213.15. Balance of assets over liabilities, $114.85. Societies were formed in January, 1858, under the Act 20 vic. cap. 32, for the several electoral divisions within the County.

EAST RIDING—*President*, J. P. Wheler, Scarboro.
Sec. and Treas., Dr. Doherty, Markham,

WEST RIDING—*President*, E. W. Thomson, Tork Township.
Sec. and Treas., Hugh C. Thomson, Toronto.

NORTH RIDING—*President*, W. H. Beresford, Newmarket.
Sec. and Treas., R. H. Smith, Newmarket.

CITY OF TORONTO—*President*, R. L. Denison, Toronto.
Sec. and Treas., Hugh C. Thomson, Toronto.

Extract from Report.

The Agricultural Society, of which the society now about to be dissolved is the representative, was originally formed on the 30th of May, 1830, under the name of the Home District Agricultural Society, and under the provisions of the first Act of the Legislature of Upper Canada, for the encouragement of agriculture, 11th Geo. IV, cap. 10, entitled, "An Act to encourage the establishment of Agricultural Societies in this Province;" passed March 6th, 1830. Under this act, when a District Society subscribed and paid £50, it was entitled to receive £100 from the Government. The Home District then embraced what are now the Counties of York, Ontario, Peel and Simcoe, and as an evidence of the advancement of the country, and the recognition of the importance of agriculture, we find that the section of country to which the legislature 28 years ago, considered £100 a sufficient apportionment of the public funds, has become entitled, under the gradual extension of legislation, to claim in the aggregate at the present time, the sum of £1750. The Society organised May 30th, 1830, embraced the names of many of the leading agriculturists of the District, some of whom are now no more, but a good many have continued members of the District or the County Societies within the limits of the District, from that day to the present time. The amount subscribed the first year of the existence of the Home District Society, was £63 15s, entitling it of course to the full amount of Government grant. This Society and its successors, the County and Township Societies of the District can claim, with justice to have been largely instrumental in promoting and encouraging agricultural improvement, both in production of grain and roots, and stock breeding, in Upper Canada. During the first years of its existence, we find it paying very respectable amounts in premiums. In 1832 it devoted a portion of its funds to the purchase and introduction of improved description of seeds, and in 1833 it commissioned a member of the society to proceed to the United States to purchase Four Durham Bulls. These bulls were nearly the first, if not the first animals with any pretensions to purity of that renowned blood in the Province. They cost only £100, but were really good animals, and descendants can be found to this day showing good points derived from them. The bulls were let by auction to members, and produced the first year £19 10s. hire. They were subsequently sold to private individuals. We will not attempt to follow the history of the Society through all its existence. Although sometimes it has been nearly prostrate, it has from time to time rallied, and has survived as the Home District or the County of York Society, to the present time. Branches have dropped off from it from time to time, till under the existing act there can scarcely be said to be any one society which can justly claim to be the exclusive representative of the old Home District Society. It, however, leaves vigorous successors, and amongst the institutions to which it may claim to have given birth may be included the Provincial Agricultural Association, first projected by members of this County Society, and which has contributed greatly to the distinguished reputation of Canada as a field for agricultural and commercial enterprise.

At our annual meeting last year, we had occasion to congratulate the Society upon the highly prosperous condition of the County. Now, we have to speak of a very different position of affairs. An almost unexampled commercial crisis has swept over both America and Europe, and in connection with an unusually bad season and bad crops, in this Province, during the past summer, joined also it ought perhaps to be said, to undue speculation on the part of farmers and others, in lands and other property, it has fallen particularly heavily upon this Province, and has involved many in serious financial embarrassments. We regret to have to say that the wheat fly has made its appearance, though in

very small numbers, in this district; and we fear, from the history of its depredations in other places, that it may seriously affect the production of wheat for a number of years here, unless some means shall be discovered of staying its increase.

TOWNSHIP BRANCHES.

ETOBICOKE.—Three hundred and eighty members; subscription, $518; balance from 1856, $114.19; Government grant, $82.62½; Set of Harness, presented by Mr. John Bell, Barrister, of Toronto, to be competed for at a Ploughing Match, value $80; Plough, presented by Mr. Haworth, Hardware Merchant, Toronto, also to be competed for, value, $60; entries paid by competitors at ploughing match, $118; cash donation for special premium, $12; special entries at Fall Fair, $28; total receipts, $1012.81½. Paid premiums at Spring Fair, $115; premiums at Fall Fair, $406.50; premiums at ploughing match, including plough and harness, $220; turnip match, $20; general expenses of management, $230 52; balance in Treasurer's hands, $20.79½.

GEORGINA AND NORTH GWILLIMBURY.—One hundred and eight members; subscription, $109; Government grant, $10.40; total receipts, 117.40. Paid Treasurer, balance due him from previous year, $15.96; paid prizes, $96; expenses, $2049; balance in hand, $2.95.

EAST GWILLIMBURY.—One hundred and sixty four members; subscription, $168; balance from 1856, $27.60; public grant, $33.63; total receipts, $229. 23. Paid in premiums at show and ploughing match, $172; expenses, $20.63; balance in hand, $36.60.

KING.—Three hundred and fifty-nine members; subscription, $359; balance on hand from 1856, $80.27; entrance fees paid by non-members, $28; share of Government grant, $33.82; total receipts, $501.08. Amount paid in premiums, $277; paid for 347 copies of the *Agriculturist*, $148.50; expenses, $22.40; balance in Treasurer's hands, $53.18.

MARKHAM.—Amount of subscription, $388.50; share of public grant, $48.48; receipts at Fair, $11.88; total received, $448.86. Paid accounts due from previous year, $12.25; premiums at Spring Fair, $96; premiums at Fall Fair, $296.50; expenses, 43.03½; balance in Treasurer's hands, $1.07½.

SCARBOROUGH.—One hundred and thirty-eight members; subscription, $219.50; balance on hand from 1856, $65; Government grant, $27.12; total receipts, $311.62. Paid premiums at ploughing match, $90.50; premiums at Fall Fair, $182.50; expenses, $15.50; balance in hands of Treasurer, $23.02.

VAUGHAN.—One hundred and ninety-seven members; amount of subscriptions, $301.37; balance from 1856, $18.50; Government grant, $21.70; entries at ploughing match and Fairs, $85; donations, $79; total receipts, $505.57. Paid premiums at ploughing match, $160; Spring Fair, $63; Fall Fair, $197; expenses, $68.77; balance in hand, $16.80.

Extract from Report.

The Directors feel that they can congratulate the Society not only upon the progress already made, but upon their prospects for the future. The deep interest in its proceedings that has been excited among the principal agriculturists in the township has communicated a powerful impetus in the right direction, and clearly indicates that the benefits arising from institutions of this kind are becoming more generally understood and appreciated, as their practical results in improved culture, the increased cultivation of root crops, improved breeds of horses, cattle, sheep, swine are poultry, and from year to year becoming more apparent.

WHITCHURCH, OR NORTH YORK.—Two hundred and thirty-seven members; subscription, $243; balance from 1856, $78.20; Government grant, $36.69; total receipts, $357.89. Paid in prizes, $327.94; expenses, $28.11; balance in hand, $1.84. The Directors report very successful shows, both Spring and Fall; 470 entries having been made at the latter, a large increase over former years.

YORK TOWNSHIP.—Two hundred and six members; subscriptions paid, $403.75; Government grant, $32.50; total receipts, $436.25. Paid in prizes, $287; expenses, $103.53; balance in hand, $45.72. The Directors report a highly successful autumn exhibition, upwards of six hundred articles having been entered in competition.

Extract from Report

We beg to embody in our report a few remarks in reference to the crops of the past season:—

POTATOES.—There was a large breadth of land under this crop, but it was in very many cases a failure, and much loss was occasioned thereby. There were a few patches tolerably good, but these were only exceptions, and grown on land of light texture and porous subsoil, or that had been underdrained, demonstrating very decidedly the advantage to be derived from that means of improvement.

SWEDISH TURNIPS.—A considerable breadth of land was also under this crop, shewing that its culture is on the increase. The crop was an average one, but the quality, except on land that was either underdrained or naturally of a porous subsoil, was inferior, the bulbs showing a tendency to decay, and having very long necks, indications of too rapid a growth in the early part of the season, occasioned no doubt by the frequent rains and hot weather which prevailed at that period.

MANGEL-WURZEL AND BEETS are not cultivated in this township in any quantity, or at all for market. The few patches that are grown are only for family consumption.

HAY.—This crop was a full average one, but it was much injured in quality by the frequent and heavy rains which fell during the season of hay-making, which season was thereby greatly prolonged, and the expenses consequently much increased.

FALL WHEAT.—There was a large area under this crop, the produce was, for this township, far below an average; the frequent freezings and thawings during the winter and spring, caused much damage by winter killing, and throwing out of the roots; the crop also suffered considerably by the continued wet weather during the summer and harvest, which, like the hay-harvest, was greatly retarded from this cause. The quality of the sample was also below

the general average for this township. The midge, or wheat-fly, has made its appearance in many places, and although we have suffered less from its ravages than many others, yet we have every reason to fear its increase, inasmuch as few fields were wholly free from its presence.

SPRING WHEAT.—Of this grain but little was sown, but that little was generally good. Spring wheat appears to be less affected by the frequent rains than fall wheat.

BARLEY.—Of this crop a considerable quantity was sown, and the produce was a full average, but the quality was greatly injured by the wet season. The Wheat Fly also caused some damage by its attacks, particularly on the two rowed barley.

OATS AND PEAS were a full average. Oats were generally laid flat before the time of harvest, the expense of gathering being thereby much increased. The quality of the sample was tolerably good.

RYE, FLAX, BEANS AND BUCKWHEAT are not grown in this township in any quantity, and scarcely at all for market. The small lots that are grown are almost entirely for family use.

In concluding the above abstract of reports, it may be proper to observe, that a condensation of the financial statement of every society reporting is given, with the view of meeting the requirements of the Act relating to Agriculture, as expressed in clause 15, and of showing to the government and the public, in as brief space as possible, in what manner the funds entrusted to the Directors of Agricultural Societies are disposed of, so as to enable them to judge in how far such expenditure of funds is likely to be of advantage to the country. Although the particulars of receipts and expenditure, and the financial position of any individual Society may not be interesting to a very large number of persons, still each Society has always a few friends interested in its progress, and to such the abstract will be of use, as furnishing them from year to year, not only with a convenient means of reference to the result of the exertions of their own Society, but to that of the operations of other Societies as well; thereby enabling them to compare one with the other, and to receive an occasional useful suggestion from a judicious practice, or to be taught to avoid an error. Beyond the condensation of the mere formal statements of names of members, lists of prizes awarded, statements of receipts and expenditure, &c., required by the Act, from each Society receiving Government aid, such portions of the remarks or general observations contained in the reports, have been copied, as seemed of a character likely to be interesting or useful to the public. Complaints of the commercial and agricultural depression of the country, so unexpectedly and widely different from the overflowing prosperity and flattering prospects of a year or two previously, have been freely adopted by the societies; but it has not been considered necessary, except in a very few instances, to copy such remarks, nor yet the complaints in many cases made, of apathy on the part of the public in supporting the society, or the descriptions of county or township fairs, often given a good deal in detail. Remarks or details of the kind here alluded to,

although very proper and suitable to be submitted to the annual meeting of a society and adopted in the report, are yet often of rather too local an application to be of great interest to the public, or add much to the stock of general information; and their re-production in the pages of the Transactions of the Board of Agriculture, would add considerably to the bulk of the volume, and from their generality or sameness of character, would involve too much repetition. But remarks have been copied in all cases where they are of a character to illustrate the productive capabilities, the progress of agricultural improvement, the wants and resources of the district to which they apply. The particular division of the reports of societies to which these remarks refer, and the duty of preparing which is inculcated in the 42d clause of the Act, in the words, "together with such remarks and suggestions upon the Agriculture and Horticulture of the country, and Arts and Manufactures therein, as the Directors shall be enabled to offer," is neglected entirely by some of the Societies, and receives but slight attention from others. But if the officers of Agricultural Societies would take pains to collect and embody in their reports, specific facts relating to agricultural and other pursuits in their several districts, they might make these reports the medium of bringing together annually, and disseminating, a mass of information of the most useful and interesting character. An annual gazetteer or book of reference would thus be formed for the whole Province, which would furnish the latest information as to the actual state and progress of every county and township, in a shape at present not obtained from any source, but which might be easily brought together by the means here suggested. Such a collection of facts would be of great value and interest to the country itself, and to all in search of information respecting it, and by being continued from year to year would be an important aid to the deductions of the statistician. The reports might embody facts upon such questions as the following:—The quality and price of land, cleared or uncleared; the average yield of grain per acre; the proportion of root crops cultivated on each farm, the yield per acre, and the use made of them; the amount of artificial drainage effected or required; the kind and market value of live stock bred; the progress in the improvement of implements used; and on any other points suggesting themselves, illustrating the physical advantages, or the requirements for the future development of the resources, of any section of the country. Such embodiment of facts would by no means need to be of great length, or of a complicated or elaborate character, but merely to be concise, definite and truthful, and written in a plain, intelligible manner. These remarks are respectfully submitted to the consideration of the officers of societies when preparing for their annual meetings. Under the arrangements now established for publishing the Transactions, the reports will hereafter be given early in the season, and will consequently possess more general interest. To facilitate this, the reports should be forwarded to the Board, at as early as possible a date after adoption by the Societies.

THIRTEENTH PROVINCIAL EXHIBITION.

The Provincial Exhibition of Upper Canada for the year 1858, being the Thirteenth held by the Association, took place at Toronto, commencing on the 28th September. When the selection of the place of holding the show for the year was first made, some of the citizens of Toronto, in co-operation with members of the Board of Agriculture, projected the obtaining of a portion of land, and the erection of a building upon it of a permanent character, to be reserved for the use of the Association, upon future occasions, whenever the Exhibition should again be held at the city. In pursuance of this object, during the session of the Board of Agriculture, from March 23rd to 26th, 1858, negociations were concluded between the Government, the Corporation of the City, and the Board of Agriculture, by which the Government ceded to the Corporation a portion of the Military Reserve within the liberties of the city, for the purposes of a public park, from which twenty acres, lying to the south of the Provincial Lunatic Asylum Grounds, were reserved for the use of the Association, to hold the Provincial Exhibition upon, whenever it should be at Toronto. Upon this ground, after the obtaining of plans, in competition for prizes offered by the Local Committee, a suitable building was erected. The dimensions, and character of the Building are described at page 85 of this volume. The local contributions towards the expenses were, from the City of Toronto, 20,000 dollars; the County of York, 4,000 dols.; the City of Toronto, the West Riding of York, and the Township of York Agricultural Societies, in the aggregate, about 800 dols. The building was duly erected within the time specified in the contract, the ground fenced and levelled, offices erected, and pens and stalls provided as usual, for the accommodation of the horses, cattle, &c.

The amount of prizes offered for competition in the list published in the beginning of the summer, including prizes for essays, and musical bands, was about $11,000 being nearly 1,000 dollars more than at the previous show at Brantford. The principal changes in the list were in the Manufactures and Fine Arts departments, which were revised and re-arranged by the Board of Arts and Manufactures, and the amounts somewhat increased. The other portions of the list remained nearly the same as formerly, with the exception of the class of horses, in which there were separate classes made of agricultural and draught horses of all ages, formerly shown as one class, and by which something over two hundred dollars was added to the amount of the list. As the time for holding the exhibition approached, it became evident that there would be a very large number of animals and articles entered for competition, and when the books closed, there were 5559 entries, being over twelve hundred more than

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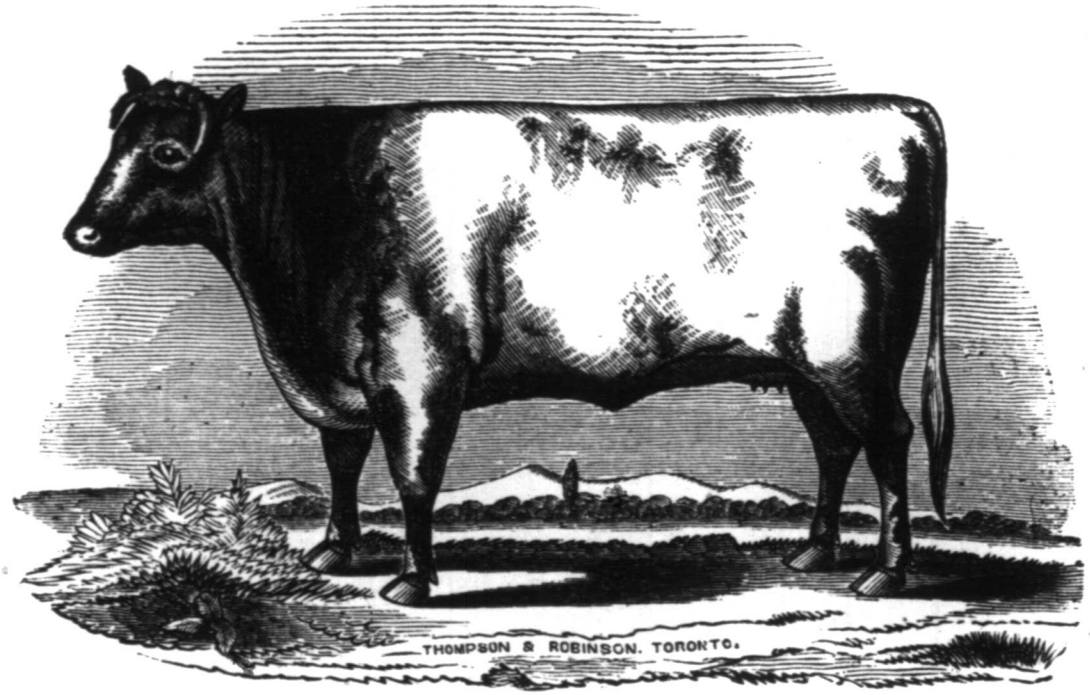

"JENNY LIND," 458, U. C. S. R.

(146) Winner of Second Prize as a Durham Cow of three years old and upwards at the Provincial Exhibition, Toronto, 1858. The property of John Gill, Toronto Township.

Roan, calved March 26th, 1852; bred by Mr. Jordan, Eastburn, Yorkshire, England; got by Lord Grey (10446), dam (Jenny Lind) by Lord Marmion (8244), g. d. by Sir Launcelot (5166), gr. g. d. by Mowthorpe (2343). *See page* 177.

on any previous occasion. The articles for exhibition in the building were brought in on Saturday, September 25, and on Monday and Tuesday, 27th and 28th, and from their great number and the late period at which the bulk of them arrived, the committee of arrangement had not a light task upon their hands to get them all properly placed before Wednesday morning, the day of admitting the public.

MEETING OF THE BOARD OF AGRICULTURE.

MONDAY, Septembr 27, 1858.

A meeting of the Board of Agriculture, convened by the Secretary was held this day in the Committee Room on the Show Ground, at 1 o'clock, p. m.

Present: Messrs. R. L. Denison, H. Ruttan, Asa A. Burnham; William Ferguson, First Vice President of the Association, and acting as President, in consequence of the absence of the President, Mr. Stevenson, from ill health; Rev. Dr. Ryerson, Dr. Beatty, and Professor Buckland.

In the absence of the President of the Board, the Rev. Dr. Ryerson was requested to take the chair.

Minutes of previous meeting were read and confirmed.

The Treasurer, Mr. Denison, stated, that in accordance with a resolution of last meeting, he had again applied to the Government respecting the balance due from the Parliamentary Grant for the encouragement of Agriculture in Upper Canada, in accordance with the Statute 19 Vic. cap. 47, and that he believed the matter was in a favorable way of settlement, although he had not yet received an official reply.

Mr. Buckland stated that he had consulted the Rev. Dr. McCaul, on the subject of giving an address in the Exhibition Building, on Thursday evening, and that that gentleman had consented to do so, if it were deemed desirable by the Board. It was agreed to leave the subject of public addresses in the hands of the Secretary, who was authorised to make such arrangements as might appear expedient and practicable.

It having been represented to the Board that it would tend to prevent over crowding at the gates, and be a convenience to the public, for admission tickets to be sold at some place or places in the city, it was

Resolved,—That the Treasurer be authorised to sell badges and tickets of admission to the Show Grounds, at Mr. Pell's Store in King Street, and at the office of the Board.

Resolved,—That the following persons be furnished with free tickets of admission to the show grounds, for themselves and families, viz:—all persons constituted members of the Association by statute; the members of the County Council of York and Peel; the members of the Corporation of Toronto; the members of the Local Committee.

Roan, calved March 26th, 1852; bred by Mr. Jordan, Eastburn, Yorkshire, England; got by Lord Grey (10446), dam (Jenny Lind) by Lord Marmion (8244), g. d. by Sir Launcelot (5166), gr. g. d. by Mowthorpe (2343). *See page* 177.

Gill, Toronto Township.

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It was further agreed that free single admission tickets be given to the performing members of the Metropolitan Choral Society, and of Mr. Carter's Sacred Choir, and that Messrs. Humphreys and Carter be requested to receive and distribute the same.

The President of the Board, at this stage of the proceedings, entered the room and took the Chair, the Rev. Dr. Ryerson vacating the same.

Resolved,—That the officers and soldiers of the garrison be admitted to the show grounds free of charge, provided the men attend in uniform and in charge of non-commissioned officers, not more than fifty be allowed at one time, and that a copy of this resolution be furnished to the commanding officer.

An application having been received for pecuniary aid towards the projected Regatta during the Exhibition week, it was

Resolved,—That this Board regrets that it cannot entertain the application of the Toronto Yacht Club, as it is deemed foreign to the objects of the Association to apply funds to such a purpose.

The Board, having appointed to meet the Local Committee at 4 o'clock, then adjourned till next day, at 11, A. M.

September 28th.

The Board met at 11, A. M., pursuant to adjournment. Present: Messrs. E. W. Thomson, President; R. L. Denison, Asa A. Burnham, H. Ruttan, Dr. Beatty, and Professor Buckland.

The arrangements made by the Local Committee for inaugurating the Exhibition to-morrow, having been stated and approved, it was

Resolved,—That the Acting President of the Association, Wm. Ferguson, Esq., with Rev. Dr. McCaul and Dr. Beatty, be a Committee to prepare an address to his Excellency the Governor General, for presentation to-morrow at the official opening of the Exhibition.

After consulting on and disposing of various matters of routine and detail relative to the completing of the arrangements of the Show, the Board adjourned, with the understanding that as many members as may be practicable should meet every morning in the office on the grounds, at 9 o'clock, during the remainder of the show week.

THE INAUGURATION OF THE EXHIBITION.

The official inauguration of the Exhibition was appointed to take place at half-past twelve on Wednesday, the 29th September. At noon of that day, the grounds were opened to the holders of single admission or quarter dollar tickets, —none but members having previously been admitted,—and there being a very large number of visitors, every available standing place in the building was soon occupied. When the proceedings commenced, it was estimated that six or seven thousand persons were within the building. A portion of the inaugural ceremony consisted in the execution by the Metropolitan Choral Society, composed of two hundred and fifty vocal and instrumental performers, of various pieces of music suitable to the occasion. The orchestra, with an organ, was

erected opposite the stand from which the addresses were delivered. This portion of the ceremonial was in the highest degree successful and satisfactory, and reflected very great credit upon the Choral Society.

His Excellency the Governor General and suite arrived at the appointed hour and proceeded to the building, where he was received by Members of the Board of Agriculture and officers of the Association.

His Excellency having taken his place on the stand, the orchestra performed the anthem "God save the Queen."

The following prayer was then offered up by the Lord Bishop of Toronto, the Rev. Dr. Strachan :—

PRAYER.

Almighty and everlasting God, by whose power we were created, by whose Providence we are sustained, and by whose Grace in Christ we are made heirs of Eternal Life, accept, we beseech Thee, the sacrifice of our praise and thanksgiving, and receive the prayers which we this day offer up unto Thee, as for our gracious Sovereign Queen Victoria, and her dominions, so especially for this Province.

We acknowledge, O Lord, that Thou hast multiplied upon us thy blessings, temporal and spiritual, and in all that we have received, and in all that we have enjoyed, not our merit, but thy mercy, not our foresight, but thy Providence, must alone be magnified and praised.

And now, O Lord, we beseech Thee to bless the work which Thou hast enabled us so far to accomplish, and grant that it may encourage the more general cultivation of the arts of industry, so that nations and kindreds may be united together in the bond of peace and concord, and a more promising door opened for spreading the Gospel of our Redeemer, till the earth shall be filled with the knowledge of the Glory of the Lord, as the waters cover the sea.

It is of thee, O Lord, that peace is within our walls and plenteousness within our palaces; that men go forth in safety, and that knowledge is increased throughout the world. Not therefore to us, O Lord, but unto Thy name, be the praise and the glory.

Whilst we survey the works of art and industry which surround us, let not our hearts be lifted up, that we forget Thee, our heavenly Father, or that it is not of our power or wisdom, or of the might of our hands, that we have gotten our wealth; but lead us in humility to remember that all is Thine, and in Thine hands to make great, and give strength and honor.

We entreat Thee, O Lord, to take this great multitude of thy people now assembled before Thee, and especially those who have been actively engaged in promoting this charitable undertaking, under thy holy guidance and protection. Bless them, their families, and substance, and accept the works of their hands; so shall this, and the many signal mercies which we are daily receiving from Thy bounty, dispose our hearts to serve Thee more and more, who art the Author of all good. Teach us, we beseech Thee, to use those earthly blessings that Thou hast given us so richly to enjoy, that they may not withdraw our affections from those heavenly things, which Thou hast prepared for them that love Thee.

O Lord, hear us in these our prayers, for Jesus Christ's sake; to whom with Thee, and the Holy Ghost, be all honour and glory, world without end, Amen.

The orchestra performed the chorus "The Heavens are telling," by Haydn.

The following address was then presented to His Excellency the Governor General, by Mr. Ferguson, Acting President of the Association.

To the Right Hon. Sir E. Walker Head, Bart, Governor General, &c. &c. &c.

We, the Officers, Directors, and Members of the Provincial Agricultural Association, respectfully desire to offer to your Excellency a hearty welcome on this, your usual visit to our annual exhibition, and to express the sincere pleasure we feel in being thus honored by your presence.

As successful agriculture is the basis upon which the continued prosperity of our country must be built, we hail with pleasure the countenance which your Excellency affords those who are anxiously laboring in its advancement.

The interest evinced by the people in promoting the agricultural welfare of this rising Province, is testified by the erection of this noble edifice, and the appropriation of these ample grounds for periodical exhibitions of agricultural and mechanical products.

And while we assure your Excellency of our high esteem for you personally, we also wish to take this opportunity to convey to you, as the representative of our most Gracious Majesty, the assurance of our most devoted attachment to the person and government of Her Majesty the Queen, who we fervently pray may long live to reign over the loving subjects of her vast domains, of which Canada forms not the least important, and, as we would hope, not the least valued part.

On behalf of the Provincial Association.

WILLIAM FERGUSON,
Vice-President.

His Excellency replied as follows:—

Mr. President, Gentlemen of the Agricultural Association of Western Canada—I have in the first place to thank you for the welcome you have now given me, and for the very kind expressions you have used in the address which I have had the honor to receive. You speak of the pleasure it gives you to see me here. I can safely say I have the greatest satisfaction, on the present occasion, to see assembled within the walls of this building, the representatives of the agricultural and mechanical interests of Western Canada. I congratulate you on having so ample a building for your important meetings; and it does infinite credit to Toronto to have come forward to meet the wants of the Association in a manner worthy of the all important objects which the Association is instituted to promote. It gives me, therefore, on this occasion, great pleasure, to be present at your annual Exhibition. I rejoice to see assembled here persons from all parts of the Province, who feel an interest in the prosperity of the country, and who are desirous of promoting its welfare. I am also deeply gratified to see them assembled in a proper building, suitably fitted up to receive them. I may observe, too, that the position in which this building is placed is not an unimportant one: in itself it is a witness to the improvement of Canada; it shows her advancement in the mechanical arts. Twenty years ago no person would have thought that this day would have seen such a building at the head of Lake Ontario. And its erection on this spot is indicative alike of the advancement of the whole Province as of Toronto. The prosperity of Canada; the amity of Canada; the life of Canada depend on the inland waters—these great seas which pour down the St. Lawrence, connecting us with the ocean, and through the ocean with Europe, the mother country. The prosperity of Canada depends on the St. Lawrence; it is the life-blood of the Province. The all important thing for the future of Canada, for its wealth and national existence, is those masses of water. The commerce on these waters is becoming more important from

day to day. The advancement of the Province bears witness to her progress.—It is true that the interests of the Province are at present somewhat depressed, from the difficulties under which we are laboring, by reason of a temporary depression. I believe the depression to be but temporary; I believe that it is a mere langour arising from that which is past, not an absence of strength; and I look forward to a speedy revival. The storm itself is passed; the clouds are still floating over and around us. The money which has been laid out in the Province for providing the means of communication by land and water, will bear its fruit, as well to the agriculturist as to the mechanic and merchant. And if proof of that is wanted it may be supplied by figures which have been guaranteed me by the authorities of the Grand Trunk Railway. They have stated to me that, between the 1st December, 1857, and the 30th April, 1858, they carried over that line alone upwards of 178,000 barrels of flour, and 81,000 bushels of wheat. Of that quantity, if I remember rightly, 47,000 barrels of flour, and 35,000 bushels of wheat were for shipment to Portland. Now, Sir, I will ask you and the membefs of the Agricultural Association who are here present, if it is not of the utmost importanee to the farmer who produces the grain, and the miller who grinds it, that they should be able to send their produce to market at any time of the year? Very few years have elapsed since this country was shut up for several months in the year from the seaboard, when a man could not get his produce to the market. Whatever will remedy that evil is calculated for the benefit, not only of the merchant and trader, but also of the agriculturist. Nor is this the only railway, nor this the only trade of importance. The present occasion, perhaps, is not one in which I should go minutely into these matters, but I will make a few further remarks on this head. Not long ago I assisted at the inauguration of the Buffalo and Goderich Railway. This is another important line, crossing a country amply provided by nature for producing grain, and a country which will be soon filled up with a busy population, who will turn these sources of nature to the best advantage. The branch of the Grand Trunk to London has been opened, or is about to be; and we have also the Great Western conveying passengers from one end of the peninsula to the other. All these facts and material aids to the farmer and mechanic will tell upon the future prosperity of this great Province. I had hoped on the present occasion to introduce to this meeting the Representative of Her most Gracious Majesty at Washington—Lord Napier—who engaged to meet me here yesterday or the day before; but I am sorry to say that yesterday I received a telegraph from New York, saying that he was unable to come, and that he would write and state the cause of his absence. I would have been glad if he were present, not only because he would have met with a hearty welcome as representative to a country with which we are closley connected by constant intercourse; but I should have wished him to hear from your own lips and see with his own eyes the progress of Canada, and her loyalty to Her Most Gracious Majesty. But I may say a few words on another point connected with the growth of Canada—that is the prospect attached to the Western trade. I learned enough when at Goderich, in conversation with some gentlemen connected with the State of Michigan, to convince me that in few years a most important trade will be brought through the country with the Western States. These States admit of indefinite extension; and I trust, I may say, that British territory on the other side of the boundary line, will, in an equal degree, admit of extending prosperity. But facts which come every day to light seem to show what the future of that trade will be. A short time ago a gentleman waited on me who had settled at Green Bay, at the head of Lake Michigan. He said—"I call on you, because I feel an interests in the progress of Canada. At Lake Michigan we know our commerce will have to pass through your country, as the one with which we are

closely connected by all the ties of nature and the feelings of a commercial community." This is, therefore, a subject of deep importance. I do not know that I have anything to add to the few observations I have made, only to say that, in the expressions of your loyalty to our Queen which you have made in your address, is found a sufficient confirmation of the fact that, if there is a city in Canada which entertains strong feelings of loyalty to the Queen, it is Toronto, and I know that the feeling throghout the Province is one of devoted attachment to Her Most Gracious Majesty. I thank you on behalf of the Queen for this renewed expression of attachment on the present occasion, and I thank you again, on my own behalf, for the honour you have done me in receiving me this day as you have done, and for the welcome you have given me.

The orchestra performed the "Hallelujah Chorus."

His Excellency then came forward and declared the Exhibition to be opened.

The Choral Society sang the 100th Psalm.

His Excellency then retired, the orchestra singing the "National Anthem."

THE STATE OF AGRICULTURE AMONGST THE ROMANS.

Being the substance of an Address, delivered in the Exhibition Building, Thursday Evening, September 30th, 1858

BY THE REV. JOHN M'CAUL, LL.D., PRESIDENT OF UNIVERSITY COLLEGE, TORONTO.

The subject to which I propose directing your attention this evening, is so extensive, that I cannot hope to be able to give more than a rough outline of it in the limits suitable on such an occasion as the present. Omitting then, the consideration of all doubtful points, on which there is a diversity of opinion, I shall confine myself to ascertained facts, and endeavor to offer explanations on those topics, which would seem the most worthy of notice to any practical man desirous of understanding the state of ancient Roman Husbandry. With this view I shall treat the subject under the heads of Farms and Houses, Crops, Cattle, and Modes of Culture. It will, perhaps, be surprising to some of those whom I address, when I inform them, that the quantity of land originally allotted to each Roman citizen did not exceed 2 *jugera*, a *jugerum* being about two-thirds of an English acre. Subsequently the allotment was increased to 7 *jugera*, and such was the extent of the farm owned by the celebrated Cincinnatus, who had but four of the seven *jugera* under cultivation. Afterwards it appears that the maximum was fifty *jugera*, and the law of Stolo prohibited any person from possessing more than five hundred. One of the agrarian measures of the Gracchi was to reduce the landed estate which could be held in Italy by any one individual, to 200 *jugera*. We must bear in mind, however, that these restrictions related only to public lands. The ancient Romans seem to have been very careful not to have a larger farm than they could well cultivate. Cato gives as the size of what may be called his model farm, 100 *jugera*,

and Virgil warns the husbandman in the well known caution, that however he might admire a large farm, he should cultivate a small one. In their choice of situation they were very particular, influenced of course chiefly by the adaptation to the crops, which they desired to cultivate. Cato gives the preference to sloping land, with a southern aspect, having a stream running in front of it, and Columella in enumerating the requisites which should decide a choice, gives the excellent practical advice, that the farm should be so situated as to have good air, good soil, good water, good roads, and good neighbours. Need I say that this advice is admirably suited to our own circumstances in this young country, and that many a new-comer amongst us, through indifference to these particulars, or a passion for some picturesque sequestered spot, has been rudely awakened by the stern grasp of poverty, from his dreams of Arcadian felicity in rural retirement! Soils were distinguished as fat and lean, loose and dense, moist and dry; and although the farmers of those days had none of the advantages which we have derived from the investigations of Chemistry or Geology, yet they had popular tests sufficient to indicate the character of the land. Virgil mentions several of these indications; and it is remarkable that he notices in terms, strictly applicable to circumstances of every day occurrence amongst us, the great fertility of land which has been recently cleared, or which has been improved by burning. The experience of many whom I address, will bear out the statements of the Mantuan poet, and the prizes which we have won in competition at European exhibitions, attest the excellence of the crops, which we raise on land, that we have won from the primeval forest by the axe or by fire.

The villas or country houses of the wealthy Romans were on a prodigious scale, when compared with anything of the kind that we have. Lucullus is said to have had one of such magnitude, that "he had more ground to sweep than to plough." We have two descriptions by ancient authors of villas of this class. In that described and owned by Pliny, which, relatively to the cost and splendor of the villas of his time, was nothing more than a convenient and agreeable residence, there were extensive suites of apartments admirably arranged for comfort and enjoyment, with ample accommodation for servants and slaves; and attached were baths, swimming basons, fish-ponds, tennis court, gymnasium, terrace, covered airing ground, vineyard, flower garden, kitchen garden, &c.—Columella in his description seems to have had more in view what was suitable for farming on a large scale. The accommodation supplied by the villa, is divided by him into *urbana*, for the use of the proprietor, *rustica*, for his laborers, and *fructuaria*, for produce. In the portion for the use of the master were apartments, some suitable for summer, others for winter, with library, baths and porter's lodges. In the second portion was the kitchen, and accommodation was provided for the steward, the bailiff, the herdsman, the shepherd, goatherd, swineherd, &c.; whilst the third comprehended granaries, fruit-room, wine-room, wine and oil presses, stables, pens, kennels, store-houses, dove-house, thrush-house, poultry house, &c., with orchard and garden. It is plain that such extensive villas, as these were only held by large proprietors, whilst poverty and misery were close neighbours to their "unwieldy wealth and cumbrous pomp." There was then no such class as the independent farmers of this country, living in secure possession of the comfortable homesteads and smiling fields, which their own good arms, with the blessing of God on their labour, have carved out of the bosom of the forest. There was then no such class as the sturdy yeomen of this country, living in undisturbed enjoyment of the competency which industry, honesty and sobriety are sure to win here—showing respect where respect is due, and rendering loyalty to their Sovereign, not as slaves, fearful

of consequences, but as freemen, grateful for the blessings which they enjoy under the mild and benignant sway of the fair hand that rules us. No: with them there were either large proprietors or small tenants; the former like huge trees, dwarfing all near them, where they cast their shade. Frequently the farms were worked by slaves, acting under the superintendence of a land bailiff. They also had an arrangement somewhat resembling our plan of "shares," but more like the metairie system, which at present prevails in Italy. But as time presses on such an occasion as the present, I must proceed to the next topic, which I purposed bringing under your attention, viz., the crops of the ancient Roman farmers. They depended on very different things from what we do for support or for profit. But little attention was paid to cereals, as they drew the greater part of their supplies for consumption from Sicily, Sardinia, and Egypt. Their most remunerative crops were grapes, olives, and honey.—From the first, they got wine, which was in general use amongst all classes; whilst olives furnished them with vegetable oil, useful for many purposes for which we use butter, and in honey they found a substitute for that, with which the sugar cane supplies us. They were, however, in the habit of sowing several kinds of cereals; wheat, spelt, sesamee, rye, millet, panicum, and barley. Some have supposed that they had maize, our favorite Indian corn, under the name *zea*, but there can be no doubt that this is a mistake, as it was first discovered in America, where it is indigenous. Of their green crops the principal were beans, lucerne, lupines, vetches, lentils, the chickling vetch, chick pea, turnips and rape. They also cultivated hemp and flax.

And now let me advert for a few minutes to a subject in which many of you take great interest, as is amply testified by the rich and varied abundance which loads the tables below me—I mean Horticulture. You will probably be surprised to hear that the ancient Romans, although they had so extravagant a passion for extensive decorations, and so high an appreciation of the beauties of nature, yet cultivated so few flowers, that there is generally a greater variety in the plots before our doors. Their principal ornamental plants were the lily, the marigold, the narcissus, the rose, the violet, the hyacinth, the snapdragon, the convolvulus, the amaranth, the crocus, thyme, vervain, and a few more. Their list of ornamental trees and shrubs, was also very limited. The chief were the bay laurel, the myrtle, the tamarisk, the clematis, and heath.

The principal fruits were, in addition to apples and pears, plums, apricots, damsons, peaches, lemons, figs, pomegranates, stawberries, mulberries, blackberries, medlars, cucumbers, pumpkins, and, as some believe, but apparently on insufficient grounds, melons.

Their kitchen garden contained many of the herbs at present in common use: leeks, onions, parsley, beet, cabbage, artichokes, kidney beans, lettuce, parsnips, wild asparagus, sorel, endive, skirret, savory, &c, and special attention was paid to such as were endowed with medicinal properties, such as marjoram, anise, balm of gilead, poppy, penny-royal, hellebore, rosemary, aconite, squill, rue, &c. In using the term kitchen-garden, I may perhaps have unintentionally misled you into the belief, that the arrangements of their gardens were similar to those amongst us. Now this is not the fact. From Columella's account it is plain that the gardens attached to their farm houses contained not merely ornamental plants and shrubs, but also fruit trees, vines, and pot-herbs. Nor was it unusual to find "roses and violets side by side with leeks, and onions."

There is probably no subject connected with agriculture, in which there is a greater difference between the ancient farmers and those of our days, than in live stock. Although they were aware of the difference of breeds, and

have well described the good points of cattle, yet they by no means paid th same minute attention to the subject, that we do. The oxen with them were valuable merely for draught; and the sheep for wool and milk. They never fattened cattle, as we do, for the shambles; indeed, beef and mutton were not such common articles of food as they are with us.

Ewe's milk was preferred to that of the cow, and from it cheese was generally made. Of this they had two kinds, the soft and the hard, the former probably resembling our cream cheeses. As to butter, to which we justly attach so much importance, there is no mention of its having ever been used as food. Their chief care was as to the fleece of their sheep, and with this view they were most attentive to the selection of rams. Virgil advises the rejection of a ram, even though his fleece should be white, if he has but the blemish of "a black tongue." In the care of their sheep, they were very particular; the best pastures were selected, and the flocks were often moved to a more favorable locality for the winter. They were driven every day to the water; and the weakly or more valuable were protected from the inclemency of the weather by leathern jackets. But however indifferent they were as to raising fat cattle, they were most attentive to the fattening of poultry and other birds suitable for the table. For these they had large and carefully constructed preserves, and we read of thousands of thrushes, pigeons, and quails, being shut up in pens or rooms, undergoing the process of preparation for the cook. With the same object dormice were kept in jars and fed on acorns, walnuts, and chestnuts, until they were fit to gratify the palate of epicures. To the villas of the wealthy were attached preserves for periwinkles and other shellfish, and also ponds, in some cases supplied with sea water, in which hoals of fish awaited the selection of the caterer. But I must hurry on in this hasty survey to the last topic, to which time will permit me to direct your attention: the modes of cultivation in use amongst the ancient Romans. That they, as well as we, had good, bad, and indifferent cultivation, there can be no doubt; and Pliny tells us an interesting story, from which we learn that there was the usual difference in the results. A freedman, named Cresinus, had such fine crops on his small farm, that his neighbors, envious of his success, accused him of witchcraft. When brought to trial, he produced, along with the vigorous companion of his toil, his oxen, in excellent condition, and all his agricultural implements of the best construction and in perfect order, and proudly told his defamers — "These, Romans, are my charms," "this only is the witchcraft I have used." Of the rotation of crops we have but meagre notices in Varro and Virgil; but sufficient to show that they were fully sensible of its importance. They seem, however, to have depended more on the alternate system of fallow and culture. With regard to manures, it is remarkable that they held in the highest estimation the dung of sea-birds, which is now in such high repute under the name of "guano." They were well aware of the value of draining; but it is not likely that they ever used tiles for this purpose. Their agricultural implements, however different in form or material, were, of course, similar in their objects to some of those at present in use. In the diagrams behind me, you see a representation of the Roman plough, as described by Virgil, and explained by Dickson; also copies of very interesting sculptures, from a Theban Tomb of the 18th dynasty, illustrating the gradual development of the plough drawn by oxen, from the hoe dragged by manual labour. The other implements in ordinary use were the harrow, the rake, the spade, the pickaxe, the fork, the pruning knife, the scythe, the reaping hook, threshing instruments, the fan, &c. It is a curious fact, that in Gaul they used a species of reaping machine which is described as "a large and hollow frame, armed with teeth, and supported on two wheels, which was driven through the standing corn, so that the ears were torn off and fell within the frame."

Although many other interesting topics connected with Roman agriculture solicit attention, yet time will not permit me to do more with regard to them, than to refer those who are desirous of further information on the subject, to the Latin treatises known under the title "*Rei Rusticæ Scriptores,*" to Dickson's comprehensive work on "the Husbandry of the Ancients," and especially to Daubeny's admirable "Lectures on Roman Husbandry," to which I am glad to have the opportunity of expressing my obligations. And now permit me in conclusion to institute a brief comparison between the condition of the farmers of ancient Rome, and that of many of those whom I now address. We can readily infer from the episodes which illuminate the Georgics of Virgil, what were the brightest and happiest features of rural life in his day,—what were those characteristics on the enjoyment or contemplation of which, the Roman farmer would dwell with the highest satisfaction and the greatest pride. I speak not now of the general traits of rural life to which the poet so gracefully adverts —the calm tranquility, the exemption from the disquietudes and vices that trouble the residents of cities, the innocent amusements, the simple plenty, and the other enjoyments with which you are so familiar, and which even the rigor of our winter never interrupts. I refer particularly to those points which the Roman would regard as characteristic and peculiar to his own circumstances.—The first of course, would be his nationality—that he was one of that dominant nation whose victorious legions had traversed the world in triumph—that he was one of that mighty people, the terror of whose name awed the most distant tribes, and invested each of its citizens with a dignity of such magic power, that at the mere mention of the talismanic words, "*Sum civis Romanus,*" "I am a Roman citizen," the scourge dropped from the hands of the executioner—the dungeon-doors flew open, and the prisoner was free. And have we nothing on which we can dwell with equal satisfaction as British subjects, as members of that glorious empire whose sway extends over land and water that Roman geography never dreamt of; over regions "where Rome's eagles never flew,"—an empire not more distinguished for deeds of arms by field and flood, than for the arts of Peace, with all the lovely and benign influences that follow in her train—an empire that has not handed over the Provinces which she has won by conquest, to be trodden down beneath the iron heel of military license, or torn to shreds by civil extortion, but who has blessed them with liberty, under a constitution, the transcript of her own, and freely sends her fleets and armies to her remotest dependencies, not to oppress but to defend, not to plunder but to protect. Another subject of pride to the Roman farmer was the liberality with which boon nature had enriched his highly favoured country, the fertility of its soil, its teeming produce, its "grazing flocks and lowing herds," its limpid streams, its extensive lakes, like miniature seas, with waves that mimicked old ocean's billows, and the other lovely features of the glorious landscape before him, to which art had added to so many noble cities and towns, exhibiting the successful results of human labour. The land, in which our lot has been cast, cannot indeed, compare with that "sweet garden of the world"; we have not the balmy air, or the blue skies of sunny Italy, bnt we have a salubrious climate, suitable to rear a hardy and vigorous population, such as can make the wilderness blossom as the rose, and our valleys laugh with corn. We have a fertile soil, filling our garners with produce, amply rewarding the labours of our husbandmen, and we have flocks and herds of breeds far superior to any that ever drank the waters of the Clitumnus; we have rivers, compared with which Eridanus, lord of Italian waters, is but a brook, and lakes, whose grand proportions exceed Como and Garda and Maggiore combined, and what is better still, this vast expanse of water, stretching some thousands of miles from the sea to the interior of the continent,

is used as the highway for our industrial activity and commercial enterprise. We have not, indeed, that most attractive feature, "streams gliding beneath ancient walls," for we are yet in the spring time of life, and we live not in recollections of the past, but in anticipations of the future.

"Be the Greek o'er annals poring,
Let the Roman mourn the past,
Like the Persian, morn-adoring,
Our glance is onward cast."

But if we have no old cities or towns, we have many in the fresh vigour of early existence, whilst others ever and anon are springing up where, but lately, were tangled forests or trackless swamps.

Another boast of the Roman farmer was, that such men as the Decii, Marii, Camilli, Scipios, and Cæsars, were his countrymen. There can be no doubt that in this respect we fall far below so high a standard, even though in our wrestlings with the forest and our advance in improvement, we have had men fully equal to the emergencies of the time, and whose names do honor to the brief annals of Canadian progress. But on this point we are at liberty to refer to the history of our parent isles; nor need we shrink from the comparison, when we call to mind the Marlboroughs, the Nelsons, the Wellingtons, the Havelocks, and the long line of heroes, who have for hundreds of years held up the red cross flag in victory. And here, be it remembered, I have been confined merely to military achievement, and have said nothing of those worthies, such as Rome never knew, that have done honor to their country, and conferred benefit on mankind by their efforts in behalf of social progress, the improvement of the condition of their fellows, and the advancement of industry and art, such as our Arkwrights, our Watts, our Howards, our Wilberforces, and our Broughams. The comparison might obviously be much extended, but instead of occupying more time by dilating on the advantages which we possess in consequence of the discoveries and inventions which have supplied our cottages with comforts unknown to the palaces of the olden time,—the wondrous facility which we enjoy of locomotion by land and water,—the marvellous speed with which the telegraph enables us to communicate with the most remote points,—the diffusion of knowledge by printing and the spread of education, and the blessings which are thereby conferred on the most sequestered resident of our backwoods, I shall merely advert in a closing remark to one, which in importance outweighs all others—I mean that knowledge of the world to come, which we through the mercy of God have, but of which their highest intellects were ignorant,—that blessed hope of everlasting life, to which the most subtle researches of their deepest thinkers could never reach,—that consolatory doctrine of the resurrection, which gilds the grave with hope, and brightens the dawn of eternity.

ANNUAL MEETING OF THE AGRICULTURAL ASSOCIATION.

The Annual Meeting of the Directors of the Agricultural Association was held on Friday, Oct. 1st., 1858, in the Committee Room, on the show ground, at 10 o'clock, A. M. Wm. Ferguson, Esq., Vice President, in the Chair.

Members of the Board of Agriculture present:—Messrs. E. W. Thomson, R L Denison, H. Ruttan, Asa A. Burnham, and G. Buckland.

Members of the Board of Arts and Manufactures:—Dr. Beatty, Messrs. W. H. Beresford, J. E. Pell, Patrick Freeland, and William Edwards.

The following delegates from county and electoral division Agricultural and Horticultural Societies answered to their names :—

Lambton—Walter Anderson.
Bruce— —— McPherson.
North Wellington—Samuel Proudfoot, James Ross.
South Wellington—Thomas Saunders, F. W. Stone.
Middlesex—William Balkwill.
London Horticultural Society—William Lawrason.
Norfolk—J. Kellum, O. Blake.
Welland—John Kerr.
Lincoln—W. N. Hutt, N. H. Pawley, —— Clarke.
Niagara—E. C. Campbell, H. J. J. Brown.
Niagara Horticultural Society—C. O. Benedict.
East Brant—H. J. Moyle.
West Brant—John Tennant.
North Wentworth—Thomas Stock.
South Wentworth—J. Rymal, Henry Lukes.
City of Hamilton—H. Lawry, Captain Nichols.
North Oxford—John Barwick, —— Grey.
South Oxford—James Scarff, George Wisener.
South Waterloo—Daniel Tye.
Perth—John Ballantyne.
North Simcoe—W. Raikes.
Halton—Thomas Bowes.
Peel—John Tilt, Andrew Starratt.
East York—J. P. Wheler, George Miller.
West York—E. Musson, E. C. Fisher.
City of Toronto—Wm. McDougall, M.P.P.
City of Toronto Horticultural Society—Professor Buckland.
South Ontario—Ebenezer Birrell.
Victoria—John Gibb.
East Durham—John Foott.
West Durham—Matthew Joness, R. Booth.
East Northumberland—G. S. Burrill.
West Northumberland—John Wade.
Peterborough—John Walton.
North Hastings—H. Ostram, R. McCammon.
South Hastings—Elijah Ketcheson, B. Flint.
Prince Edward— — Stinson.
Lennox—J. Hawley, E. Mallory.
Addington—Peter Davy.
Frontenac—Edward Jackson, John Flanagan.
City of Kingston—Sheriff Corbett, Dr. Barker.
Kingston Hortieultural Society—Thomas Drummond, John Duff.
North Lanark—John Menzies, Robert Young.
North Leeds—G. Leehy.
South Leeds—Dr. Richmond, W. Stark.
Brockville—Henry Freeland, James Reynolds.
Glengarry—J. Stewart, T. McDonald.
Russell—Archibald Petrie.

The minutes of last Annual Meeting were read and confirmed.

It was then moved by Dr. Beatty, seconded by Mr. Asa A. Burnham, and

Resolved,—That this Association deeply regrets that the state of health of their esteemed President has deprived the Association of the benefit of his services during the most important part of the year, and also that the Directors thereof deeply sympathise with the President on his continued affliction, and would fervently pray that the Almighty Disposer of events may be pleased to restore to health and prolong the life of one so useful to the country.

Notices of motion from last Annual Meeting were read. The President decided that unfinished business and notices of motion be first taken up, after the election of officers for the ensuing year.

Moved by Mr. E. W. Thomson, seconded by Mr. Flanagan, and

Resolved,—That Wm. Ferguson, Esq. be elected President for the ensuing year.

Moved by Mr. H. Ruttan, seconded by Mr. O. Blake, and

Resolved,—That John Wade, Esq., be elected 1st Vice President for the ensuing year.

Moved by Dr. E. J. Barker, seconded by Mr. Wade, that W. McDougall, Esq., M.P.P., be elected 2nd Vice President for the ensuing year.

Moved by Mr. Pell, seconded by Mr. Booth, that Dr. Beatty be elected 2nd Vice President for the ensuing year.

Moved by Mr. Grey, seconded by Mr. Musson, that John Barwick, Esq., be elected 2nd Vice President for the ensuing year.

Moved by Mr. Stock, seconded by Mr. Lukes, that F. W. Stone, Esq., be elected 2nd Vice President for the ensuing year.

The Resolutions were submitted to the meeting in the order in which they were moved, when the President declared John Barwick, Esq., of Woodstock, elected 2nd Vice President of the Association.

Moved by Mr. E. Musson, seconded by Mr. Grey, and

Resolved,—That R. L. Denison, Esq., be elected Treasurer for the ensuing year.

Moved by Mr. John Barwick, seconded by Mr. James Scarff,

That it is expedient that three permanent places be selected for the holding of the exhibition of the Association, viz.: Toronto, Kingston, and London, provided the requisite erections be provided thereat.

Moved in amendment by Mr. E. W. Thomson, seconded by Mr. Petrie, and

Resolved,—That it is not in the power of this Board to fix the location of the exhibition for the year 1860, or any year beyond next year; but in the opinion of the Directors it should not be in future held at any place where there are not permanent buildings erected, or ample assurance given that they will be erected in time for the meeting, and also that ample accommodation will be afforded for the public.

Moved by Mr. E. W. Thomson, seconded by Mr. J. P. Wheler, and

Resolved,—That the existing By-laws of the Association be taken to govern this Association, until a new code be adopted, and that a Committee be appointed to frame a code of by-laws, to be published in the *Agriculturist*, at least three months previous to next annual meeting, that the Directors may then be prepared to vote upon them, and that Messrs. W. McDougall, J. E. Pell, Patrick Freeland, T. C. Street, and Judge Campbell, be such Committee to act with the Board of Agriculture.

The following letter was read from the Mayor of the City of Toronto:—

"Sir,—Several parties having expressed to me their satisfaction at the Exhibition Buildings and Grounds, and the accommodation afforded during the present show, with the hope that the future exhibitions might take place in Toronto, until equal accommodations are offered in towns to the eastward and westward, I venture to convey to you my conviction, that if it is decided that the Provincial Exhibition shall again take place in Toronto next year, the Corporation will furnish the means necessary, not only to ornament and improve the grounds, but to extend the building itself, so as to afford a satisfactory exhibition of machinery in motion, as well as to provide the most ample and satisfactory accommodation for housing the stock before and during the Exhibition, and for a supply of all that is necessary while they remain on the ground. Stock suffer exceedingly from insufficient housing, and I feel that the Association may rely upon everything being done by the Corporation of this city to satisfy all parties coming to the Exhibition, if it is decided that Toronto shall be fixed upon for next year.

"W. H. BOULTON,
Mayor."

The Mayor of Kingston, and the other Kingston delegates, gave their assurance that ample funds would be furnished by that city for the holding of the next Exhibition, should Kingston be the place selected.

Moved by Mr. Billa Flint, seconded by Mr. H. Ruttan, that the next annual show be held in the city of Kingston.

Moved by Mr. W. H. Nichols, seconded by Mr. J. Rymal, that the next annual show be held in the city of Hamilton.

Moved by Mr. Tilt, seconded by Mr. Starratt, that the next annual show be held at the city of Toronto.

The resolutions were then submitted to the meeting, commencing with the last, and the vote being taken, stood—for Toronto, 21 votes; for Hamilton, 19 votes; and for Kingston, 32 votes;—no negative vote being taken.

The President declared the resolution in favor of Kingston carried, and that that city be the next place for holding the exhibition of the Association.

Moved by Dr. Barker, seconded by Mr. Tilt, and

Resolved,—That the Board of Agriculture do appoint the Local Committee for the ensuing exhibition.

Moved by the Mayor of Kingston, seconded by Mr. Sheriff Corbett, and

Resolved,—That the thanks of this Association be given to the Mayor and Corporation of the City of Toronto, for their munificent grant towards the erection of so commodious, capacious and elegant an Exhibition Building.

Moved by Dr. Beatty, seconded by Mr. J. B. Askin, and

Resolved,—That the thanks of this Association be given to the County Council of York and Peel for their liberal donation of $4000, towards the erection of the Exhibition Buildings, and the arrangements of this show.

Moved by Mr. Tilt, seconded by Mr. Flanagan, and

Resolved,—That the thanks of this Association be given to the Ladies, for their elegant and attractive contributions to the Exhibition.

Moved by Mr. A. A. Burnham, seconded by Mr. J. Stewart, and

Resolved,—That the thanks of the Association be given to the Judges for their important services on this occasion.

Moved by Dr. Beatty, seconded by Mr. Sheriff Corbett, and

Resolved,—That the thanks of the Association be given to the Local Committee for the manner in which they have performed their duties in connection with the present exhibition.

Moved by Mr. Flanagan, seconded by Mr. E. W. Thomson, and

Resolved,—That the thanks of the Association be given to the Canada Company for their donation of $100 as a prize for wheat, and of $40, as prizes for hemp and flax at the present Exhibition.

Moved by Mr. John Menzies, seconded by Mr. Flanagan, and

Resolved,—That the thanks of the Association be given to the President for the manner in which he has performed his duties during the past year.

Moved by Mr. Sheriff Corbett, seconded by Mr. Flanagan, and

Resolved,—That this meeting do now adjourn, to meet again in Kingston, at the time given for holding the show next year.

The meeting then adjourned.

ANNUAL ADDRESS,

DELIVERED BY THE FIRST VICE-PRESIDENT OF THE AGRICULTURAL ASSOCIATION, WM. FERGUSON, ESQ., AT TORONTO, OCTOBER 1st, 1858.

The continued ill-health of the worthy President of the Provincial Agricultural Association, D. B. Stevenson, Esq., which is sincerely to be deplored, renders him unable to assume the duties of his office. Our regrets are increased at the loss the Asssciation sustains in his absence from the post of honour which his long experience so eminently qualified him to fill, and most particularly do I feel that loss; knowing that it devolves upon me, incompetent as I am, to occupy his place, or suitably to address this respectable assembly on the present occasion.

It must be truly gratifying to every one who takes an interest in the affairs of the Provincial Agricultural Association, only a few years in existence, to witness the satisfactory results flowing from the labours of its managers, in promoting an institution which has been productive of so much general good to all classes of the community. And this, the thirteenth Annual Exhibition, will, it is believed, from its beneficial and happy results, compare favourably with, if it does not excel any that has preceded it.

When we reflect upon the many and varied benefits accruing to the country generally, from the indefatigable exertions of the Provincial Agricultural Association, the credit due to the gentlemen who control its management, cannot be over-rated, nor the advantages to every class of society over-estimated.

And while we cheerfully accord the meed of praise so justly earned by the members of the Board of Agriculture for all their excellent arrangements, it is

also a pleasing duty to acknowledge the valuable services so promptly and efficiently rendered by several ladies and gentlemen not directly connected with the Association, who have taken an active part in bringing the present Exhibition to so pleasing a result.

To the citizens of Toronto and all those contributing to the erection of this magnificent structure, the highest praise is due, as the ample dimensions and appropriate arrangements of their Crystal Palace, have added much to the convenience and pleasure experienced by visitors and exhibitors, as well as giving protection to various valuable articles on exhibition.

And it is to be hoped that the example so nobly set before us, in providing such excellent accommodation for the vast throng of people assembled here, will be followed by every other place at which the Annual Exhibition may in future be held.

While science is making rapid progress throughout the civilized world, it is pleasing to see that Canada has kept her place in the general improvement, and this Exhibition displays an advancement not only in our improved breeds of domestic animals of every description, but also in Arts and Manufactures, far exceeding our most sanguine expectations.

A comparison of the number of entries, and the amount of prizes at the present Exhibition, with that of the first in 1846 and subsequent years, is sufficient evidence of the great progress the Association has made.

Notwithstanding the late temporary depression in business, proceeding from causes over which we had no control—and though the commerce in this country, as well as that of a great part of Europe and America, during a portion of last year, has to a certain extent been affected—yet Canada has cause to be proud of the soundness of her commercial position, during those trying times, which so severely tested the solvency of many of the greatest commercial and monetary institutions of both continents—and through which those of this Province acquitted themselves so creditably, without even for a moment resorting to the means which others were compelled to adopt in that emergency.

Although our great staple of export, the wheat crop, has not turned out so favourably this season as heretofore, yet the country is now comparatively prosperous, and owes much of that prosperity to our improved agricultural knowledge, and mechanical skill. And it is on the persevering industry, and properly directed energies, of those engaged in agricultural and mechanical pursuits, aided by the fostering care which the Legislature has enabled the Agricultural Association to exercise, that the future prosperity of the country will chiefly depend.

It is within the recollection of many present, when the old-fashioned one handled plough, with wooden mould boards, and with barely a few pounds of iron wrought into the form of a ploughshare, was in general use; and almost all other implements were of a similar clumsy and rude construction. In this infant state of the country everything connected with its agriculture, arts, and manufactures was equally imperfect. Our navigation was merely such in name—the usual time occupied in steaming from Kingston to Toronto (then Little York), was nearly as many days as it now takes hours; and the average trips from Montreal to Kingston of the old-fashioned Batteaux and Durham boats, by which the commerce of the country at that time was carried on, occupied a couple of weeks in accomplising what now takes less than a day for our noble steamers to effect; carrying as they do, cargoes which would require whole fleets of such primitive craft to transport.

We can now look with proud satisfaction upon the gigantic strides which the country has made, and is continuing to make, in the improvement of its agriculture, manufactures and commerce; and its ultimate tendency to an exalted position rarely equalled by the older European countries.

Instead of the rude implements and craft of former days, we can now avail ourselves of all the improvements that well-directed industry has produced, or that scientific knowledge and mechanical skill can impart, on every matter connected with our solid interests or permanent advancement.

So astonishing are the improvements with respect to agricultural implements, that our plough, the first and most important implement in all farming operations, (and which in its present improved state may be said to be perfection itself,) is doomed ere long to be superseded by those invaluable productions of modern invention the steam-plough and steam digger; the power and advantage of which, as labour-saving machines, particularly in open and extensive prairies, cannot at the present be fairly estimated.

The late trial of these new implements at Chester, England, under the auspices of the Royal Agricultural Society, have established the fact of their capability with the aid of only two men, thoroughly to plough and pulverise from six to ten acres per day, to a depth of six or more inches; thereby relieving the horse from an immense amount of exhausting labour, giving the agriculturist more perfect control over his heavy and stubborn clay soils, and placing him more at liberty to select the most suitable seasons for cultivating them.

While we admire the progress of the mother country, it is pleasing to observe the genius of Canada keeping pace with the improving spirit of the age.

All the necessary machinery required for properly effecting the various operations of the farm, the workshop and the factory, has alike undergone such valuable improvements; and yet every successive year, these Annual Exhibitions bring forth new and better implements in every department, calculated to benefit, delight, and astonish us.

While we cheerfully accord the praise and admiration due to the skill and ingenuity of the British artisan, in bringing farming and other implements to such a state of perfection as has been evinced at the Chester and other Exhibitions, it would be doing an injustice to the Canadian mechanics, manufacturers and inventors, to pass unnoticed the various useful inventions, and excellent productions of their establishments; many of which when brought into competition with those of the older countries in Europe, not only obtained the highest prizes in their respective classes, but also gained unfading laurels for our Canadian manufactures, at the world-renowned Exhibitions of London and Paris.

Placed then as are our artisans and manufacturers in this honorable position, it is becoming in us to offer hearty congratulations to all those through whose indomitable perseverance and consummate skill, the last and crowning triumph of genius has been achieved—that of successfully laying across old Atlantic's "dark unfathomed caves," that Telegraph Cable, by which the kindred nations of both continents shall, it is hoped, be inseparably and forever united in peaceful bonds of mutual friendship and prosperity.

In this recognised unity, tying as it were the old and new worlds, Canada must always feel a deep interest, and in its commercial relations will be in a position to reap great advantages. When our Trunk Railroad is completed, with unbroken connection from the sea board to the far west, and the prospect not even now far distant, of seeing it form part of that iron band which shall connect the Atlantic and Pacific Oceans, crossing as it is likely to do, the new British colonies soon to be organised, thereby completing a great commercial highway for the nations of the world, over which shall be transported the productions of both hemispheres, who can then venture to set bounds to the prosperity or limit the future destiny of these noble Provinces, or predict the extent of greatness to which they shall eventually arrive. Even already has a prosperous steam communication been established on a permanent footing between

our sea ports and those of England and Ireland, by which the ocean passage has been so much shortened as eventually to secure for us that share of the carrying business which will build up our shipping trade and enrich the country.

Witnessing the general progress around us in all the various departments of science, arts, and manufactures, should not the agriculturist whose field of enterprise is so extensive, endeavor to keep pace with the times, in adopting those improvements of which his farming operations are susceptible, with a due regard to economical management.

Now, that he has such frequent opportunities afforded him, of obtaining all necessary information on every subject connected with his calling, through the means of well authenticated experiments and reliable treatises, essays, periodicals and agricultural journals—foremost among which stands that published by the Agricultural Association—treating as they do upon every subject in which he is interested, and by which he may improve both his mind and his means; it is to be hoped that he will not permit himself to be outstripped in the onward march and general improvement of the times.

Whilst I feel it might be considered presumption in me to fancy myself capable of enlightening this large body of intelligent farmers, mechanics, manufacturers and others, assembled on the very interesting occasion of our Annual Exhibition, many of whom, from their experience and practical knowledge are much better qualified to speak and write on every subject connected with their respective avocations, yet I must assert, that my desire to see the general advancement of the country, is equally heartfelt with those of my fellow laborers; and with unfeigned regard for the farming interests, I feel bound to reiterate what has often, and perhaps too truly been asserted, that the farmers as a class are less disposed to guard their own rights, or to adopt new and improved systems, however practical or advantageous to their interests than almost any other class of the community.

Is it because the business of farming in its variety of branches, offers a more limited field of research after knowledge, or less hope of gain or of honorable position in society with that of other professions? Of the reverse of this we have examples innumerable, where distinction, wealth and honour have been the reward of many whose earliest and perhaps happiest days were devoted to the pursuits of the farm, and the study of nature in all its beauties of animal and vegetable life.

Blest with general good health, from the nature of his avocations requiring the operations of the farm to be conducted in the open air, sharing in no stinted measure the bounties which the Giver of All Good bestows as the reward of honest labour—the husbandman generally displays too often an easy contentedness in matters of state polity with reference to the interests of his own class, almost bordering on indifference. And although it may not be desirable that the farmer should, to the prejudice of his business, turn a mere politician, yet surely there is broad common ground upon which the agriculturists of every shade of politics, could unite in endeavoring to better themselves, and protect their interests as a class, without infringing upon the rights or privileges of others.

While the professional, commercial, manufacturing and mechanical portions of the community, often in their respective spheres, with praiseworthy efforts unite for the promotion of their mutual interests, no good reason can be shown why the farming portion of our people, who are really among the chief producers of our country's wealth, should, through diffidence or apathy, allow their interests to be overlooked or slightingly treated in the councils of the country.

It is true that the wisdom of our Legislature has been occasionally evoked in

favour of the farming interests, and that good has resulted in the fostering care of the Government over those interests; but greater good would be achieved, did the farmers send more of their own class to represent them in the Legislature; men who would have for their object the general advancement of the country, instead of wasting time in wrangling over the abstruse and unintelligible political and party questions of the day.

At the same time that the agriculturist would set forth his claims to fostering protection, he should by no means seek to deprive any other class of the community of their just rights—for all have rights. The interests of commerce, arts, and manufactures, are of equal importance, and inseparably connected with that of agriculture; so, that if commerce is paralyzed, agriculture, arts, and manufactures are equally affected; if not in protested obligations, it will be in the languor and stagnation which take place in the markets and workshops. And it may be truly said, that if commerce is the handmaid of agriculture, so are arts and manufactures kindred spirits and indispensible to both. And if the agriculturists may be said to be particularly dependant upon any one of these branches of human industry more than another, it is to the artizan and the manufacturer. To them he must lookfor a supply of implements and machinery to carry on his farming operations, in exchange for a portion of the surplus produce of his farm, and by which means their mutual interests are thus promoted.

These reflections naturally lead to the consideration of the propriety of *creating a home market*, for the surplus of the field, the forest and the mine, in their many ramifications—and what object is fraught with deeper interest to the whole community? The sustaining power of Great Britain, whose commerce encircles the globe, rests on her multifarious manufactures, which from their cheapness find a market in every habitable portion of the earth's surface, defying almost any successful competition.

This ascendency has been attained through cheapness of labour and a long period of protection to the produce of her fields and workshops, until the perfection of her manufacturing machinery, enabled her to compete most successfully with the manufactures of every other country, and finally to adopt the principle of buying in the cheapest and selling in the dearest market.

The same policy adopted by the New England States, has also placed her manufactures, in many instances, on a par with older countries, and not only has made a home market for the produce of their farms, but has enabled them to take in exchange for their manufactured articles, a large amount of the surplus produce of the neighbouring States and Canada. Thus, from a wise course of long continued protection to their native manufactures, their workshops and factories have now attained such a degree of superiority that they no longer require protective aid. And as a proof of the extent of their manufactures, a recently published statistical paper shows that every eighth man in Massachusetts is a shoemaker; and it is asserted that one factory established for the manufacture of watches alone, turns out twenty thousand watches, both better time-keepers, and of more durable structure than any imported, and at one half their cost.

Seeing the benefits of the protective system, and possessing as we do, inexhaustible water powers, equal to, if not superior, to any to be found elsewhere, why should not the fostering care of our Legislature be more earnestly directed to a subject so deeply affecting the prosperity of the whole community; and that encouragement given to native manufactures, which would tend eventually to build them up, and thereby create a home market for our farm produce.

When the far-seeing political economist inquires into the cause of a nation's commercial greatness, he traces it to its export and import trade; and England's commanding monetary position, (and money is power), will be found to consist

in the immense excess of her exports over her imports, thereby clearly showing the balance of trade to be in her favour; which excess is paid for in the bullion of other countries. This eminent and commanding position she is enabled to maintain through the perfection of machinery making her renowned factories the workshops of the world; enabling her to supply the warehouses of our merchants with not only the various articles of every day use, but the finer articles and more costly luxuries for those who can afford to purchase them, aided as she is by her immense commercial navy, to carry those productions to the most distant markets of the world.

It may be alledged that this country is not sufficiently advanced, to require or maintain manufacturing on an extensive scale; and that the reclaiming of our forests, and a better cultivation of our cleared lands, should for many years to come be our chief object. This course might be found to answer, if the whole imigration to this country consisted of farming people; but as it does not, and as a very large number of those annually arriving at our ports, consist of artizans in the various mechanical branches, from the principal manufacturing towns, and places of the old world, why should the suicidal course be persisted in, of encouraging or necessitating them to take to farming as the mode of earning their future living, or in the event of their not doing so, oblige them for the want of employment in their own line of business, to seek it in the neighbouring republic, where with their skill and industry they contribute to build up the manufactures of foreign competitors at the expense of our own, and at the same time essentially advance the farming interests of that country by increasing the home consumption of the products of the farm.

Thousands of the most skilful artizans and workmen from the Old World, are year after year following their friends, and seeking homes on this side of the Atlantic; and for want of suitable employment for them under our national flag, they as regularly leave our shores for the United States, where, with the wealth of their skill and labour, they enrich that country and make happy homes for themselves.

As a proof of what Canada has done with the little encouragement which the Legislature has afforded her manufactures, we have but to examine within the limits of this Exhibition ground, and we perceive an excellence displayed in almost every department of Arts and Manufactures, in many instances not excelled by the older countries of Europe and America.

And to what eminence our manufactures might arrive if properly encouraged, seeing the extensiveness of our forests, and the richness and profusion of our mineral productions, not even the most sanguine can predict. Notwithstanding the discouraging circumstances under which some of our infant manufactures are labouring against foreign importations, yet many are still successfully working, not only against want of proper protection, but also against the absence of that patronage to which home manufactures have so just a claim.

While we view the very excellent, highly finished and powerful locomotives on exhibition here, the production of the Manufacturing Establishment of that enterprising gentleman, James Morton, Esq., Kingston, although it produces in our breasts thrilling emotions of pleasure in witnessing the telling superiority of our infant manufactures in this branch of art, yet here again it is painful to observe, that that encouragement is not given to this important branch of our Canadian Manufactures necessary to establish them permanently, and which would have the effect not only of attracting hundreds of superior workmen from other parts, who would lay out the chief part of their earnings among us, but also of increasing the circulating medium of the Province, by tens of thousands of pounds, now sent to foreign countries, for what are generally said to be inferior articles.

My limited time will not admit of enumerating the many excellent productions of our workshops, in the various branches of Manufactures in which they are engaged; but it may not be amiss generally to notice, that many articles of importance in the trade of the country, (specimens of which are here exhibited,) which can be produced to advantage and profit, both to the manufacturer and consumer, when ready sales can be effected, have been overlooked, and inferior articles from other nations substituted.

It is to be hoped, however, that as our manufactured articles continue to advance in excellence, as they are now doing, and their merits become more generally known, their durability and substantial construction will ensure for them that preference in the home market which they deserve.

In addition to the many articles of common use which might with great advantage be grown and manufactured here, such as Hemp and Tobacco, that of Flax demands particular attention, and would doubtless with the necessary skill and management applied to its proper cultivation, be productive of much profit and real benefit, not only to those engaged in its cultivation, but also to those who might undertake its manufacture.

It is known that the flax plant is indigenous to several parts of this continent; and with proper cultivation will grow to perfection in almost every part of Canada; and when manufactured produces a fabric which could with advantage be substituted for cotton goods in a variety of articles of daily domestic use. The very excellent illustrated lecture, given by Professor Wilson some years ago at Montreal, has passed over almost unheeded; and it is much to be regretted that so little advantage has been taken of the valuable information which he so kindly and freely imparted.

It will be remembered that that gentleman was sent by Her Majesty the Queen, on behalf of England, to the opening of the United States National Exposition of Arts and Manufactures at the Crystal Palace, New York; and that he afterwards honoured us by visiting the Lower Canada Provincial Agricultural Show of 1853; on which occasion he delivered a scientific lecture on the culture, and also the manufacture of flax from the raw material of straw; and from the intelligent and lucid manner in which the useful properties of the flax plant were described, and the nutritious and fattening qualities contained in the seed and albumen of the plant for feeding stock explained; as also the value it possesses as an article of commerce, and its general usefulness in the many ways in which it can be applied for domestic purposes, it excites surprise that his suggestions have not since been acted upon.

If the expensiveness of the improved machinery required for dressing the raw material and fitting it for exportation or manufacture, has been the cause of neglecting its cultivation, it is to be hoped that the difficulty will be surmounted by the Board of Agriculture taking the matter into their hands, and applying if necessary, to the Legislature for aid to encourage the growth and manufacture of a staple, that would produce such permanent advantages to the country. And what fitter time, now that the culture of wheat is becoming more and more uncertain, to introduce in its stead, at least to a limited extent, that which would give a much more certain and profitable return, and confer lasting benefit to the agriculturist and the manufacturer, as it is confidently believed that the seed of the flax alone, exceeds in value that of the wheat crop acre for acre, without taking into account the fibre, which is the most valuable part.

When we examine the trade and customs returns of the Province published by the Government, we find that cotton goods in a variety of forms are annually introduced into the country; not only from England, but also from the United States, in such quantities, and of so great an amount in value, as to cause astonishment at our supineness in continuing to encourage a foreign material which

draws so heavily upon the industrial resources of the country—the annual importations exceeding five millions of dollars. By substituting for cotton, where practicable, a fabric of our own manufacture composed of flax, to supply us in the many uses to which cotton is applied, a great portion of this very large sum of money would be annually saved to the country, and a new branch of industry created among our people in its manufacture, by means of which a new market would be established for a considerable amount of our surplus provisions, and also profitable employment secured for an increased and thriving population.

Of the importance of the article of flax to the manufacturer as well as the agriculturist, Professor Wilson in his able lecture alluded to, showed that at that period "England had at work 168,000 spindles in its manufactures, while the United States had but 50,000," but were, as he remarked, "rapidly increasing." And he adds, "that out of 20,000,000 yards of linen annually manufactured in England, 8,000,000 had been sent to the American continent," showing thereby the importance to us of encouraging the growth and manufacture of this most useful material. And the learned gentleman, in showing the large amount of foreign raw flax used, further says, "that for the production of the quantity of raw material annually imported into England, it requires the growth of 800,000 acre of land.

It is ascertained that the flax plant will grow to perfection where cereal crops can be cultivated; and with even less exhausting effects to the soil than that of wheat; but the apparent difficulty to the grower is the want of the necessary modern machinery for producing the putrefactive fermentation, or rotting process; which might be of such construction as to be capable of removal from place to place, as most of our threshing machines are, and by which means the raw material could be cheaply prepared for the manufacturer.

Should its manufacture into the finer and more costly articles of commerce, not be attainable at present, for want of enterprising capitalists among us, or through a deficiency of labour, by proper encouragement given to flax culture for export only—now that we have ocean steamers coming to our very doors—a new opening for the enterprize of our people presents itself, which would be found more remunerative than the growing of wheat under present circumstances; and its adaptability for exportation when merely rough dressed or scutched, and being much less liable to injury in its transport across the seas than cereal crops, gives it a decided advantage for ocean transit.

In estimating the comparative advantages over the many other productions of the field, that those obtain who are engaged in the cultivation of flax as a staple, many instances might be adduced, but the following statement from the "Irish Farmers' and Gardeners' Magazine," shows the fact to be indisputable.

A Mr. Woltenhohen sowed in the month of April fifteen Irish acres with Dutch flax seed. These fifteen acres produced 345 bushels of excellent seed, or 23 bushels per acre, worth 7s. 6d. per bushel—£129 7s. 6d.

He had of scutched flax, 6 tons 11 cwt. 1 qr., or 1,050 stones of 14lb. each, worth 7s 6d.....	£393	15	0
Making in all.....	£522	2	6
Or per acre.....	£34	7	6

It may not be out of place to mention here that Ulster, the most northerly of the four provinces of Ireland, still maintains by its flax and linen trade a population exceeding two millions, notwithstanding the very large numbers who have emigrated from that section of the country.

Among the many causes why the Canadian farmer could make not only the growth of flax, but also its manufacture into linen profitable, we have the certainty of a four months' winter, during which period very little out-door occupation engages the time of the farmer and his family. This season of the year could be profitably employed in preparing the raw material for the manufacturer; and where it might be deemed advisable to use the handloom at home, what more fitting season for such employment than our dreary winter's days and evenings, where by the comfortable hearth the busy hum of the spinning-wheel, and the lively motion of the weaver's shuttle, would, besides the pecuniary advantages it would bring, give life and animation to that season of the year when the out-door world presents but a deary sameness, and the vegetable kingdom seems touched with the finger of death.

If in her future destiny, Canada expects to succeed in maintaining a self-sustaining position, when brought into competition with those of the extensive wheat growing prairie lands of the Western regions, aided as they soon will be, with all the modern appliances of steam ploughs now being so effectually used in England (and certainly well adapted to the prairie country), she must eventually look to the resources which her magnificent water-powers present for manufacturing purposes, and bring them into use as auxiliaries towards maintaining her progress and position among the surrounding States and Colonies.

And what fitter period for exercising man's best energies, now that science has opened up so many avenues for the display of his skill and enterprise; and the blessings of peace restored not only to civilized Europe, but also to those eastern countries whose idolatry and intolerant fanaticism and bigotry, had well nigh trampled down true Liberty and even Religion itself. The advantage gained to commerce by throwing open to trade the ports of the celestial Empire, will be felt throughout the civilized world, opening up as it does, new fields for the enterprizes of the pioneers of civilization—the trader and missionary. And while we give to Britain and her ally the full credit of being the means of accomplishing so great a good to the whole human family, let us not forget that to the Great Disposer of events we are indebted for all the blessings we enjoy.

THE EXHIBITION.

The following is a brief notice of the display in the various departments of the Exhibition :—

BLOOD HORSES.—Sixteen animals entered for competition, being a few more than the previous year. No newly imported animals or any deserving special mention.

AGRICULTURAL HORSES.—Two hundred and thirty entries, being less than the previous year at Brantford. A very good display on the whole, but perhaps not superior to former years. None exhibited imported since previous exhibition. In this class, which includes the roadster stallion, and carriage and saddle horses, there seemed a deficiency of the very superior roadster, combining symmetry of form and moderate size, with muscle and activity, the most generally useful and valuable class of horse for the country.

HEAVY DRAUGHT HORSES.—Fifty-five entries in this class, being the first year in which it has been made an entirely distinct class. Many of the animals upon the ground were exceedingly good of their kind, being the most of them

either imported from England and Scotland within a comparatively recent period, from the heavy draught breeds there, or the produce of such imported stock. The majority of them however, had probably been previously exhibited. Amongst the new animals, were two two-year old stallions imported from Britain since the last exhibition, one imported by Messrs. Ashby of Pickering, which took the third prize, and the other by Mr. Wm. Davis, of York Township; also a yearling colt, imported since the last exhibition by Mr. Joseph Thompson, of Pickering, which took the first prize.

DURHAM CATTLE.—One hundred and thirty-five entries, being eight more than the previous year. The same general observation will apply as to preceding classes: the show of animals was exceedingly good, and highly creditable to the exhibitors and to the country, but, with the exception of the calves and some of the yearlings, the majority had been previously exhibited. A considerable accession to the stock of the country, in the shape of new importations, had lately been looked for almost as a matter of course, at each annual exhibition, but the monetary depression of the preceding year had so far affected the farmers and breeders that they were unable or unwilling to incur the heavy expense and risk of importing valuable stock to any great extent, as formerly. The only animals shown, imported since the previous exhibition, were a ten months old bull, imported from Scotland by Mr. J. P. Wheler, of Scarboro, which did not take a prize, and a cow, imported by Mr. John Gill, of Toronto Township, from England, which took the second prize.

DEVONS.—One hundred and two entries, being eleven more than the previous year. A very fine display of stock, but the majority of which had been at previous shows. No new importations. The new stock shown were nearly all the produce of animals which had been at former exhibitions.

HEREFORDS.—Only eight entered, and all of which, or their immediate relations, had been formerly exhibited. None of superior excellence.

AYRSHIRES.—Forty-seven entries, being double the number at the exhibition of 1857. Some very good animals, but none calling for special remark.

GALLOWAYS.—Forty-five animals entered for competition, the most of them either animals formerly exhibited or their produce. This breed of cattle is attracting a considerable amount of attention, to their compact and well shaped form, and hardy and useful qualities.

GRADES.—Eighty-eight entries, being twenty-eight more than in 1857. There was a very good display in this class, some of the animals being very high grade Durhams, almost entitled to compete as thoroughbred.

FAT AND WORKING CATTLE.—Thirty-three entries, three less than at the Brantford exhibition. Many of the animals were of fine quality, exhibiting careful and judicious feeding.

LEICESTER SHEEP.—One hundred and eighty-eight entries, being not quite so many as the previous year. The reputation of Upper Canada for her superior flocks of Leicester sheep, heretofore most generally the favorite variety, has long been well established, and this year did not apparently exhibit any falling off in the quality of the specimens exhibited. As in cattle, however, there were only two or three newly imported animals.

COTSWOLDS.—Thirty-nine entries, a slight falling off in number from the previous show. There were some very fine specimens of this breed, which appears to be gaining in popular favor here, as in England.

CHEVIOT SHEEP.—Fifteen entries, the same within one as at the Exhibition of 1857, and the exhibitors were also the same with one exception.

LONG WOOLLED SHEEP, NOT PURE LEICESTERS—COTSWOLDS, OR CHEVIOTS.—Sixty-eight entries, being a small increase over 1857. There were some very fine bodied sheep exhibited in this class, the majority being crosses from the Leicester.

SOUTHDOWNS.—Forty-nine entries; only about half the number at Brantford in 1857, and half a dozen more than at Kingston in 1856. The exhibiters were the same as on former occasions, with two or three exceptions. There were some very good specimens on show, but no new importations. This excellent breed of sheep seems scarcely to be making the progress in public favor to which its good qualities entitle it.

MERINOS AND SAXONS.—Twenty-nine entries, being within one of the same as the previous year. Mr. Sylvester Farrel, of St. Thomas, entered the field against Mr. Rymal of Barton, and Mr. Choate, of Hope, who had heretofore been the chief exhibiters. He had one ram imported from the United States since the previous exhibition, besides others of his own breeding.

FAT SHEEP.—Nineteen entries, four less than in 1857. The prizes went to nearly the same parties as the previous year.

PIGS.—Thirty-four entries in the large, and sixty-six in the small breeds, being a slight increase in number over the two preceding years. The Judges recommended a more special designation of the breeds of pigs, on a future occasion, in the prize list, in the same manner as has been the case with the breeds of sheep and cattle. On this occasion the majority of the animals exhibited in the two classes were of the Yorkshire, Berkshire, Suffolk, Essex and Chinese breeds, and were of fair average quality. There were one or two new importations from the United States.

POULTRY.—Two hundred and forty-seven entries, being a few over the number at Brantford, and about the same as at Kingston in 1856. Perhaps a larger number of the specimens entered came to the ground than on any former occasion, a large proportion being from London, Hamilton and Kingston, from the yards of well known breeders. The display in this department of the exhibition was very interesting.

FOREIGN STOCK.—Our foreign friends are now almost entirely neglecting our exhibitions, so far as competition is concerned, there being only three animals exhibited in this class, and about the same number at the two preceding shows, though we used to have a pretty liberal sprinkling of competitors from a distance.

GRAIN, SEEDS, &c.—Four hundred and twenty-seven entries, being one hundred more than in 1857, and twenty less than in 1856. The display in this department, notwithstanding the somewhat unfavourable season, and that wheat had suffered more or less from winter-killing, fly and rust, was very good, much better than had been expected.

ROOTS.—Two hundred and ninety-two entries, a considerably larger number than on former occasions, and the specimens, generally speaking, very fine.

FRUIT.—Three hundred and twenty seven entries, being a score or two more than at preceding shows. The display of apples, pears, and plums was large and attractive; though peaches were not numerous the good quality of those exhibited attested the practicability of their more common cultivation in the country, if sufficient pains were taken. Of grapes there were numerous specimens, and it was gratifying to find that the culture of this tempting fruit is receiving increased attention. Some specimens from Port Dalhousie were so remarkably fine that the judges as well as many of the spectators were suspicious

of the fact of their having been grown in the open air. Mr. Read, the exhibitor, however, gave satisfactory evidence on this point. Fruit and the Horticultural department of the exhibition generally, was very pleasing and attractive.

GARDEN VEGETABLES.—Four hundred and forty-seven entries, a large increase in number over preceding shows. A very good show for the season.

PLANTS AND FLOWERS.—One hundred and twelve entries. Although the number of competitors was not so large as might have been anticipated, it was still in advance of former occasions, and this department of the exhibition was attractive and interesting.

DAIRY PRODUCTS, &c.—Eighty-six entries. This class was limited to dairy produce proper, and honey, instead of embracing groceries and provisions as on former occasions. The entries of butter and cheese were not so numerous as at the Kingston show, 1856. There was, however, a pretty extensive display.

AGRICULTURAL IMPLEMENTS.—Two hundred and thirty-three entries, being a less number than at Brantford. Though the show of implements was not unusually large, the articles were exceedingly good of their kind, and exhibited a great improvement in the workmanship as well as in the models.

FOREIGN IMPLEMENTS.—In this class there were only two entries, one of a cultivator, from New York State, and one of specimen of Lake Huron grindstone from Michigan, and the latter was not upon the ground.

CABINET WARE.—One hundred and thirty-three entries. There was a very fine display in this class. The carving on some of the side boards was beautiful and artistic. What struck the spectator in viewing the cabinet work from the factories of Messrs. Jacques & Hay, Toronto; Fuller & Co., Oshawa; Morton, of Hamilton, and others, was not more the excellence of the workmanship as the beauty and suitability of the woods of Canada, such as the walnut, the maple, oak, &c., for the purposes of the cabinet maker.

CARRIAGES, &c.—Fifty-five entries. This class was limited to carriages and carriage builders' material. All the classes in the list after that of Agricultural implements had been revised and re-arranged, and, therefore, cannot be conveniently compared with former years. The competition in this class was not of more than an ordinary character.

FINE ARTS.—Three hundred and fifty entries. The display in this class was the most extensive that had yet been witnessed, and added much to the interest of the exhibition. The amateur class was, as usual, more numerously represented than the professional. Specimens of photographing formed a considerable part of the exhibition. A few of the oil paintings were of more than ordinary merit.

GROCERIES, PROVISIONS, &c.—One hundred and eighty-nine entries. The display in this class exhibited a considerable extension and improvement in our domestic productions and manufactures for household consumption.

HATS, FURS, &c.—Fifty-two entries. The competition in wearing apparel was very spirited.

INDIAN MANUFACTURES.—Thirty-seven entries, consisting of moccasins, bead work, &c.

LEATHER, WHIPS, INDIAN RUBBER GOODS, &c.—One hundred and three entries. There was a creditable display in this class.

LADIES' WORK.—Five hundred and fifty-two entries, against 297 in 1857, and 375 in 1856; the large display of elegant and fancy articles in this department formed one of the chief attractions in the Crystal Palace.

MACHINERY AND MANUFACTURES IN METALS.—Three hundred and thirteen entries. There was perhaps the largest and most interesting collection of articles in this department, which has yet been seen at any of the Provincial Exhibitions.

MISCELLANEOUS.—Eighty-five entries.

MUSICAL INSTRUMENTS.—Fourteen entries.

POTTERY, BUILDING STONES, &c.—Thirty-six entries. The display in this class evinced the increasing importance attached to the manufacture of tiles for land drainage. It also showed that some progress is making in the manufacture of pottery for domestic use. There were some excellent qualities of stone from the quarry for building, flagging, and other purposes.

PAPER, PRINTING, BOOKBINDING, &c.—Eighty-seven entries.

WOOLLEN, FLAX AND COTTON GOODS.—One hundred and thirteen entries. Although the display of cloths in this class was hardly equal to former occasions, the quantity and quality of hosiery exhibited was an evidence of considerable progress and improvement in that branch of manufacture.

The following notice of the department of manufactures generally is from one of the local daily papers, the *Globe*:—

MANUFACTURES.—At the head of the stand on the north side of the eastern wing are a number of scales and weights, the former exhibited by Messrs. Dally, Ware & Co., of Hamilton, the latter by Messrs. H. Piper & Brother, inspectors of weights and measures, Toronto. The scales are well worthy attention, both on account of the excellence of the material and finish, and also because of the nicety with which they are balanced, the bearings being of steel. In this latter respect they are superior to the celebrated scales of Fairbanks, of the States. The large platform scales will weigh from half-a-pound to 25 cwt. Mr. John Mills of Hamilton, exhibited an improvement upon his hot air furnace; it contains 200 feet of heating surface. The furnace has 15 different flues, and the machine is adapted to the heating of churches and other public buildings, being admirably suited to the maintenance of an even temperature. A first-rate case of rifles was shewn by Mr. Grainger, Toronto, No. 1 of which, a double elliptic rifle, was considered a decided improvement on the Lancaster gun. Coal oil lamps were shown by Messrs. Parson Brothers, who claim that in the diffusion of the light, they are superior to those of American manufacture. Mr. H. G. Booth, Toronto, has a creditable stand of tin, copper, and brass, whilst Messrs. Moore & Co., of Hamilton, shewed some first rate japan ware. Mr. W. H. Rice, of Toronto, excelled in wire work, showing wire cloth of various qualities, bird cages, &c. One of the best specimens of his work was an ingenious rat trap, well calculated to deceive the most wary of these troublesome customers. Mr. D. B. Wallace, of Montreal, exhibited a sewing machine. Mr. H. Yates, of Brantford, a slide valve indicator for a locomotive. A mixed vegetable and animal oil—so as to constitute what the exhibitor denominated "anti-friction grease"—was shown by Mr. Joseph Archer, of Toronto, who states that it will neither freeze on the machinery in winter, nor drop off it during the hottest days of summer. Mr. Israel Seaman showed a good rotatory grain separator, and also a bran duster and smut mill. Mr. George Campbell, of Toronto, blacksmiths' portable iron forges. A new sewing machine—an improvement on the many improvements made on stitching machinery since the "song of the shirt" saw the light—was busily at work under the direction of Messrs. Butler & Co., of Newmarket, its inventors. It is designed for family use, and is said with a single stitch to have the certainty which is only attained elsewhere by the double. Mr. John O'Malley, of Toronto,

showed a shingle edging machine. Mr. John Gartshore, of Dundas, specimens of finishing in iron, intended for the Hamilton water-works.

We arrive next at the north-east corner of the palace, which is largely occupied by the goods of the enterprising firm of Thompson, Keith & Co., Toronto. The chief article in the space allotted to them, are a gasometer fittings, employed in the manufacture of gas from rosin oil, which it produces at $2 per 1000 feet. If applied to detached country dwellings, it would entirely relieve the inmates there of the miseries incident to a state of semi-darkness during our long winter nights. It might also be used with advantage and profit in some of the imperfectly lighted hotels with which the Province abounds. The same firm likewise exhibited a fine assortment of gasaliers of their own make, the first ever manufactured in the Province. The plumbers' work which they exhibited was excellent, and their whole stand was a credit to the city. Mr. William Hodson, of Toronto, brought specimens of his handiwork in the shape of window sashes, doors, blinds, &c., whose chief merit was that they had been made to assume a beautiful smooth surface without the aid of sandpaper. Mr. William Tait, of Duart, exhibited some beautiful agricultural rakes and forks. Mr. C. R. Parks, of Toronto, was strong, as usual, in wood turning. The prisoners in the Penitentiary at Kingston, sent the results of their industry in the form of rakes and cradles, and wash boards, all of which were very creditable specimens of workmanship. The goods were shown by Messrs. Thomson & Burns, Yonge-street, Toronto, agents for Messrs. Drummond & Co., Kingston. Mr. M. B. Beasley, of Hamilton, and Messrs. Smith & Caulkins, exhibited clean-sweeping brooms. An ingenious portable stool was exhibited by Mr. E. C. Campbell, of Niagara. Mr. J. W. Esmond, of Toronto, showed a refrigerator, and Mr. Platt Hinman, of Haldimand, an ox yoke and bows. A splendid oak hall door, the panels of which are of stained glass, and having over it a fan light of stained glass, was exhibited by Mr. Burrowes, of Toronto, the glass having been stained by Mr. W. H. Brummitt. Next came a re-acting churn by Mr. Ira S. Leflar, of Streetsville, and a bee-hive by Mr. R. C. Gill, of Cramahe. Some very fine split shingles were exhibited by Mr. Peter Pilkie, of Barrie. Mr. E. C. Scarlett, of Toronto, showed machine-wrought mouldings and panelled door. Messrs. Smith, Burke & Co., of Toronto, also exhibited a panelled door and window shutters. Mr. John Hogg, of Toronto, a churn. Mr. John C. Gamble, patent self-fastening metallic roofing. Mr. Robert S. Dodd, of Ayr, specimens of coopers' work. Some well-finished plumbers' work was shown by Mr. Harding, of Toronto. He had beer pumps, improved baths, and last, and most interesting of all, a patent incubator for hatching chickens. The inmates of the Penitentiary do not excel in agricultural implements alone. Here was exhibited by Mr. J. P. Millener, of Kingston, a lot of tools of polished steel, made by the Provincial prisoners, which would not discredit the best steel tool maker in the country. Messrs Chewitt & Co., Kingston, showed samples of axles, and other iron and steel work manufactured from scrap. Printers' "chases" and horses' shoes were exhibited together by Mr. Henry Doane, of Toronto, who proved himself a friend to the travelling biped, as well as quadruped, by a machine for improving the shape of that auxiliary to boot-making which the crabbed cobbler is charged with having thrown at his wife—the last. There were likewise horses' shoes by Mr. William Howard, of Streetsville, as well as by Mr George Savage, of Toronto, Mr. Hugh Ross, of York Mills, and Mr. Wm. McHaffy, of Brampton, the latter of whom also exhibited some excellent steel carriage springs. Mr. S. Webster, of Elora, showed tin ware, and Messrs. Mitchell, Murray & Co., of Hamilton, a good collection of nails. The model of a grain separator was exhibited by Mr. Charles Green, of Brantford. Mr. Alex. Messer, of Toronto, Mr. Robert Ord, of Niagara, and Mr. Thomas Smith, of Hamilton, had each self-acting car-couplers, by the employ-

ment of any of which to railway carriages, it would seem to be a matter of the utmost difficulty for them to play truant to the engine. Mr. Edward Preston sent some pretty specimens of miniature saws, &c., and Mr. George Cummings of Niagara, a well-got-up slide steam valve. Children's carriages of handsome manufacture were shewn by Mr. Elijah Palmer of Toronto, Messrs. Barr & Pringally, of Cobourg, and Mr. William Lilly, junr., of Toronto. Messrs. Skinner & Co., of Gananoque Globe Works, exhibited hames. Very fine specimens of basket work were sent by Mr. John Osborne of Toronto. A fanning machine, like an Indian Punkah, worked by clock machinery, with fly wheel attached, was shewn by Mr. Elias Jasper, of Toronto. On the stand by its side were turned broom handles by Mr. William Tait, of Duart.

Of a verity we are a butter-loving people. Else why so many churns exhibited? Machines for turning cream into butter were represented in endless variety, but perhaps none excelled that of Mr. J. W. Phillips, of Thornhill,—a churn with vertical rotary motion. A press for making cheese, shewn by Mr. John Gilbert, of Sidney, was also deserving notice. Patent pails and tubs were entered by Mr. Harding McConnell, of Vienna. A washing machine was shown by Mr. John Nott, of Reach, and a very handsome iron cheese press by Mr. Henry Agnew of Toronto. Specimens of iron of good quality were shewn by the Marmora Iron Company.

A large and very superior collection of stoves were exhibited by Messrs. Armstrong & Co., of Toronto, by whom some of them have been patented. They comprised a large Gothic hall stove for wood; a parlor stove, with open front; a stove which served the double purpose of ornament and use, and which might easily be converted from a handsome parlor stove into a convenient cooking apparatus; the celebrated challenge heater, which can be very nearly made to accomplish the feat of blowing heat and cold in the same breath; the Canadian Farmer stove, one of the best of friends to people in the bush; the Iron Duke stove, on which the strongly marked features of the "Great Captain" were clearly expressed; the Welcome coal stove; and the Davy Crockett stove. They also exhibited a large cooking range, of American manufacture, beautifully polished fire grates, and well finished castiron pots, tin and copper ware. Messrs. Rice Lewis & Son, of Toronto, made a good display with hardware, mangling machines, iron bedsteads, couches, scythes, hydraulic rams, garden engines, pumps, and India rubber hose and belting.

Five safes sent by Messrs. J. J. Taylor of Toronto, were real salamanders, and not only did they appear proof against fire but also against robbers. They were fitted up for the use of bankers, jewellers, merchants, and people generally having treasure to care for, and were warranted to defy the ravages of fire for 24 hours. Messrs. Pearson & Benedict, railway manufacturers, Niagara, sent some good castings. Messrs. Copp & Brother, Hamilton, exhibited copper ware and stoves, including a well-designed hall stove.

Opposite to the eastern entrance, were many specimens of materials in iron of very creditable workmanship, by Messrs. Charles Vale & Co., Toronto. There were cast iron columns and ornaments, used in the building of houses, ornamental railings, stoves of every description, and castings for plumbers, such as have hitherto been imported, but which are now made in Toronto. Mr. Vale supplied the castings for the new building of Messrs. Nordheimer, in this city, and also for the Rossin House. Messrs. D. Moore & Co. exhibited a well-arranged cooking stove and furniture, with patent damper for throwing the heat into any part of the stove in which it may be required. In close proximity to the stoves and rifles are samples of gunpowder sent by the Canada Powder Company, Hamilton, and in the same locality, circular and other saws imported from Messrs. Campbell & Jones, the manufacturers, at Montreal, by Messrs. Rice Lewis & Son, Toronto.

Crossing over to the south side of the same wing, and starting from the transept eastwards, we begin with the stand occupied by Messrs. Wiman & Co., news agents, King-street, in which telegraphic instruments are in operation, communicating with their store in the city, and thence with the 45,000 miles of wire in America and the 55,000 miles in Europe—that is presuming that the Atlantic Cable is in working order. Messages are sent to and from the city free of charge. There is also here one of Ruggles' card machines at work under the direction of Mr. Blackburn, printer, of this city. Taking another step onwards we come upon McLean's "wonderful vegetable preparations for the cure of blindness, deafness, lameness, pains, sprains, bruises," and for all the other ills to which flesh is heir. Messrs. Dodgson, Shield, and Morton, who occupy the next stand, sell physic of a rather better sort. They have two stands, one of which is devoted to biscuits, the other to wedding and other cakes, and confectionery generally. Their collection of delicate edibles is the largest in the building. They show no less than 10 kinds of biscuit and 35 kinds of sweetmeats. Their bride-cakes were most beautifully decorated in perfect taste, and their biscuits are the finest we ever tasted. Those who exhibited in this department were, in addition to the firm we have mentioned, Mr. Edward Brown, of Drummondville; Mr. David Ross, of Toronto; Mr. Webb; Messrs. Smith & Wills, Toronto; and Ann Clark, Toronto.

In the manufacture of maple sugar such of our farmers who turn their attention to this source of gain are adepts, and some capital specimens were shown by Mr. Thomas Stripp, of North Dorchester; Mr. John McGregor, of Nelson; and Mr. D. Triffany, of Delaware. Mr. S. Greey, of Toronto, furnished the ale and porter, and Messsrs. Hall & Clark the teetotal drinks, or, "double aerated summer beverages," as it is more respectful to call them. Neither kind of liquor was out of place, for the bottles and barrels in which it was contained, were quite surrounded with biscuits and crackers, exhibited by Mr. Edward Lawson, of Bolton, Albion; by Mr. W. Christie, of Toronto; by Mr. John Nasmith, of Toronto; by Mr. Edward Brown, of Drummondville; and by Mr. Mackinnon, of Montreal. Mr. Edward Williams, of Cobourg, shewed blacking and ink; Mr. P. R. Lamb, of Toronto, blacking and neat's foot oil; and Messrs. D. Crawford & Co., writing ink and mustard!

Having disposed of the strange mixture of articles already enumerated, we are able to class most of the remainder under separate headings.

Leather and Leather Goods.—These covered a considerable space, and were made to subserve many useful purposes. Mr. H. E. Clarke, of Toronto, exhibited a couple of well-made leather portmanteaus. Closely associated with leather, and placed by its side were ingeniously constructed anatomical lasts, boot-trees and stretchers. Of boots and shoes there was a great variety, suited to persons of all ages and conditions. The exhibitors were Messrs. Robertson and McNeill, Toronto, Mr. Alexander Gemmel, Toronto, Mr. Robert Merryfield, Toronto, and Mr. David Stewart, St. Andrews. Mr. Thomas Thompson, of Toronto, exhibited saddles and bridles, and double-rivetted engine hose of leather, with brass joints. Saddles were also shown by Mr. Alexander Chalmers, of Dundas. Mr. John Griffith, of Toronto, sent a set of handsome equestrian military accoutrements, a set of fancy single harness, a set of double harness, and a composition horse as large as life. Messrs. Mackay & Smith, of Brantford, had a set of beautifully mounted double and single harness. Mr. Christian Worster, of Maple, a set of single carriage harness. Mr. Robert Fleming, of Newmarket, a set of single carriage harness. And Mr. John Buchan, of Newcastle, a set of carriage harness, which for neatness of sewing it would not be easy to surpass. It seems somewhat strange that in an agricultural country such as Canada, where so much dependence is placed on the operations of the farmer, there should have

been among so much carriage harness only one lot of tackle for teams. Yet so it was, and Mr. Robert Malcolm, of Toronto, had the team and cart harness all to himself, and that he put in a very strong and durable appearance it would be folly to deny. There was a large quantity of leather not worked up, and if the old proverb holds true, for general purposes it would be difficult to find its like in any other department. However, we can only enumerate the exhibitors, and the kinds of leather shown. Mr. W. Strange, of Kingston, sole and upper leather; Mr. Jacob Snure, of Jordan, sole, harness, upper leather, calf skins, carriage covers, &c.; and Mr. H. Corson, of Markham, harness leather.

CLOTHING, &C.—The clothing is exhibited near the southern transept, and is in every way creditable to Canadian tailors. Mr. George Harcourt, of Toronto, has a couple of coats fit for a millionaire—the one a frock-coat lined with silk, the other an overcoat, each of the best material, best workmanship, and latest fashion. He also exhibits a business coat, of more modest pretensions. The clothing of Mr. John Ritchey, jun., Toronto; of Mr. F. French, Toronto; and of Mr. Alex. Cormack, Ayr, merits attention; and the suit of clothing placed on the stand by Messrs. J. Laidlaw & Co., Toronto, deserves especial notice. But the most extensive exhibition of clothing was that of Mr. W. S. Finch, Toronto, whose vests, pantaloons, under and overcoats, were almost perfect examples of the tailor's art. Of hats, caps, and furs, there was a choice but by no means extensive show. The exhibitors were Mr. George Knapman, hats and caps, and Mr. Domenico Chisachi, Kingston, hats and furs.

LIST OF PRIZES,

AWARDED AT THE THIRTEENTH ANNUAL EXHIBITION OF THE PROVINCIAL AGRICULTURAL ASSOCIATION, HELD AT TORONTO, SEPTEMBER 28, 29, 30, AND OCTOBER 1, 1858.

HORSES.

CLASS I.—BLOOD HORSES.—(16 Entries.)

Judges—Charles Jarvis, Brantford; Wm. Applegarth, Flamboro; Andrew Hope, Lanark.

Best thorough-bred stallion, Thomas Downing, Whitby, "Young Sir Tatton," $40; 2d do Dew & Nightingale, York Township, "Sir Tatton Sykes," $25; 3d do Jonathan Gates, Scarboro', "Young Wagoner," $12.

Best thorough-bred 3 years old stallion, J. & J. White, Trafalgar, $22.

Best thorough-bred 2 years old stallion, George Cooper, York Township, $14.

Best thorough-bred 3 years old filly, Henry Battell, Haldimand Township, 2d prize, $11.

Best thorough-bred mare and foal, W. Balkwill, London, $22; 2d do J. & J. White, Trafalgar, $14.

THE JUDGES REMARK—The Judges in tendering their report, beg to say the stock exhibibited in this class was of a very inferior description, and would recommend the expediency of importing from the United States or Britain.

CLASS II.—AGRICULTURAL HORSES.—(230 Entries.)

Judges—John W. Hough, Brockville; Alexander Alcorn, Cobourg; and Geo. Robson, London.

Best stallion for agricultural purposes, Jos. Hunter, Toronto Township, $40; 2d do William Foster, Churchville, $25; 3rd do William Chirrey, Markham, $12.

Best roadster or carriage stallion, William Helliwell, Scarboro', $10; 2d do John Sanderson, Markham, $25; 3d do John Dixon, York Township, $12.

Best 3 years old stallion, John Cordingley, Trafalgar, $22; 2d do William Blanchard, Seneca, $14; 3d do T. Brocklebank, Toronto Township, $7.

Best 2 years old stallion, John Gill, Toronto Township, $14; 2d do Simon Shunk, Vaughan, $10; 3d do Capt. Tyrrwhitt, King, $5.

Best yearling Colt, Jas. Watson, Toronto Township, $8; 2d do John Taylor, $6; 3d do Jos. Smith, Etobicoke, $4.

Best 3 years old filly, George Scott, Scarboro', $18; 2d do Simon Shunk, Vaughan, $11; 3d do Henry Battell, Haldimand, $7.

Best 2 years old filly, T. Armstrong, Vaughan, $14; 2d do W. A. Bryant, Reach, $9; 3d do Robert Beith, Darlington, $4.

Best yearling filly, T. Lawson, Pickering, $8; 2d do Henry Eby, Markham, $6; 3d do W. Bull, York Township, $4.

Best brood mare and foal, or evidence that the foal has been lost, Simon Shunk, Vaughan, $22; 2d do W. F. Doherty, Toronto Township, $14; 3d do John Gill, Toronto Township, $6.

Best roadster or carriage brood mare and foal, &c., W. Dickson, Markham, $22; 2d do D. G. Forbes, Whitby, $14.

Best span matched carriage horses, W. Marsh, Port Hope, $20; 2d do C. S. Gzowski, Toronto, $15; 3d do Adam Fralick, Stamford, $10.

Best saddle horse, W. B. Heward, Toronto, $10; 2d do G. T. Denison, Toronto, $8; 3d do Clarkson Jones, Toronto, $6.

Best single carriage horse in harness, Tobias S. Mason, Trafalgar, $10; 2d do Patterson & Brother, Richmond Hill, $8; 3d do John Crosby, Markham, $6.

Extra Entries.—W. Lindsay, Port Hope, Shetland stallion, imported, $5; do Shetland mare and foal, $3; do yearling Shetland colt, $2; Jacob Lahmer, Vaughan, span 3 year old Geldings, $5; R. L. Denison, Toronto, 3 year old Indian pony, $2; David Keddle, Kingston, Canadian pony, $2; Arthur Wells, Guelph, pair of French driving ponies, $4; do 4 year old French driving mare, $4; James Bell, Weston, pony, $2; Dr. Maitland, R. C. Rifles, Toronto, pony mare, cross between Shetland and Canadian, $4.

CLASS III.—HEAVY DRAUGHT HORSES.—(55 Entries.)

Judges—S. J. J. Brown, Niagara; Henry Battell, Haldimand Township; and Edward Willmott.

Best heavy draught stallion, David Rowntree, York Township, $10; 2d do James Addison, Etobicoke, $25; 3d do R. Armstrong, Markham, $12.

Best 3 years old Stallion, John Crawford, Scarboro', $22; 2d do W. Chirrey, Markham, $14; 3d do John Ellerby, Vaughan, $7.

Best 2 years old stallion, W. Crawford, Scarboro', $14; 2d do George Gibson, Markham, $10; 3d do W. J. Ashby, Pickering, $5.

Best yearling colt, Jos. Thompson, Pickering, "Young Louden Tam," imported July 1858 from Britain, $24; 2d do Thomas Denison, Markham, $6; 3d do Thomas Smith, Toronto Township, $4.

Best 3 years old filly, R. Lawrie, Darlington, $18; 2d do John Ackrow, Weston, $11; 3d do James Pile, Whitby, $7.

Best two years old filly, W. Miller, Pickering, $14; 2d do R. Clarkson, Vaughan, $9; 3d do W. Dickson Markham, $4.

Best yearling filly, T. Smith, Toronto Township, $8

Best brood mare and foal, or evidence that the foal has been lost, Jesse Trull, Darlington, $22; 2d do John Crawford, Scarboro', $14.

Best span of draught horses, R. Armstrong, Markham, $20; 2d do George Black, Nissouri West, $15; 3d do M. Shepherd, York Township, $10.

EXTRA PRIZE—W. L. Ewing, Brantford Township, pony, $5.

The Judges add their opinion that a class should be assigned to farm teams for farming purposes.

CATTLE.

CLASS IV.—DURHAMS.—(135 Entries.)

Judges—E. C. Dibble, State of New York; John Iles, South Wellington; C. A. Jordison, South Hastings.

Best aged Bull, 5 years old and upwards, Hugh McMillan, Erin, "Belted Will 4th," $36; 2d do Frs. Gray, Amaranth, "Honest Tom," $24; 3d do John S. Armstrong, Eramosa, "Sir Isaac Brock," $16; 4th do Capt. Tyrwhitt, North Gwillimbury, "Dairyman," $8.

Best 4 years old Bull, Thomas Smith, Mimico, "Young Victor," $36; 2d do George Robson, London, "Shenandoah," $24; 3d do Andrew Forrester, St. Mary's, "Sultan," $16; 4th do Conyers Place, Beachville, "Lord Barrington 2nd," $8.

Best 3 years old bull, Robert Armstrong, Markham, "Fawkes," $32; 2d do Luke Mullock, East Flamboro', "Joe Miller," $20; 3d do John Bellwood, Newcastle, "Washington," $12; 4th do John Dow, Whitby, "Bruce," $6.

Best 2 years old bull, John Thompson, Whitby, "Bridegroom," $24; 2d do John Snell, Chinguacousy, "Prince of the West," $16; 3d do H. J. Boulton, Etobicoke, "11th Duke of Oxford," $9; 4th do W. Miller, Pickering, "Young England," $5.

Best 1 year old bull, Wm. Armstrong, Markham, "Young Tweedside," $20; 2d do Andrew Barker, Etobicoke, "Snowball," $12; 3d do George Roddick, Hamilton, $8; 4th do F. W. Stone, Guelph, "Third Grand Duke," $4.

Best bull calf, under 1 year, Edward Musson, Etobicoke, $16; 2d do George Cooper, York Township, $10; 3d do John Snell, Chinguacousy, $6; 4th do F. W. Stone, Guelph, $3.

Best cow, F. W. Stone Guelph, $20; 2d do John Gill, Toronto Township, $12; 3d do Wm. Miller, Pickering, "Siren," $8; 4th do John Walton, Peterboro', "Beauty, 3d," $4.

Best 3 years old cow, F. W. Stone, Guelph, "Desdemona," $16; 2d do F. W. Stone, Guelph, "Eugenie," $8; 3d do George Miller, Markham, "Young Starling," $6; 4th do John Snell, Chinguacousy, "Sonsie, 2d," $4.

Best 2 years old heifer, F. W. Stone, Guelph, "Marchioness of Gloster," $12; 2d do F. W. Stone, Guelph, "Sanspareil, 2d," $8; 3d do James Petty, Kippen, "Fanny," $5; 4th do Wm. Miller, Pickering, "Nonpareil," $3.

Best 1 year old heifer, John Thompson, Whitby, "Lady of Athelstane," $10; 2d do John Foot, Hope, $6; 3d do John Thompson, Whitby, "Nerissa," $4; 4th do John Snell, Chinguacousy, "Lady Barrington, 11th," $2.

Best heifer calf, under 1 year, John Foott, Hope, $6; 2d do F. W. Stone, Guelph, $4; 3d do George Roddick, Hamilton Township, $2; 4th do George Roddick, Hamilton Township, $1.

REMARKS BY JUDGES.—Your committee would also report that they examined the one extra entry in section 12, a three year old heifer in calf, exhibited by Mr. Taylor, Stamford, and cannot recommend any premium for her, as they saw nothing in her particularly to admire, having neglected better cows than she is in sections 7 & 8. Your committee found great difficulty in judging in section

7, for the reason that all aged over three were brought into competition therein, and believe that due consideration for exhibitors demands that a class should be made of four years old, and therefore recommend such amendment to the premium list.

Your committee would add that the display of cattle in the department in which they were judges, was such as to reflect great credit upon Canada and the exhibiters, and was such as to warrant us in the belief that the time is not far distant when Canada will rival all competitors in North America in the exhibition of fine stock, and they congratulate the Association upon its fine exhibition. All which is respectfully submitted.

CLASS V.—DEVONS.—(102 Entries.)

Judges—Charles Mitchell, Chinguacousy; J. P. Wheler, Scarboro'; P. R. Wright, Cobourg.

Best aged bull, 5 years old and upwards, W. H. Lock, Yarmouth, $36; 2d do Adam Ferrie, Doon, $24; 3d do Nathan Choate, Port Hope, "Torrence," $16; 4th do R. & O. Coates, Oakville, "Duke of Devonshire," $8.

Best 4 years old bull, John Moore, Etobicoke, "Duke," $36; 2d do William O'Brien, Oro, "Albion," $24.

Best 3 year old bull, John Davey, Newcastle, $32; 2d do Christopher Courtice, Darlington, "Buck of Devon," $20; 3d do Wm. Scott, Wilmot, "Fordham," $12.

Best 2 year old bull, Daniel Tye, Wilmot, "General," $24; 2d do W. H. Lock, Yarmouth, $16; 3d do Daniel Tye, Wilmot, "Colonel," $9; 4th do G. K. Chisholm, Oakville, $5.

Best 1 year old bull, W. H. Lock, Yarmouth, $20; 2d do W. H. Lock, Yarmouth, $12; 3d do Thomas Allin, Whitby, $8; 4th do W. H. Lock, Yarmouth, $4.

Best bull calf, under 1 year, Adam Ferrie, Doon, "Prince Albert," $16; 2d do Wm. H. Lock, Yarmouth, $10; 3d do Christopher Courtice, Darlington, $6; 4th do W. H. Lock, Yarmouth, $3.

Best cow, W. H. Lock, Yarmouth, $20; 2d do W. H. Lock, Yarmouth, $12; 3d do John Masson, Nissouri, $8; 4th do Christopher Courtice, Darlington, "Beauty," $4.

Best 3 year old cow, Wm. H. Lock, Yarmouth, $16; 2d do Wm. Courtice, Darlington, "Stately," $8; 3d do Wm. H. Lock, Yarmouth, $6; 4th do John Ashton, Darlington, $4.

Best 2 year old heifer, Wm. H. Lock, Yarmouth, $12; 2d do Adam Ferrie, Doon, $8; 3d do Wm. H. Lock, Yarmouth, $5; 4th do Wm. H. Lock, Yarmouth, $3.

Best 1 year old heifer, Adam Ferrie, Doon, "Flora," $10; 2d do Wm. H. Lock, Yarmouth, $6; 3d do Wm. H. Lock, Yarmouth, $4; 4th do Adam Ferrie, Doon, "Ida," $2.

Best heifer calf, under one year, Adam Ferrie, Doon, $6; 2d do John Moore, Etobicoke, $4; 3d do Wm. H. Lock, Yarmouth, $2; 4th do Christopher Courtice, Darlington, $1.

REMARKS BY JUDGES.—As a whole we consider the Devons exhibited first class in point of quality, numerically larger than at any former exhibition. The prize list sufficiently indicates the excellence of the various herds. It is proper however to mention that Mr. Lock of Yarmouth, and Mr. Ferrie, of Doon, were the principal exhibiters.

CLASS VI.—HEREFORDS.—(8 Entries.)

Judges—P. R. Palmer, Thurlow; H. Freeland, Brockville; John Kerr, Drummondville.

Best aged bull, 5 years old and upwards, James McMicking, Stamford, second prize, $24.

Best cow, James McMicking, Stamford, $20.

Best 2 years old heifer, James McMicking, Stamford, $12.

Best 1 year old heifer, James McMicking, Stamford, $10.

Best heifer calf, under one year, James McMicking, Stamford, $6.

CLASS VII.—AYRSHIRES.—(47 Entries.)

Judges—P. R. Palmer, Thurlow; H. Freeland, Brockville; John Kerr, Drummondville.

Best 4 years old bull, W. H. Essery, London, second prize, $24; 2d do R. L. Denison, Toronto, third prize, $16.

Best 3 years old bull, John File, Brantford, $32; 2nd do Charles Waugh, London, $20; 3d do R. L. Denison, Toronto, $12.

Best 2 years old bull, P. R. Wright, Cobourg, $24; 3d do R. L. Denison, Toronto, $9; 4th do David Smellie, Vaughan, $5.

Best 1 year old bull, R. L. Denison, Toronto, $20; 2d do George Stanton, St. George, $8.

Best bull calf (under 1 year) John Chapman, York Township, $16; 2d do David Smellie, Vaughan, $10; 3d do David Smellie, Vaughan, $6.

Best cow, R. L. Denison, Toronto, $20; 2d do George Stanton, St. George, $12; 3d do R. L. Denison, Toronto, $8; 4th do R. L. Denison, Toronto, $4.

Best 3 years old cow, John Masson, Nissouri, third prize, $6.

Best 2 years old heifer, P. R. Wright, Cobourg, $12; 2d do P. R. Wright, Cobourg, $8; 3d do George Stanton, St. George, $5; 4th do R. L. Denison, Toronto, $3.

Best 1 year old heifer, P. R. Wright, Cobourg, $10; 2d do R. L. Denison, Toronto, $6; 3d do R. L. Denison, Toronto, $4.

Best heifer calf, under 1 year old, R. L. Denison, Toronto, $6; 2d do P. R. Wright, Cobourg, $4; 3d do R. L. Denison, Toronto, $2.

CLASS VIII.—GALLOWAY CATTLE.—(45 Entries.)

Judges—Evan McDonald, Wellington; John Dow, Whitby; H. J. Laurie, Hamilton.

Best aged bull, 5 years old and upward, Richard Wells, King, $36; 2d do Wm. Roddick, Hamilton Township, $24.

Best 4 years old bull, John Fleming, Vaughan, $36; 2d do James Somerville, Vaughan, $24; 3d do D. H. Messenger, Cooksville, $16.

Best 3 years old bull, Arthur McNeil, Woodbridge, $32; 2d do Wm. Roddick, Hamilton Township, $20; 3d do James Carruthers, Haldimand Township, $12.

Best 2 years old bull, John McLean, Essa, $24; 2d do Wm. Roddick, Hamilton Township, $16; 3d do E. W. Thomson, York Township, $9; 4th do Capt. Norman McLeod, Drynock, $5.

Best 1 year old bull, Joseph Jardine, Saltfleet, $20; 2d do Allen Wilcox, Toronto Township, $12; 3d do George Roddick, Hamilton Township, $8; 4th do J. P. Bull, York Township, $4.

Best bull calf (under 1 year) Wm. Roddick, Hamilton Township, $16; 2d do George Roddick, Hamilton Township, $10; 3d do Arthur McNeil, Vaughan, $6; 4th do John Moore, Etobicoke, $3.

Best cow, Joseph Jardine, Saltfleet, $20; 2d do John Torrance, Vaughan, $12; 3d do Joseph Jardine, Saltfleet, $8; 4th do George Roddick, Hamilton, $4.

Best 3 years old cow, George Miller, Markham, $16; 2d do George Miller, Markham, $8.

Best 2 years old heifer, Wm. Miller, Pickering, $12; 2d do Allen Wilcox, Toronto Township, $8; 3d do Wm. Roddick, Hamilton Township, $5.

Best 1 year old heifer, Capt. Norman McLeod, Drynock, $10; 2d do Wm. Roddick, Hamilton, $6.

Best heifer calf (under 1 year) John Torrance, Vaughan, $6; 2d do John Torrance, Vaughan, $4; 3d do Joseph Jardine, Saltfleet, $2; 4th do John Torrance, Vaughan, $1.

CLASS IX.—GRADE CATTLE.—(88 Entries.)

Judges—Mattanniah Kerr, Hastings; M. Joness, Durham; Jas. Miller, Brant.

Best cow, Samuel Hodgskin, Guelph, $20; 2d do Joseph Pierson, Whitby, $12; 3d do Robert Niven, Niagara, $8; 4th do Jos. Pierson, Whitby, $5.

Best 4 years old grade cow, A. H. Summerfelt, Markham, $20; 2d do J. P. Wheler, Scarboro', $12; 3d do J. P. Wheler, Scarboro', $8; 4th do Joseph Pierson, Whitby, $5.

Best 3 years old cow, S. Hodgskin, Guelph, $16; 2d do Samuel Hodgskin, Guelph, $10; 3d do Joseph Pierson, Whitby, $6; 4th do E. Jones, Stamford, $4.

Best 2 years old heifer, S. Hodgskin, Guelph, $12; 2d do Joseph Pierson, Whitby, $8; 3d do Thomas Davis, York Township, $5; 4th do Thomas Smith, Etobicoke, $3.

Best 1 year old heifer, C. Walker, London, $10; 2d do Samuel Hodgskin, Guelph, $6; 3d do E. Jones, Stamford, $4; 4th do Jos. Pierson, Whitby, $2.

Best heifer calf (under 1 year) Joseph Pierson, Whitby, $6; 2d do George Miller, Markham, $4; 3d do J. P. Wheler, Scarboro', $2; 4th do W. Wilson, Etobicoke, $1.

EXTRA PRIZES.—John Smith, Stamford, a three year old grade heifer in calf, $6.

CLASS X.—FAT AND WORKING CATTLE, ANY BREED.—(33 Entries)

Judges—Henry Moyle, East Brant; John Carveth, Port Hope; Peter Hutty, Toronto.

Best ox or steer, J. W. Overholt, Wainfleet, $30; 2d do W. Donaldson, East Zorra, $20; 3d do R. Wickett, Seneca, $12.

Best cow or heifer, S. Hodgskin, Guelph, $30; 2d do John Wade, Port Hope, $20; 3d do H. J. Laurie, Hamilton, $12.

Best yoke of working oxen, James Brown, North Dumfries, $20; 2d do W. Anderson, Hamilton, $12; 3d do George Cooper, York Township, $8.

SHEEP.

CLASS XI.—LEICESTERS.—(188 Entries)

Judges—H. Tolton, Eramosa; Wm. Mason, Scarboro'; John Cade, Whitby; R. Young, Sarnia.

Best ram, two shears and over, John Snell, Chinguacousy, $16; 2d do W. C. & J. Miller, Markham, $10; 3d do John Gill, Toronto Township, $4.

Best shearling ram, Joseph Kirby, Guelph, $16; 2d do Peter McBride, Toronto Township, $10; 3d do James Watson, Toronto Township, $4.

Best ram lamb, George Jackson, Gore of Toronto, $8; 2d do Geo. Jackson, Gore of Toronto, $4; 3d do Geo. Jackson, Gore of Toronto, $2.

Best 2 ewes, two shears and over, Geo. Miller, Markham, $16; 2d do John Snell, Chinguacousy, $12; 3d do Thomas Smith, Toronto Township, $6.

Best 2 shearling ewes, John Snell, Chinguacousy, $12; 2d do Chris. Walker, London, $8; 3d do Wm. Edwards, Pickering, $4.

Best 2 ewe lambs, Chris. Walker, London, $6; 2d do John Snell, Chinguacousy, $4; 3d do Thomas Smith, Toronto Township, $2.

CLASS XII.—COTSWOLDS.—(39 Entries.)

Judges—N. H. Paulding, St. Catherines; Thomas Boulton, Eramosa; Robert Hatfield, Buffalo, N. Y.

Best ram, 2 shears and over, F. W. Stone, Guelph, $16; 2d do F. W. Stone, Guelph, $10; 3d do John Snell, Chinguacousy, $4.

Best shearling ram, F. W. Stone, Guelph, $16; 2d do F. W. Stone, Guelph, $10; 3d do F. W. Stone, Guelph, $4.

Best ram lamb, F. W. Stone, Guelph, $8; 2d do Chris. Walker, London, $4; 3d do F. W. Stone, Guelph, $2.

Best 2 ewes, two shears and over, F. W. Stone, Guelph, $16; 2d do F. W. Stone, Guelph, $12; 3d do John Snell, Chinguacousy, $6.

Best 2 shearling ewes, F. W. Stone, Guelph, $12; 2d do F. W. Stone, Guelph, $8; 3d do F. W. Stone, Guelph, $4.

Best 2 ewe lambs, F. W. Stone, Guelph, $6; 2d do John Snell, Chinguacousy, $4; 3d do F. W. Stone, Guelph, $2.

CLASS XIII.—CHEVIOTS.—(15 Entries.)

Judges—N. H. Paulding, St. Catherines; Thomas Boulton, Eramosa; Robert Hatfield, Buffalo, N. Y.

Best ram, 5 shears and over, William Roddick, Hamilton Township, $16; 2d do James Dickson, Clarke, $10; 3d do James Dickson, Clarke, $4.

Best shearling ram, James Dickson, Clarke, $16; 2d do William Roddick, Hamilton Township, $10.

Best ram lamb, James Dickson, Clarke, $8; 2d do William Roddick, Hamilton, $4; 3d do Wm. Roddick, Hamilton, $2.

Best 2 ewes, two shears and over, James Dickson, Clarke, $16; 2d do Wm. Roddick, Hamilton Township, $12; 3d do Wm. Roddick, Hamilton Township, $6.

Best 2 shearling ewes, William Roddick, Hamilton Township, 2nd prize, $8.

Best 2 ewe lambs, James Dickson, Clarke, $6; 2d do Wm. Roddick, Hamilton Township, $4.

REMARKS BY JUDGES.—The Committee respectfully report that in the class of Cheviot Sheep, two pens only were offered in competition, and in making their awards they were influenced more by the quality of wool than of sheep. The sheep of one competitor, however, being in general superior in body to those of the competitor whose sheep had the best wool, they awarded the first premium to the best shaped ram, although his wool was not the best, being exceedingly coarse and mingled with much rough hair, because the superiority of his carcase was marked and extreme.

In Cotswold many sheep of great merit were exhibited, and the competition was exceedingly close. Your committee would in some cases have willingly increased the number of premiums.

CLASS XIV.—LONG-WOOLLED SHEEP, NOT PURE LEICESTERS, COTSWOLD OR CHEVIOTS.—(68 Entries.)

Judges—John Cade, Whitby; W. Mason, Scarboro'; Robert Young, Sarnia; Henry Tolton, Eramosa.

Best Ram, two shears and over, John Snell, Chinguacousy, $16; 2d do Geo. Miller, Markham, $10; 3d do John Malcolm, Scarboro', $4.

Best shearling Ram, P. R. Wright, Cobourg, $16; 2d do John Snell, Chinguacousy, $10; 3d do Richard Burrill, Etobicoke, $4.

Best Ram Lamb, W. L. Ewing, Brantford, $8; 2d do J. Gill, Toronto Township, $4; 3d do John Snell, Chinguacousy, $2.

Best 2 Ewes, two shears and over, John Snell, Chinguacousy, $16; 2d do John Snell, Chinguacousy, $12; 3d do George Miller, Markham, $6.

Best 2 shearling Ewes, John Snell, Chinguacousy, $12; 2nd do William Miller, Pickering, $8; 3d do George Miller, Markham, $4.

Best 2 Ewe Lambs, George Miller, Markham, $6; 2d do W. L. Ewing, Brantford, $4; 3d do John Snell, Chinguacousy, $2.

CLASS XV.—SOUTHDOWNS.—(49 Entries.)

Judges.—R. A. Hartley, Chinguacousy; James Foster, East Flamboro'; P. F. Canniff, Belleville.

Best Ram two shears and over, John Spencer, Whitby, $16; 2d do G. J. Miller, Niagara, $10; 3d do William Ash, Thorold, $4.

Best shearling Ram, B. Jennings, King, $16; 2d do John Spencer, Whitby, $10; 3d do E. Jones, Stamford, $4.

Best Ram Lamb, John Spencer, Whitby, $8; 2nd do John Spencer, Whitby, $4; 3d do E. Jones, Stamford, $2.

Best 2 Ewes, two shears and over, John Spencer, Whitby, $16; 2nd do John Spencer, Whitby, $12; 3d do G. J. Miller, Niagara, $6.

Best 2 shearling ewes, John Spencer, Whitby, $12; 2d do William Inglis, Markham, $8; 3d do John Spencer, Whitby, $4.

Best 2 ewe lambs, C. Crosby, Markham, $6; 2d do G. J. Miller, Niagara, $4; 3d do E. Jones, Stamford, $2.

CLASS XVI.—MERINOS AND SAXONS.—(29 Entries.)

Judges.—R. A. Hartley, Chinguacousy; James Foster, E. Flamboro'; P. F. Canniff, Belleville.

Best ram, two shears and over, Jacob Rymal, Barton, $16; 2d do Jacob Rymal, Barton, $10; 3d do G. J. Miller, Niagara, $4.

Best shearling ram, Jacob Rymal, Barton, $16; 2d do Jacob Rymal, Barton, $10; 3d do Sylvester Farrell, St. Thomas, $4.

Best ram lamb, Jacob Rymal, Barton, $8; 2d do Jacob Rymal, Barton, $4; 3d do Nathan Choate, Hope, $2.

Best 2 ewes, two shears and over, Jacob Rymal, Barton, $16; 2d do Jacob Rymal, Barton, 12; 3d do Nathan Choate, Hope, $6.

Best 2 ewe lambs, Jacob Rymal, Barton, $6; 2d do Jacob Rymal, Barton, $4; 3d do Nathan Choate, Hope, $2.

CLASS XVII.—FAT SHEEP.—(19 Entries.)

Judges.—Henry Moyle, Brantford; John Carveth, Port Hope; Peter Hutty, Toronto.

Best 2 fat wethers, Charles Scott, Whitby, $12; 2d do Chas. Scott, Whitby, $8; 3d do George Cooper, York Township, $4.

Best 2 fat ewes, F. W. Stone, Guelph, $12; 2d do John Snell, Chinguacousy, $8; 3d do Christopher Walker, London, $4.

REMARKS BY JUDGES.—The judges on fat cattle and sheep beg to report the animals of a very superior breed and quality, and it was with great difficulty they were able to determine on the different awards, so close was the competition.

When the judges were dispensing the prize tickets, they saw two very fat cows which were not fetched on the grounds for competition when the others were examined. They therefore would suggest the propriety of persons owning animals for competition to be in attendance when the judges go round, that there be no room for complaint or dissatisfaction thereafter. A great difficulty would also be avoided were the cattle and sheep arranged in their respective classes, as the prize list dictates: many fat cattle were found among milch cows, and many fat sheep with brood ewes, causing considerable trouble. The judges, however, conceive their awards to have given general satisfaction. Two top-knot sheep, exhibited by Mr. Forbes, of Whitby, were quite a curiosity, still the judges do not consider them worthy of a prize. All which is respectfully submitted.

CLASS XVIII.—LARGE BREED PIGS.—(34 Entries.)

Judges.—John Stiles, London; G. S. Burrill, Cramahe; George Gibb, Lindsay.

Best Boar, 1 year and over, N. Bethell, Grantham, $20; 2d do R. & O. Coates, Oakville, $12; 3d do C. A. Jordison, Smithville, $8.

Best breeding sow, 1 year and over, John Malcolm, Scarboro', $12; 2d do Robert Oxley, Toronto, $8; 3d do C. A. Jordison, Smithville, $4.

Best boar under 1 year, George Savage, Toronto Township, $12; 2d do R. & O. Coates, Oakville, $8; 3d do John Heal, York Township, $4.

Best Sow, under 1 year, R. & O Coates, Oakville, $8; 2d do George Savage, Toronto Township, $6; 3d do R. & O. Coates, Oakville, $4.

REMARKS.—The judges in making their awards cannot but express their regret that their duties were not more arduous, as that would have proved a better show under these sections. But they feel called on to remark that the competition was not only not so great as they would have desired, but that the animals exhibited did not come up to their expectations of the improvements that are almost everywhere else apparent.

CLASS XIX—SMALL BREED PIGS.—(66 Entries.)

Judges—Ira Hoskins, Hastings; James Wetenhall, Hamilton; William Hutt, Stamford.

Best Boar, 1 year and over, John McGlashan, Pelham, imported from U. S. since last show, $40; 2d do James Durand, Kingston $12; 3d do John Malcolm, Scarboro', $8.

RECOMMENDED.—A small Yorkshire pig, exhibited by Joshua Sisley, Scarboro', and a Berkshire, shown by Arthur Jones, Eramosa.

Best breeding Sow, 1 year and over, John McGlashan, Pelham, $12; 2d do H. J. Boulton, Humberford, $8; 3d do James Durand, Kingston, $4.

RECOMMENDED.—Berkshire sows shown by Francis Wardell, Dundas; H. J. Laurie, Hamilton; W. A. Baldwin, Toronto.

Best Boar, under 1 year, James Durand, Kingston, $12; 2d do J. & J. Carveth, Port Hope, $8; 3d do E. W. Thomson, York Township, $4.

RECOMMENDED.—A Berkshire shown by John Foott, Port Hope.

Best sow, under 1 year, James Durand, Kingston, $3; 2d do J. & J. Carveth, Port Hope, $6; 3d do J. & J. Carveth, Port Hope, $4.

RECOMMENDED.—Berkshires shown by F. W. Stone, Guelph, and R. L. Denison, Toronto.

REMARKS.—The Judges on the small breed of pigs beg to report that in making their selection they have confined themselves entirely to what they consider as really comprising the small breed, which has consequently thrown out of this class the small Yorkshires and the large Berkshires. They gave the third prize of the boars, 1 year and over, to a Chinese pig, which was large of its class, on account of its approaching more nearly to the form of the small breed. They recommend that in all future shows separate classes should be arranged for the Berkshires and other breeds, in the same manner that is now carried out with regard to the cattle and sheep. By this proceeding a considerable degree of dissatisfaction will be removed, and it will be a great benefit to the stock breeders.

CLASS XX.—POULTRY, &c.—(247 Entries.)

Judges.—Judge Campbell, Niagara; Dr. Richmond, Gananoque; W. H. Gordanier, Ernestown.

Best pair of white Dorkings, Joseph Lamb, London, $4; 2d do S. Peters, sen., London, $2.

Best pai of spangled Dorkings, S. Peters, sen., London, $4; 2d do J. J. Whitehead, Kingston, $2.

Best pair of black Polands, D. G. Forbes, Whitby, $4; 2d do Dr. Case Hamilton, $2.

Best pair of white Polands, J. J. Whitehead, Kingston, $4.

Best pair of golden Polands, A. McLean Howard, Toronto, $4; 2d do Dr. Case, Hamilton, $2.

Best pair of silver Polands, Dr. Case, Hamilton, $4.

Best pair of game fowls, A. J. Riddell, Toronto, $4; 2d do G. E. Cresswell, Tuckersmith, $2.

Best pair of Cochin China, Shanghai, Canton, or Bramah Pootra fowls, Thos. Guy, Oshawa, $4; 2d do Dr. Case, Hamilton, $2.

Best pair of black Spanish fowls, George Miller, Markham, $4; 2d do Geo. Scott, Scarboro', $2.

Best pair of black Java fowls, H. Girouard, Hamilton, $4; 2d do Dr. Case, Hamilton, $2.

Best pair of Bolton Grays, Joseph Lamb, London, $4; 2d do Dr. Case, Hamilton, $2.

Best pair of Hamburg fowls, W. M. O. King, London $4; 2d do W. M. O. King, London, $2.

Best pair of feather-legged Bantams, Samuel Peters, London, $2; 2d do Samuel Wood, Etobicoke, $1.

Best pair of smooth-legged Bantams, Samuel Peters, London, $2; 2d do Joseph Lamb, London, $1.

Best pair of Turkeys (white or colored) Dr. Case, Hamilton, $4.

Best pair of Wild Turkeys, George Miller, Markham, $4; 2d do Samuel Peters, London, $2.

Best pair of large Geese, Robert Armstrong, Markham, $4; 2d do A. H. Summerfelt, Markham, $2.

Best pair of Bremen Geese, Joseph Lamb, London, $4; 2d do Joseph Lamb, London, $2.

Best pair of Chinese Geese, John Kerr, Stamford, $4; 2d do C. O. Benedict, Niagara, $2.

Best pair of Muscovy Ducks, John Kerr, Stamford, $4; 2d do Joseph Lamb, London, $2.

Best pair of Common Ducks, Samuel Peters, London, $4; 2d do George Miller, Markham, $2.

Best pair of Aylesbury Ducks, Samuel Peters, London, $4; 2d do F. C. Copleston, Augusta, $2.

Best pair of Poland Ducks, Joseph Lamb, London, $4; 2d do John Kerr, Stamford, $2.

Best pair of Rouen Ducks, Joseph Lamb, London, $4; 2d do Samuel Peters, London, $2.

Best pair of Guinea fowls, Michael Hayes, Toronto, $4; 2d do J. J. Whitehead, Kingston, $2.

Best pair of Pea fowls, Edward Musson, Etobicoke, $4; 2d do Edward Musson, Etobicoke, $2.

Best collection of Pigeons, A. J. Riddell, Toronto, $4; 2d do George Hornshaw, Toronto, $2.

Best lot of Poultry in one pen, owned by the exhibitor, James Durand, Kingston, $6.

Best collection of Poultry entered in the various classes by one exhibitor, Joseph Lamb, London, $8.

Best pair of Rabbits, E. Smith, Toronto, $2.

Best lot of Rabbits, E. Smith, Toronto, $4.

EXTRA PRIZES.—D. G. Forbes, Whitby, pair of wild geese, $2; pair of half bred do, $1; G. S. Burrill, Cramahe, ducks—crosses of Muscovy and common $1.50; J. J. Whitehead, Kingston, pair of spangled Dorking chickens, $1; pair of white do $1; Joseph Lamb, London, pair of silky fowls $1; Dr. Case, Hamilton, pair of silky fowls, $2; pair of rumpless, do, $1; pair of frizzly do, $1; George Scarlett, Toronto, pair of French fowls, $1; R. Gisert, Toronto, lot of eight canaries, $2.

REMARKS.—The judges on poultry beg to call the attention of the Directors to the unnecessary mileage imposed upon them in the discharge of their duties for want of arrangement of the cages in such order that all the entries in a section could be viewed together consecutively, and further that the great variety of cages or coops in size or otherwise, and the defective construction of many, imposed much difficulty in viewing the birds. They recommend uniform coops provided by the Association, well lighted and ventilated.

A standard book of reference in this department should be accessible to the judges at the Secretary's Office, hereafter.

CLASS XXI.—FOREIGN STOCK.—(3 Entries.)

Judges—Andrew Starratt, Chinguacousy; Thomas Stock, East Flamborough; James Scarff, Woodstock.

Best stallion for agricultural purposes, Stephen Powell, Lewiston, diploma and $12; 2d do Farmer's Club, Niagara Co., N. Y., $12.

AGRICULTURAL PRODUCTIONS.

CLASS XXII.—GRAINS, SEEDS, &c.—(427 Entries.)

Judges—John Wade, Cobourg; Robert Laurie, St. Catherines; John Tennant, Brant; Edward Jackson, Kingston; Richard Ham, Lennox; W. A. Cooley, Ancaster.

The Canada Company's prize for the best 25 bushels Fall Wheat, Thomas T. Turnbull, South Dumfries, weight per bushel, 67 lbs, $100; 2d do by the Association, J. M. Kennedy, Blenheim, weight 66 lbs, $40; 3d do I. H. Anderson, Hamilton, 65 lbs. $20.

Best two bushels of Winter wheat, Daniel Campbell, Charlottenburg, 67½ lbs,

$10; 2d do Thomas T. Turnbull, South Dumfries, 67 lbs, $8; 3d do John Smith, Flamboro, 64½ lbs, $6; 4th do G. D. Prest, Queenston, 64 lbs, $4.

Best two bushels of Spring wheat, Robert McNair, Vaughan, 67 lbs, $10; 2d do John Mitchell, Mono, 67 lbs, $8; 3d do William Padget, Whitby, 67 lbs, $6; 4th do T McEvers, Hamilton Township, 66½ lbs, $4.

Best two bushels of Barley (two rowed) Charles Anderson, Haldimand, $6; 2d do Robert Dinwoodie, Seymour, $4; 3d do William Padget, Whitby, $2; 4th do Mrs. Harper, Etobicoke, Vol. Transactions.

Best two bushels of Barley (six rowed), I. H. Anderson, Flamboro, $6; 2d do John Mitchell, Mono, $4; 3d do Mrs. Harper, Etobicoke, $2; 4th do Geo. Scott, Scarboro, Transactions.

Best two bushels Rye, I. H. Anderson, Flamboro, $6; 2d do P. R. Palmer, Thurlow, $4; 3d do John Gray, Toronto, $2; 4th do John Gilbert, Sidney, Transactions.

Best two bushels of Oats [white,] Uriah Young, Markham, $6; 2d do Joseph Fennell, Bradford, $4; 3d do James Kennedy, Blenheim, $2; 4th do E. A. Walker, Barrie, Transactions.

Best two bushels of Oats, [black], R. L. Denison, Toronto, $6; 2d do Martin Taylor, Toronto, $5; 3d do James Laurie, Scarboro', $3.

Best two bushels of field Peas, Robert Dinwoodie, Seymour, $6; 2d do John Gilbert, Sidney, $5; 3d do Henry Platt, Hallowell, $3; 4th do John Gilbert, Sidney, $2.

Extra Prize—Wm. Lindsay, Port Hope, $2.

Best two bushels of marrow fat Peas, Alexander Shaw, Toronto, $6; 2d do John Gilbert, Sidney, $5; 3d do David Rowntree, York Township, $3; 4th do R. C. Gill, Cramahe, $2.

Extra, "Waite's King," Wm. Lindsay, Port Hope, $4; R. C. Goslin, Tyendinaga, "Blue Imperial," $2.

Best bushel of white Field Beans, R. C. Gill, Cramahe, $6; 2d do M. Kerr, Tweed, $4; 3d do John Kerr, Stamford, $3; 4th do John McGregor, Nelson Township, Transactions.

Extra—Not found till other prizes were awarded; but the best on the ground, M. C. Nickerson, Port Dover, $6.

Best two bushels Indian Corn in ear, white, John Young, Niagara, $6; 2d do Platt Hinman, Haldimand, $5; 3d do John Dew, York Township, $3; 4th do Richard Bugler, London, Transactions.

Best two do, yellow, Robert Warren, Niagara, $6; 2d do E. W. Thomson, York Township, $5; 3d do W. R. Bartlett, do, $3; 4th do Alexander Shaw, Toronto, Transactions.

Best bushel of Timothy Seed, William Tolton, Eramosa, $8; 2d do Robert Young, Ramsay, $6; 3d do Thomas Guy, Oshawa, $4.

Best bushel of Clover Seed, David Gibson, North Dumfries, $8; 2d do John Gilbert, Sidney, $6; 3d do P. R. Palmer, Thurlow, $4.

Best bushel flax seed, Perine Bros., Conestoga, $6; 2nd do P. Bartholomew, Ringwood, $4; 3d do R. C Gill, Cramahe, $2.

Best Swedish turnip seed, from transplanted bulbs, not less than 20 lbs., John Coates, Reach, $6; 2d do Alexander McDonald, Hamilton Township, $4; 3d do John Wilson, London, $2.

Best 12 lbs Field carrot seed, R. C. Gill, Cramahe, $6; 2d do H. Girouard, Hamilton, $4.

Best 12 lbs. yellow mangold wurzel seed, R. C. Gill, Cramahe, $6.

Best bale of hops, not less than 112 lbs. John Ritson, Oshawa, $20; 2d do William McGrath Springfield, $12; 3d do T. Risley, State of New York, $8.

EXTRA PRIZES.—Mr. Jeffry, Whitby, bushel Hungarian grass seed, $2; William Lindsay, Port Hope, two bushels brown Indian corn, $2; P. Bartholomew, Ringwood, sample millet seed, $2; Joseph Woodruff, Niagara, sample millet seed, $1, two bushels buckwheat, $1, sample Egyptian corn, 50c; H Girourd, Hamilton, Yellow Aberdeen turnip seed, $2, sample buckwheat, $1; W. B. Heward, Yorkville, Illinois white Indian corn in stalk, $1; M. C. Nickerson, Port Dover, 2 bushels Chinese millet, $3; R. Ibson, Toronto Township, field beans, $2; A. Shaw, Toronto, Rocky Mountain Indian Corn, 50c; G. Henry, Orford, parsley seed, 50c; Mrs. W. Boulton, Toronto, garden peas, $1; M. C. Nickerson, Port Dover, specimen corn, $1.

REMARKS.—The judges in this class have much pleasure in stating that the articles that came under their inspection were mostly of good quality, and equal if not superior to anything of the kind exhibited before, but more especially the article of Peas, many of the samples being of a very superior description.

CLASS XXIII.—ROOTS AND OTHER FIELD CROPS.—(292 Entries.)

Judges.—Thomas Burns, Glengarry; Henry Osborne, North Hastings; Daniel Campbell, Halton.

Best bushel pink-eyed potatoes, Robert Dinwoodie, Seymour, $3; 2d do Joshua Sisley, Scarboro', $2; 3d do William Burgess, Toronto, $1.

Best bushel cup potatoes, W. R. Bartlett, York Township, $3; 2d do Mrs. Harper, Etobicoke, $2; 3d do John Young, Niagara, volume of Transactions.

Best bushel goldfinders, James Best, Toronto, $3; 2nd do James Fleming, Toronto, $2; 3d do F. M. Whitelaw, Niagara, $1.

Best bushel white potatoes, John Young, Niagara, $3; 2d do William Lindsay, Port Hope, $2; 3d do William Wilson, Etobicoke, volume of Transactions; recommended, Robert Currie, Niagara.

Best bushel red potatoes, Joshua Sisley, Scarboro', $3; 2d do Mrs. Harper, Etobicoke, $2; 3d do J. D. Humphreys, Toronto, $1.

Best bushel blue potatoes, Robert Dinwoodie, Seymour, $3; 2d do William Kilpatrick, Paris, $2; 3d do Alexander McDonald, Hamilton, volume of Transactions.

Best bushel of any other sort, Robert Wells, Toronto, $3; 2d do William Lea, York Township, $2; 3d do Joshua Sisley, Scarboro', $1; commended, F. G. Nash, Niagara, R. L. Denison, Toronto, Alexander McDonald, Hamilton Township.

Best bushel Swede turnips, William Burgess, Toronto, $3; 2nd do E. W. Thomson, York Township, $2; 3d do William Tolton, Eramosa, $1.

Best bushel of Aberdeen yellow turnips, F. W. Stone, Guelph, $3.

Best 20 roots red carrots, G. J. Miller, Niagara, $3; 2d do W. Smith, Brantford Township, $2; 3d do William Lindsay, Port Hope, $1.

Best 20 roots white or Belgium carrots, W. R. Bartlett, York Township, $3; 2d do William Wilson, Etobicoke, $2; 3d do William Lindsay, Port Hope, $1.

Best 12 roots mangel wurzel [long red] Daniel Campbell, Glengarry, $3; 2d do Denis Reardon, Toronto, $2; 3d do George Leslie, Toronto, $1.

Best 12 roots yellow globe mangel wurzel, Thomas Smith, Etobicoke, $3; 2d do Wm. Burgess, Toronto, $2; 3d do F. G. Nash, Niagara, $1.

Best 12 roots long yellow mangel wurzel, Thomas Smith, Etobicoke, $3; 2d do William Burgess, Toronto, $2; 3d do Joshua Sisley, Scarboro', volume of Transactions.

Best 12 roots of Khol Rabi, C. O. Benedict, Niagara, $2; 2d do William Kilpatrick Paris, $1; 3d do A. Mason, Toronto, volume of Transactions.

Best 12 roots of sugar beet, Thomas Smith, Etobicoke, $3; 2d do F. G. Nash, Niagara, $2; 3d do Joshua Sisley, Scarboro', volume of Transactions.

Best 20 roots of parsnips, William Burgess, Toronto, $3; 2nd do Robert C. Gill, Cramahe, $2; 3d do Richard Bugler, London, volume of Transactions.

Best 20 roots of Chicory, Robert C. Gill, Cramahe, $3; 2nd do William Bilton, Toronto, $2; 3d do Thomas Wheeler, Toronto, $1.

Best two large squashes for cattle, William Burgess, Toronto, $3; 2d do W. Lane, Yorkville, $2; 3d do W. Wilson, Etobicoke, volume of Transactions.

Best two mammoth field pumpkins, W. Burgess, Toronto, $3; 2d do A. Mason, Toronto, $2.

Best four common yellow field pumpkins, B. Jackson, Haldimand, $3; 2d do Francis Johnston, Toronto, $2; 3d do G. J. Miller, Niagara, $1.

Best 20 lbs of tobacco leaf, growth of Canada West, H. Girouard, Hamilton, $4; 2d do R. C. Gill, Cramahe, $2; 3d do Josephus Reesor, Markham, volume of Transactions.

Best broom corn brush, 28 lbs, R. C. Gill, Cramahe, $4.

The Canada Company's Prize for Flax.

Best 112 lbs Flax, Perine Brothers, Conestoga, $24; 2d do by the Association, Daniel Campbell, Glengarry, $16.

Extra Entries.—Michael Hayes, Toronto, specimen of flax, recommended; C. O. Benedict, Niagara, half peck chufas or earth almonds, recommended; W. Burgess, Toronto, red globe mangel wurzel, recommended; F. W. Stone, Guelph, bushel green top Swede turnips, $2.

HORTICULTURAL PRODUCTS.

CLASS XXIV.—FRUIT.

Judges.—Thomas Reynolds, M. D., Brockville; Edward Kelly, David Murray, W. B. Simpson, Professor Hincks, Toronto.

Best 20 varieties of apples, named, (six of each) George Leslie, Toronto, $5; 2d do Allen Wilcox, Toronto Township, $4; 3d do Richard Harper, Whitby, $3.

Best 12 table apples, named (fall sort) S. Wood, Etobicoke, $3; 2d do G. J. Miller, Niagara Township, $2; 3d do James Wadsworth, Kingston, $1.

Best 12 table apples, named, (winter sort) John Brown, Toronto, $3; 2d do E. C. Campbell, Niagara, $2; 3d do E. C. Campbell, Niagara, $1.

Best 12 baking apples, named, S. Wood, Etobicoke, $3; 2d do D. G. Forbes, Whitby, $2; 3rd do R. Harper, Whitby, $1.

Best 20 variety of pears, named, (three of each) George Leslie, Toronto, $5; 2nd do H. Girouard, Hamilton, $4.

Best 12 table pears, named, (fall sort) H. Girouard, Hamilton, $3; 2nd do C. C. Small, Toronto, $2; 3d do W. Smith, Brantford Township, $1.

Best 12 table pears, named, (winter sort) George Tattle, Toronto, $3; 2d do G. J. Miller, Niagara, $2; 3d do W. H. Read, Port Dalhousie, $1.

Best dozen plums, named, dessert, J. D. Humphreys, Toronto, $3; 2d do A Harris, Rice Lake, $2; 3d do J. Wadsworth, Kingston, $1.

Best 12 baking plums, named, J. Wadsworth, Kingston, $3; 2d do A. Harris, Rice Lake, $2; 3d do E. C. Campbell, Niagara, $1.

Best quart of damsons, English, E. C. Campbell, Niagara, $3; 2d do Edward Jones, Stamford, $2; 3d do G. J. Miller, Niagara, $1.

Best 12 peaches, grown in open air, named, Eli Varey, Niagara, $3; 2d do Patrick Connor, Brockville, $2; 3d do E. C. Campbell, Niagara, $1.

Best 12 Quinces, Eli Varey, Niagara, $2; 2d do S. J. J. Brown, Niagara, $1. 50; 3d do A. W. Taylor, Barton, Transactions.

Best 3 clusters of grapes (hot house) W. Lunn, Montreal, $4; 2d do James Stephens, St. Catharines, $3; 3d do John Brown, Toronto, $2.

Best 3 clusters black Hamburg, hot house, Wm. Lunn, Montreal, $4; 2d do James Stephens, St. Catharines, $3; 3d do James Reynolds, Brockville, $2.

Best 4 clusters black grapes, grown in open air, W. H Read. Port Dalhousie, $2; 2d do Hugh McKee, Norwichville, $1.50; 3d do Hugh McKee, Norwichville, $1.

Best 4 clusters white grapes, grown in open air, W. H Read, Port Dalhousie, $2; 2d do C. O. Benedict, Niagara, $1.50; 3d do Eli Varey, Niagara, $1.

Extra—S. M. Benson, Belleville, highly commended and $2.

Best and heaviest 2 bunches of grapes, open air, W. H. Read, Port Dalhousie, $3; 2d do Thos. Briggs, jr., Kingston, $2; 3d do John Brown, Toronto, $1.50.

Best collection of grapes, grown in open air, 2 clusters of each sort, W. H. Read, Port Dalhousie, $4.

Best water melon, J. F. Jones, Brantford, $2; 2d do W. H. Read, Port Dalhousie, $1.50; 3d do Thomas Briggs, jr., Kingston, Transactions.

Best musk melon, E. C. Campbell, Niagara, $2; 2d do W. A. Baldwin, Toronto, $1.50; 3d do S. B. Harrison, Toronto, $1.

Best 6 citrons for preserving, Jas. Best, Toronto, $2; 2d do S. J. J. Brown, Niagara, $1.50; 3d do J. A. Woodruff, Niagara, Transactions.

Best 6 Nectarines, S. B. Harrison, Toronto, $2; 2d do S. B. Harrison, Toronto, $1.50.

Best display of fruit, the growth of exhibitor, distinct from other entries, not more than three specimens of each sort, George Leslie, Toronto, $10; 2d do Jas. Reynolds, Brockville, $6.

Extras.—Robert Currie, Niagara, seedling gooseberries, recommended. C. O. Benedict, Niagara, West India Gherkin, recommended. Joseph Woodruff, Niagara, dozen pawpaws, recommended. Mattaniah Kerr, Hastings, black cherries, recommended as worthy of attention, $1. Jno. W. Bevan, Yorkville, branch of grapes, recommended. L. O. Thayer, Montreal, new variety of seedling apple, recommended. Jas. Reynolds, Brockville, collection of over 90 varieties of apples, named, $10. Do. do. collection of seedling apples never before exhibited, named, $10; do. do. collection of hot house grapes, $2. Brockville Horticultural Society, three clusters white grapes, hot house, $2. E. Turner, Toronto, filberts, commended, $1. Brockville Horticultu al Society, open air peaches, $2; do. basket of fruit, worthy of honorable mention and prize of $10. Hamilton Horticultural Society, basket of vegetables and collection of fruits, $10. R. Naylor, Niagara Falls, apples, growth of 1857, recommended.

CLASS XXV.—GARDEN VEGETABLES.—(447 Entries.)

Judges—J. Menzies, North Lanark; L. H. Willmott, Pittsburg; H. J. Brown, Niagara.

Best 12 roots of salsify, W. A. Baldwin, York Township, $2; 2d do G. J. Miller, Niagara, $1.50; 3d do G. J. Miller, Niagara, $1.

Best 4 heads cauliflower, J. D. Humphreys, Toronto, $2; 2d do J. D. Humphreys, Toronto, $1.50; 3d do Samuel Ashby, Toronto, $1.

Best 4 heads cabbage (summer) A. Mason, Toronto, $2; 2d do J. Grainger, Toronto, $1.50; 3d do W. Margetson, York Township, $1.

Best 4 heads cabbage (winter) W. Burgess, Dundas street, $2; 2d do J. A. Woodruff, Niagara, $1.50; 3d do A. Mason, Toronto, $1.

Best 4 sorts winter cabbage, including Savoys, 2 of each sort, A. Mason, Toronto, $3; 2d do W. Burgess, Dundas street, $2.

Best 4 heads red cabbage, W. Burgess, Dundas street, $2; 2d do G. J. Miller, Niagara, $1.50; 3d do S. B. Harrison, Toronto, $1.

Best 12 carrots for table, long red, G. S. Armstrong, Fergus, $2; 2d do Jas. Wadsworth, Kingston, $1.50; 3d do A. Mason, Toronto, $1.

Best 12 early horn carrots, W. Lane, Toronto, $2; 2d do H. Gallagher, London, $1.50; 3d do James Best, Toronto, $1.

Best 12 table parsnips, J. Wadsworth, Kingston, $2; 2d do G. S. Armstrong, Fergus, $1 50; 3d do W. A. Baldwin, York Township, $1.

Best 6 roots of white celery, W. Burgess, Dundas Street, $2; 2d do W. Margetson, York Township, $1.50; 3d do W. R. Bartlett, York Township, $1.

Best 6 roots of red celery, W. Burgess, Dundas Street, $2; 2d do A. W. Taylor, Barton, $1.50; 3d do W. A. Baldwin, York Township, $1.

Best dozen of capsicums, Joseph Woodruff, Niagara, $2; 2d do A. Shaw, Toronto, $1.50; 3d do C. O. Benedict, Niagara, Transactions.

Best collection of capsicums, C. O. Benedict, Niagara, $3; 2d do W. Lane, Toronto, $2; 3d do J. D. Humphreys, Toronto, $1.50.

Best 6 egg plants, purple, R. Currie, Niagara, $2; 2d do C. O. Benedict, Niagara, $1.50; 3d do E. C. Campbell, Niagara, $1.

Best 12 tomatoes, Joseph Woodruff, Niagara, $2; 2d do John Young, Niagara, $1.50; 3d do S. Ashby, Toronto, Transactions.

Best assorted collection of tomatoes, 6 of each sort, C. O. Benedict, Niagara, $3; 2d do John Young, Niagara, $2; 3d do R. C. Gill, Cramahe, $1.50.

Best 12 blood beets, G. J. Miller, Niagara, $2; 2d do M. Kerr, Tweed, $1.50; 3d do W. Proudfoot, Toronto, Transactions.

Best peck of white onions, John Young, Niagara, $2; 2d do A. W. Taylor, Barton, $1.50; 3d do Thomas Wheeler, Toronto, $1.

Best peck of yellow onions, John Logan, Toronto, $2; 2d do John Young, Niagara, $1.50; 3d do W. Gordon, Toronto, Transactions.

Best peck of red onions, John Young, Niagara, $2; 2d do Robert Currie, Niagara, $1.50; 3d do A. W. Taylor, Barton, $1.

Best 12 white turnips (table) J. Grainger, Toronto, $2; 2d do James Best, Toronto, $1.50; 3d do F. W. Stone, Guelph, Transactions.

Best 12 yellow turnips, (table) F. W. Stone, Guelph, $2; 2d do F. W. Stone Guelph, $1.50

Best 12 ears sweet corn, C. O. Benedict, Niagara, $2; 2d do James Clark, Toronto, $1.50; 3d do A. W. Taylor, Barton, Transactions.

Best and greatest variety of early potatoes, half peck of each sort, named, James Best, Toronto, $3; 2d do W. Lindsay, Port Hope, $2; 3d do E. C. Campbell, Niagara, $1.

Best 4 squashes, (table) Joseph Woodruff, Niagara, $2; 2d do S. J. J. Brown, Niagara, $1.50; 3d do S. J. J. Brown, Niagara, $1.

Best and greatest variety of vegetables [distinct from other entries,] each named, J. D. Humphreys, Toronto, $4; 2d do W. A. Baldwin, Toronto, $3.

EXTRA.—Joseph Woodruff, Niagara, half-bushel sweet potatoes, $2; Lunatic Asylum, Toronto, 12 capsicums; 12 blood beets; peck yellow onions; peck red onions, commended, and $1.50. J. D. Humphreys, Toronto, bower cucumbers, $1. S. J. J. Brown, Niagara, ten kinds squashes, $4. E. C. Campbell, Niagara, sorgho sucre, (sugar cane) $1; do coffee bean, $1; do white egg plants, $1. Robt. Naylor, Niagara Falls, West India gherkins, 50c. L. O. Thayer, Montreal, cocoa-nut squash, $1; do white spine cucumber, 50c. W. A. Baldwin, Toronto, 6 lettuces, $1. W. Burgess, Dundas Street, savoy, $2. I. H. Anderson, West Flamboro', pop-corn, $1. E. C. Campbell, Niagara, Martynia Pro-

boscidia, 50c. A. Macdonald, Toronto, 6 heads Illinois corn, $1. R. Stibbald, York Township, 6 leeks, $2. Patterson & Brothers, Richmond Hill, sweet potatoes, open air, $2. James Fleming, Toronto, collection of garden and field seeds, diploma.

REMARKS OF JUDGES.—Vegetables good for the season, squashes good, cabbages good. Of some articles entered, such as brocoli, none found. Several extra prizes awarded, and well worthy of notice. Every credit is due Mr. Fleming for his attention and good management in the department in which he has charge. Every praise is due the President, Secretary, and Treasurer, for the information given in their several departments. We recommend that three permanent places be fixed for holding the Annual Provincial Exhibition, and would recommend Kingston for the extreme east, Toronto for the middle, and London for the extreme west. We also recommend that there be a limited number of booths for refreshments on the grounds, and that they be restricted to a uniform rate of charges.

CLASS XXVI.—PLANTS AND FLOWERS.—(112 Entries.)

Judges—W. B. Simpson, Dr. Reynolds, Professor Hincks, David Murray, Edmund Kelly.

Best dozen dahlias, Wm. Faris, Sorel, C. E., $2; 2d do George Leslie, Toronto, $1.

Best and largest collection of dahlias, Wm. Faris, Sorel, $5.

Best bouquet of cut flowers, for table, Wm. Faris, Sorel, $2; 2d do S. B. Harrison, Toronto, $1.50; 3d do Wm. Lane, Toronto, $1.

Best hand bouquet, J. M. Hirschfelder, Toronto, $2; 2d do John Gray, Lakeview Nursery, $1.50; 3d do Wm. Faris, Sorel, $1.

Best collection of greenhouse plants, not less than 12 specimens, S. B. Harrison, Toronto, $10; 2d do J. M. Hirschfelder, Toronto, $6; 3d do Geo. Leslie, Toronto, $4.

Best twelve pansies, Jas. Best, Toronto, $2; 2d do George Leslie, Toronto, $1.50; 3d do J. M. Hirschfelder, Toronto, $1.

Best 6 fuchsias, in flower, Thomas Buchanan, Toronto, $3; 2d do Geo. Leslie, Toronto, $2; 3d do John Gray, Lakeview Nursery, $1.

Best 6 cockscombs, E. C. Campbell, Niagara, $2; 2d do R. Bugler, London, $1.50.

Best 6 balsams in bloom, Robert C. Gill, Cramahe, $2; 2d do T. Buchanan, Toronto, $1.50.

Best collection of China asters, S. B. Harrison, Toronto, $2; 2d do H. Girouard, Hamilton, $1.50; 3d do John Gray, Toronto, $1.

Best collection of ten weeks' stock, Hon. George Cruickshank, Toronto, $2; 2d do Thos. Buchanan, Toronto, $1.50; 3d do S. B. Harrison, Toronto, $1.

Best collection of hybrid perpetual roses, not less than 12 blooms, John Gray, Toronto, $2.

Best collection of verbenas, not less than 12 varieties, Samuel Ashby, Toronto, $3; 2d do S. B. Harrison, Toronto, $2.

Best 6 petunias, Samuel Ashby, Toronto, $2; 2d do J. M. Hirschfelder, Toronto, $1.50; 3d do E. C. Campbell, Niagara, $1.

Best 12 phloxes, George Leslie, Toronto, $2.

Best 6 hardy shrubs, George Leslie, Toronto, $2.

Best 12 hollyhocks, George Leslie, Toronto, $2.

Best display of plants in flower, distinct from other entries, James Fleming, Toronto, $10.

Best collection of native plants, dried and named, Mrs. C. P. Trail, Rice Lake, $6; do Alex. Kirkwood, Toronto, equal, $6.

Best specimen of useful and ornamental rustic work for the garden, John Nichol, Brockville, $4; 2d do John McNab, York Township, $3.

EXTRA PRIZES.—John Gray, Toronto, collection of fuchsias, $2; collection Achimenes, $1; do Gloxinias, $1. Madame W. F. Monaghan, Montreal, herbarium of Canadian flowers, $8. H. Girouard, Hamilton, bouquet of native flowers, $1.50. Wm. Lane, Toronto, collection phloxes, $2. J. M. Hirschfelder, Toronto, collection petunias, $2. S. B. Harrison, Toronto, collection roses, $2. Jas. Fleming, Toronto, American aloes, $1.50; collection cactus, $1.50. John Gray, Toronto, collection camelias, $2. H. Girouard, Hamilton, collection dried plants, $4. Mrs. W. R. Bartlett, York Township, collection of Canadian grasses, named, $2.

CLASS XXVII.—DAIRY PRODUCTS.—(86 Entries.)

Judges—Robert McConnor; George Wiseman.

Best firkin of butter, not less than 28 lbs., Wm. Tolton, Eramosa, $10; 2d do Mrs. Wm. Wilson, Etobicoke, $3; 3d do Robert Fuller, Pickering, $6; 4th do Henry Platt, Hallowell, $4.

Best cheese, not less than 30 lbs., Hiram Ranney, Dereham, $10; 2d do P. R. Palmer, Thurlow, $8; 3d do Hiram Ranney, Dereham, $6; 4th do Hiram Ranney, Dereham, $4.

Best 2 Stilton cheese, not less than 14 lbs. each, Hiram Ranney, Dereham, $10; 2d do Hiram Ranney, Dereham, $8; 3d do Hiram Ranney, Dereham, $6; 4th do Hiram Ranney, Dereham, $4.

Best butter, not less than 14 lbs., in firkins, crocks, or tubs, P. R. Palmer, Thurlow, $6; 2d do Wm. Smith, Whitby, $5; 3d do James Tran, Markham, $4; 4th do David Smellie, Vaughan, $3.

Best honey, in the comb, not less than 10 lbs., Hugh McKee, Norwichville, $3; 2d do Hugh McKee, Norwichville, $2; 3d do Dean Tiffany, Delaware, Transactions; 4th do Wm. Farris, Sorel, Transactions.

Best jar of clear honey, Geo. S. Armstrong, Fergus, $4; 2d do Hugh McKee, Norwichville, $2; 3d do E. W. Thomson, York Township, Transactions; 4th do George Miller, Markham, Transactions.

EXTRA.—Hiram Ranney, Dereham, pine apple cheese, $6.

REMARK.—The judges are of opinion that in future the names of the exhibitors should not be attached to articles exhibited.

CLASS XXVIII.—AGRICULTURAL IMPLEMENTS.—(233 Entries.)

Judges—Hon. David Christie, Major Campbell, M.P.P., Robert Bell, M.P.P., A. McKellar, M.P.P., Wm. McDougall, M.P.P., John Dew, E. D. Norton, of Toronto; John Tilt Toronto Township, Thomas Paterson, Streetsville, John Watson, York Township.

Best wooden plough, Isaac Modeland, Brampton, diploma and $12; 2d do W. Mahaffy, Brampton, $8; 3d do G. Morley, Thorold, $4.

Best iron plough, J. Gray, Rodgerville, diploma and $12; 2d do G. Prentice, Columbus, $8; 3d do W. Jeffrey, Thornhill, $4.

Best subsoil plough, H. A. Massey, Newmarket, diploma and $12.

Best pair of harrows, Isaac Modeland, Brampton, $6; 2d do M. Fenwick, Weston, $4; 3d do Johnson & Allan, Whitby, $2.

Best fanning mill, J. H. Smith, Orangeville, diploma and $6; 2d do L. Houck, Whitby, $4; 3d do D. E. Norton, Toronto, $2.

Best horse-power thrasher and separator, Haggart Bros., Brampton, diploma and $20; 2d do W. Eastwood, Ingersoll, $12; 3d do J. Abill, Vaughan, $8.

GALLOWAY BULL.

Winner of the First Prize as a two year old Galloway Bull, at the Provincial Exhibition, Toronto, 1858. The property of John McClain, Essa.
See page 179.

Best grain drill, R. Halliday, Toronto, diploma and $12; 2d do J. Atkinson, Vaughan, $8; 3d do Thomas Grant, Hope, $4.

Best seed drill or barrow, R. Halliday, Toronto, $4; 2d do W. Crowe, Guelph, $3; 3d do W. Crowe, Guelph, $2.

Best straw cutter, (hand) R. Halliday, Toronto, $5; 2d do M. Willoughby, Toronto, $4; 3d do G. Robson, Whitby, $3.

Best straw cutter, (power) P. Logan, Paris, $5; 2d do H. & J. McLaren, Lowville, $4; 3d do I. Modeland, Brampton, $3.

Best smut machine, J. Gartshore, Dundas, $6; 2d do Israel Seaman, St. Catherines, $3.

Best portable grist mill, J. Gartshore, Dundas, $12.

Best machine for cutting roots for stock, W. D. Westman, King, $6; 2d do A. Cant, Galt, $4; 3d do A. Cody, Newmarket, $2.

Best clover cleaning machine, A. Harris, Clinton, $12; 2d do R. & R. S. Patterson, Belleville, $8.

Best cider mill and press, L. Howell, Jerseyville, $12; 2d do Sampson & Sons, St. Catharines, $8.

Best cheese press, G. McWain, Whitby, $8; 2d do J. Gilbert, Sidney, $6.

Best churn, J. W. Phillips, Thornhill, $3; 2d do I. S. Leflar, Streetsville, $2; 3d do J. Hogg, Toronto, $1.

Best two-horse waggon, W. Scarff, Woodstock, $12; 2d do Thomas Speight & Son, Markham, $8; 3d do R. L. Denison, jr., Toronto, $4.

Best one-horse light market waggon, S. Lake, Newburgh, $10; 2d do J. Shuttleworth, Weston, $8; 3d do Little & Gould, Milton, $4.

Best farm sleigh, I. Modeland, Brampton, $8.

Best horse rake, P. Mallaby, Weston, $4; 2d do J. Bettschen, Wilmot, $3; 3d do A. Harris, Clinton, $2.

Extra.—F. G. Willson, Saltfleet, commended, $2.

Best metal roller, I. S. Leflar, Streetsville, $11; 2d do H. A. Massey, Newcastle, $8.

Best wooden roller, A. C. Bruce, Glenmorris, $10.

Best garden roller, H. A. Massey, Newcastle, $4; 2d do A. C. Bruce, Glenmorris, $2.

Best stump extractor, H. & J. McLaren, Lowville, $8; 2d do J. Stitt, Prescott, $4; 3d do Benjamin Cole, Quebec, $2.

Best reaping machine, Bell & Lawrason, St. George, diploma and $20; 2d do Patterson & Brothers, Richmond Hill, $12; 3d do J. Watson, Ayr, $8.

Best mowing machine, I. S. Leflar, Streetsville, diploma and $20; 2d do R. & R. S. Patterson, Belleville, $12; 3d do Patterson & Brothers, Richmond Hill, $8.

Best combined mower and reaper, R. & R. S. Patterson, Belleville, diploma and $20; 2d do H. A. Massy, Newcastle, $12.

Best Potato Digger, G. Robson, Markham, $3; 2d do G. Robson, Markham, $2.

Best specimen of Wire Fencing, not less than two rods, erected on the ground, W. H. Rice, Toronto, $8.

Best field or two-horse Cultivator I. S. Leflar, Streetsville, $12; 2d do A. C. Bruce, Glenmorris, $8; 3d do W. Crowe, Guelph, $4.

Best Horse Hoe, or single Horse Cultivator, H. A. Massey, Newcastle, $4; 2d do A. Harris, Clinton, $3; 3d do R. & R. S. Patterson, Belleville, $2.

Best machine for making Drain Tiles, G. Smart, Bowmanville, diploma and $10.

Best half-dozen Hay Rakes, W. Tait, Duart, $3; 2d do W. Tait, Duart, $2.

Best half-dozen Manure Forks, Manufacturing Company, Oshawa, $3; 2d do D. F. Jones & Co., Gananoque $2.

Best half-dozen Hay Forks, Manufacturing Company, Oshawa, $3; 2d do Manufacturing Company, Oshawa, $2; 3d do Manufacturing Company Oshawa, Transactions.

Best half-dozen Scythe Snaiths, W. Tait, Duart, $3.

Best Ox-yoke and Bows, P. Hinman, Haldimand, $2; 2d do P. Hinman, Haldimand, $1; 3d do A. Bigham, Etobicoke, Transactions.

Best Grain Cradle, W. Tait, Duart, $2; 2d do W. Tait, Duart, $1; 3d do D. Drummond & Co., Kingston, Transactions; Extra. Samuel Purdy, Kingston, $2.

Best half-dozen Grain Shovels. D. F. Jones & Co., Gananoque. $3.

Best half-dozen iron (flat) Shovels, Manufacturing Company, Oshawa, $3; 2d do D. F. Jones & Co., Gananoque, $2.

Best half-dozen Spades, D. F. Jones, & Co., Gananoque, $3; 2d do D. F. Jones & Co., $2.

Best half-dozen Steel Hoes, Manufacturing Company, Oshawa, $3; 2d do D. F. Jones & Co., Gananoque, $2.

Best Straw Fork, wood, T. Moore, Etobicoke, $2; 2d do T. Moore, Etobicoke, $1; 3d do R. L. Denison, Toronto, Transactions.

Extra Prizes.—John Ptolemy, Saltfleet, Corn Sheller, $2. Thos. Drummon & Co., Kingston, Assortment Manure and Potato Forks, $4. Jacob Bettschen, Wilmot, Gang Plough, $3. Samson & Son, St. Catharines, Gang of Ploughs, $3. Manufacturing Company, Oshawa, six Spading Forks, $1.50. Israel Seaman, St. Catharines, Rotary Grain Separator for mill use, $4; Vertical Bran Duster for do, $3. Anthony Copp, Hamilton, Agricultural Furnace, $2. Rice Lewis & Son, Toronto, collection of English, American and Canadian Agricultural Implements and Machines, for exhibition only, commended. D. Sampson, Yorkville, Broadcast Sowing Machine, $2. Manufacturing Company, Oshawa, six Garden Rakes, $2; do six Weeding Hoes, $2. Thomas Drummond & Co., Kingston, three Hay Rakes, $1.50; 3 Scythe Snaiths, $1.50; 12 Broom Handles, $1. Edward Musson, Etobicoke, Portable Gristmill, foreign manufacture, $2. A. C. Bruce, Glenmorris, clover seed gathering machine, $3. Alexander Thompson, Uxbridge, Model Frame Barn, $1.

Remarks.—The Fanning Mill, No. 1., exhibited by D. E. Norton, Toronto, is a new Machine to the Judges, but from its general appearance and principle would recommend it to the public. The Judges beg to state that on account of the bad arrangement and classifying of the implements on the ground, their labor has been increased tenfold; and they would take the liberty of suggesting that in future the above evil may be remedied by a regular classifying and putting together the articles as they appear in the list. By paying a little attention to the above, half the labor would be saved, and a more perfect and satisfactory decision arrived at.

CLASS XXIX.—FOREIGN AGRICULTURAL IMPLEMENTS.—(2 Entries.)

Judges.—J. B. Rogers, Northumberland; J. B. Bisby, Toronto; E. Williams, John Dew, Toronto.

Best Cultivator, Parsons & Co., Brownville, New York, diploma and $5.

CLASS XXX.—CABINET WARE AND OTHER WOOD MANUFACTURES.
(133 Entries.)

Judges.—O. T. Pruyn, Lennox; J. J. Whitehead, Kingston; William Hay, Toronto; G. E. Pell, Hamilton.

Best model Bee Hive, R. C. Gill, Cramahe, $3.

Best half-dozen Corn Brooms, M. B. Beasley, Hamilton, $2.

Best dozen turned Broom Handles, W. Tait, Duart, $2.

Best Centre Table, Jacques & Hay, Toronto, $6; 2d do J. W. Morton, Hamilton, $4.

Best specimen of Cooper's Work, R. S. Dodd, Ayr, $5; 2d do J. B. Way, Whitby, $3.

Best 10 lbs. Curled Hair, Pierson & Benedict, Niagara, $3

Best 6 Dining-room Chairs, Jacques and Hay, Toronto, $5; 2d do Assignees of T. Fuller & Co., Oshawa, $3.

Best Drawing-room Sofa, Jacques & Hay, Toronto, $8; 2d do Assignees of T. Fuller & Co., Oshawa, $5.

Best Set of Drawing-room Chairs, Jacques & Hay, Toronto, $8.

Best 4 or 6 pannelled Door, G. K. Burrowes, Toronto, $3; 2d do E. C. Scarlett, Toronto, $2.

Best 100 feet of machine-wrought Moulding, E. C. Scarlett, Toronto, $3.

Best 100 feet of wrought Flooring, E. C. Scarlett, Toronto, $3.

Best School Desk and Chairs (price considered), Jacques & Hay, Toronto, $4.

Best 2 bundles of Shingles, split, Peter Pilkie, Barrie, $3; 2d do W. Lutes, Townsend, $2.

Best two bundles of Shingles, sawed, Wm. Lutes, Townsend, $3.

Best Side-board, Jacques & Hay, Toronto, $6.

Best Spinning-wheel, S. Creighton, Toronto, $2.

Best collection of specimens of Turning in Wood, Jacques & Hay, Toronto, $6; 2d do C. R. Parkes, Toronto, $4.

Best 3 Wash Tubs, Harding McConnell, Vienna, $2; 2d do Aaron Dame, Belleville, $1.

Best half-dozen Wash Boards, zinc covered, T. Drummond & Co., Kingston, $3.

Best half-dozen Wash Boards, not covered, R. C. Gill, Cramahe, $2.

Best half-dozen specimens of Willow Ware, John Osborne, Toronto, $3.

Best half-dozen Wooden Pails, R. S. Dodd, Ayr, $2; 2d do Aaron Dame, Belleville, $1.

Best Window Sash, hung in frame (12 lights), Smith, Burke & Co., Toronto, $4; 2d do E. C. Scarlett, Toronto, $3.

Best collection of Handles for Tools, Thomas Moore, Etobicoke, (deserving of special mention) $10.

Extra Prizes.—Abiel Odell, Bowmanville, Patent Washing Machine, $2; Thomas G. Moule, Toronto, Black Walnut Wardrobe, $5; G. Fischer, Morristown, Ladies' Fancy Work Table, $2; J. W. Morton, Hamilton, Cylinder Book-case, $2; Therapeutic Chair, $1; Thomas Moore, Etobicoke, Models of Short Boots, $1; do do, dozen Ladies' Busks, $1; D. Thurston, Toronto, Wooden Tubing for conducting water, diploma and $2; W. Hodson, Toronto, Venetian Window Blinds, $1; Thomas McMurchy, Glenwilliam, Model of a Mangle, $2; Carroll & Segsworth, Toronto, Alarm Bedstead, $1; Harding McConnell, Washing Tubs and Keelers, $1; do do, Walnut Patent Pail, $1; A. & J. Cant, Galt, pair of movable Building Scaffolds, $1; M. B. Beasley, Hamilton, 6 Corn Whisks, $1; do do, 6 Hearth Brooms, $1; Wm. Mathews, Toronto, Music Stool, $1; Assignees of T. Fuller & Co., Oshawa, Pier Table, $2; do do, Arm Chair, $2; Jacques & Hay, Toronto, 6 Japan Chairs, $1; do do, Wardrobe, $5; Dressing Table, $1; do, Wash-stand, $1; do Dressing Glass, $1; do two Bedroom Chairs, $1; do, Work Table, $2; David Keddie, Kingston, Drawing Room Furniture, $4; John Dewe, Toronto, specimen Pine Plank from Nottawasaga, $1; E. C. Campbell, Niagara, portable Office Stools, $1; James Rodgers, York Township, half-dozen Axe Handles, $1; Joseph Barrett, Albion, Boot-jack, 50c; Jacques & Hay, Toronto, Rocking Chair, $1;

Robert Campbell, Toronto, two Walking Sticks, 50c; Smith, Burke & Co., Toronto, two Boards, $1; A. M. Christie, Yorkville, Shaving Chair, $1; Smith Burke & Co., set Wood Mouldings, $1; Jacques & Hay, Toronto, specimen Wood Carving, diploma; Assignees Fuller & Co., Oshawa, Bureau, $2; F. Poileck, Hamilton, Arm Chairs, $1.

REMARKS.—The Judges of class 30, beg to state to the Directors, that, owing to a want of arrangement in the classification of the articles, they feel that the exhibitors have not had a fair chance of displaying their goods to the best advantage, and the Judges have had considerable trouble in coming to a fair award.

CLASS XXXI.—CARRIAGES, SLEIGHS, &C.—(55 entries.)

Judges—W. H. Nichol, Hamilton; D. F. Jones, Gananoque; C. B. Hewitt, Toronto.

Best wrought-iron Axle, A. C. Chewitt & Co., Kingston, $3.
Best two pairs of Carriage Hubs, Williams & Cooper, Hamilton, $3.
Best specimen of Carriage Rims or Felloes, Williams & Cooper, Hamilton, $3.
Best dozen Carriage Spokes, machine made, Williams & Cooper, Hamilton, $3.
Best two-horse Pleasure Carriage, Williams & Cooper, Hamilton, $10; 2d do, Richard Owen, Toronto, $6.
Best one-horse Pleasure Carriage, Williams & Cooper, Hamilton, $8; 2d do, David Ford, Whitby, $5.
Best Child's Carriage, [price considered] Barr & Bingally, Cobourg, $3.
Best pair of steel carriage Springs, Peter Mallaby, Weston, $3.
EXTRA.—McCabe & Co., Hamilton, one-horse pleasure Gig, $4.

CLASS XXXII.—FINE ARTS.—[350 entries.]

Judges.—Dr. Daniel Wilson, Toronto; Dr. Barker, Kingston; D. B. O. Ford, Hamilton.

PROFESSIONAL LIST.

Oil.

Landscape, best, Canadian subject, Robert Whale, Burford, $12.
Marine Painting, best, Canadian subject, W. N. Cresswell, 2d prize, Harpurhey, $6.
Original composition, best other, C. Loeffler, Toronto, $12; 2d do Stewart Westmacott, Toronto, $6.
Portrait, best, Maurice Polak, Toronto, $10; 2d do Robert Whale, Burford, $6.
EXTRA.—Thomas Fitzgerald, Toronto, $4.

In Water Colors.

Animals, best, (grouped or single) Armstrong & Co., Toronto, $3; 2d do, R. J. Griffith, Toronto, $5.
Flowers, best, (grouped or single) Mrs. W. K. Sargent, Woodstock, $5; 2d do do do, $3.
Landscape, best, Canadian subject, R. J. Griffith, Toronto, 2d prize, $5.
Marine View, best, Canadian subject, Armstrong, Beere, & Hime, Toronto, $8.
Miniature, best, Mrs. W. K. Sargent, Woodstock, $6; 2d do Mrs. W. K. Sargent, $4
Original composition, Mrs. Dr. Hornby, Brockville, 2d prize, $5.
Portrait, best, Stewart Westmacott, Toronto, $6; 2d do Hoppner Meyer, Toronto, $4.

Pencil, Crayon, &c.

Coloured Crayon, best, Armstrong, Beere & Hime, Toronto, $5; 2d do Daniel Adamson, Toronto, $3.

Pen and Ink Sketch, best, J. T. Rolph, Toronto, $5; 2d do J. T. Rolph, Toronto, $3.

Portrait, best Crayon, Maurice Polak, Toronto, $5; 2d do Maurice Polak, Toronto, $3.

AMATEUR LIST.

Oil.

Animals, best, grouped or single, Mrs. Aikins, Toronto, 2d prize, $5.

Landscape, best, Canadian subject, Mrs. Dr. M. D. French, Toronto, $8; 2d do J. H. Whale, Burford, $5.

Portrait, best, J. H. Whale, Burford, $5.

In Water Colors.

Animals, best, grouped or single, Herbert Hancock, Toronto, $6.

Flowers, best, Mrs. Colley Foster, Toronto, $4; 2d do Herbert Hancock, Toronto, $3.

Landscape, best, Canadian subject, T. D. Betfield, Grafton, $6; and Captain Caddy, Hamilton, equal, $6; 2d do Miss Eccles, Toronto, $4, and Capt. Caddy, Hamilton, $4.

Miniature, best, E. J. Chesley, Toronto, $5; 2d do Mrs. John Carey, Brantford, $3.

Portrait, best, Miss Martha Thompson, Toronto, $5.

Pencil, Crayon, &c.

Coloured Crayon, best, Dr. F. Wright, Toronto, $4; 2d do Miss M. Jones, Eglington, $3.

Crayon Drawing, best, Miss Imogene Jones, Brockville, 2d prize, $3.

Pencil Drawing, best, Miss S. J. Cartwright, Kingston, $4; 2d do Miss G. J. Houghton, Toronto, $3.

Portrait, best Pencil, Miss Fanny Sutherland, Credit, $4.

Portrait, best Crayon, Miss Imogene Jones, Brockville, $4.

Architectural Drawing, Modelling, Engraving, &c., &c.

Architectural Drawing, best, Matthew Sheard, Toronto, $6; 2d do F. P. Rubidge, Toronto, $4.

Architectural Drawing, best perspective, Cumberland & Storm, Toronto, $6; 2d do Cumberland & Storm, Toronto, $4.

Ambrotypes, best collection of, E. J. Palmer, Toronto, $6.

Carving in Wood, best specimen of, David Fleming, Toronto, $8; 2d do D. Fleming, Toronto, $4.

Carving in Stone, best specimen of, N. L. Steiner, Toronto, $8; 2d do Yale & Commer, Toronto, $4.

Carving and Gilding, best specimen of, J. E. Pell, Toronto, $8.

Composition of natural foliage [Canadian] applicable to architectural details, best drawing, Herbert Hancock, Toronto, $8.

Best Wood Engraving [block with proof], Jno. B. Seymour, Toronto, $6.

Best Engraving on Steel, A. W. Graham, Toronto, $6; 2d do T. Wheeler, Toronto, $4.

Best Seal Engraving, Archd. M. Barr, Toronto, $8; 2d do Thos. Wheeler, Toronto, $4.

Best Lithographic Drawing, Fuller & Bencke, Toronto, $6; 2d do Fuller & Bencke, Toronto, $4.

Best Colored Lithographic Drawing, Fuller & Bencke, Toronto, $8; 2d do Fuller & Bencke, Toronto, $4; extra, John Ellis, Toronto, diploma.

Best specimen of Modelling in Plaster, Farrell & Duckworth, Toronto, $8; 2d do Farrell & Duckworth, Toronto, $5.

Best specimen of Ornamental Penmanship, H. Browne, Toronto, $1; 2d do C. E. Roberts, Toronto, $2; extra, John B. Steele, Belleville $1.

Best collection of Photographs, E. J. Palmer, Toronto, $8; 2d do W. N. Cresswell, Harpurhey, $5.

Best specimen of Stained Glass, Joseph McCausland, Toronto, 2d prize, $2.

Best Surveyor's plans, C. E. Roberts, Toronto, $6.

EXTRA ENTRIES.—Thomas Fuller, Toronto, 3 Views of Churches, $2; E. J. Palmer, Toronto, Colored Photographs, $2; J. DeBeerski, Toronto, Photographs, $2; Maclear & Co., Toronto, Lithographic Engraving, $3; Miss Caroline Gibbard, London, Illustrations in Etching of the Wild Huntsman, $2; Rev. V. Clements, Peterboro', sketches from nature of Canadian Wild Flowers, $2; Miss Eccles, Toronto, Water Colored Landscapes, $2; Mrs. Dr. Aikins, Toronto, Anatomical Painting, $2; Thomas Wheeler, Toronto, Die Sinking, $2; Maurice Polack, Toronto, Oil Painting, executed by him in Europe, $3; W. H. Brummitt, Toronto, six Painted Vases, $4; ornamented glass Table Top, $2; James Nation, Toronto, Sculpture in Wood, $5; William Hearn, Toronto, Ornamental Painting and Lettering on Glass, $5; William Reddan, Toronto, "Scagliola" Imitations of Marble, $5 and Diploma; Misses S. & J. Graham, Acton, Crystal Painting on Glass, $3; Messrs. Boulton & Ellis, Toronto, Large Map of the City of Toronto, Diploma.

CLASS XXXIII.—GROCERIES, PROVISIONS, &C.—(187 Entries.)

Judges.—E. A. McNaughton, Newcastle; J. Wade, Port Hope; E. C. Fisher, Etobicoke.

Best samples of Barley, pot and pearl, F. A. Whitney & Co., Toronto, $3; 2d do D. Campbell, Charlottenburg, $2.

Best collection of specimens of Biscuit, W. Christie, Toronto $4; 2d do Dodgson, Shields & Morton, Toronto, recommended, $3.

Best sample of Shoe Blacking, P. R. Lamb, Toronto, $2.

Best collection of Bottled Pickles, Rowland & Co., Toronto, $2; 2d do R. C. Gill, Cramahe, $2.

Best sample of Buckwheat Flour, F. A. Whitney & Co., Toronto, $3; 2d do P. R. Palmer, Thurlow, $2.

Best collection of Candles, Parson Bros., Toronto, $3; 2d do Patrick Mulleney, Toronto, $2.

Best 20 lbs of Chickory, D. Crawford & Co., Toronto, $4.

Best collection of Confectionery, Smith & Wills, Toronto, $5; 2d do William Hessin, Toronto, $3.

Best sample of Flour, A. McNaughton, Newcastle, $6; 2d do A. McNaughton, Newcastle, $4; extra, Edward Lawson, Bolton Village, sample of Spring Wheat Flour, $4.

Best sample of Glue, 14 lbs, P. R. Lamb, Toronto, $4.

Best sample of Indian Corn Meal, F. A. Whitney, & Co., Toronto, $3; 2d do, John Moore, Etobicoke, $2.

Best sample of Isinglass, Lyman Brothers, Toronto, $2.

Best Friction Matches, James Butter, Toronto, $2.

Best collection of Medicinal Herbs, Roots and Plants, (native growth) R. W. Elliott, Toronto, $8; 2d do, R. W. Elliott, Toronto, $4.

Best jar of Mustard, D. Crawford & Co., Toronto, $3.

Best sample of Oatmeal, W. R. Fergus, Fergus, $3; 2d do, David Towers, Darlington, $2.

Best specimen of Oils extracted from plants, Reesby, Dossor, & Co., Toronto, $3.

Best specimens of Oils, linseed and rape, Lyman Bros, Toronto, $3; 2d do, Lyman Bros, Toronto, $2.

Best six kinds of Preserves, John Gilbert, Sidney, $3; 2d do, James Harvey, Barton, $2.

Best lot of Sauces for table use, Rowland & Co., Toronto, $3.

Best box of Soap, 28 lbs., Parson Bros, Toronto, $3; 2d do, Patrick Mulleney, Toronto, $2.

Best collection of Fancy Soap, Leitch & Burns, Stratford, $5.

Best 12 lbs of Potato Starch, A. McNaughton, Newcastle, $3.

Best 12 lbs of Corn Starch, D. Crawford & Co., Toronto, $3.

Best 12 lbs of Flour Starch, A. McNaughton, Newcastle, $3.

Best 30 lbs of Maple Sugar, D. Tiffany, Deleware, $4; 2d do, M. Kerr, Tweed, $2; and R. Harper, Whitby, recommended, $2.

Best 14 lbs Tobacco, Canadian manufactured, Geo. Peck, Toronto, $4; 2d do do do $2.

EXTRA ENTRIES.—Lyman Bros, Toronto, samples of Chemicals and Druggists' Preparations, $2; do Perfumery, $2; J. Hamilton, Pickering, Split Peas, $2; Turner Bros, Buffalo, N. Y., Lemon Syrup, Raspberry do, Ginger Wine, recommended; Parson Bros, Toronto, pure Coal Oil, recommended; Eby & Dewitt, Bridgeport, Oil Cake, $2; S. Grecy, Toronto, bottled India Ale, Pale Ale, and Porter, $2; do, Casks of India Ale, and Pale Ale, $2; P. R. Lamb, Toronto, sample Neats' Foot Oil, recommended; do, sample of Ground Bones, for manure, $2; A. Williams, Cobourg, Harness Blacking, recommended, $1; do, Black Ink, recommended, $1; F. A. Whitney, Toronto, Rice Flour, $2; J. W. Bevan, Yorkville, two bottles Wine, vintage of 1856, recommended; G. Coles, Yorkville, Confectionery, Ice Cake, recommended; John Nasmith, Toronto, Cabin, Wine, Abernethy, Elgin, Soda, Lemon, and Pic-nic Biscuits and Crackers, $3 and diploma; D. Ross, Toronto, Bride's Cake, recommended; Hall and Clarke, Sarsaparilla Pop, Soda Water, Mineral Water, Ginger Beer and Root Beer, $2; George McLean, Toronto, a Patent Medicine, recommended; J. Alexander, Toronto, Caledonian Ginger Wine, $2; Sparkling Champagne Ginger Wine, Diploma; T. Webb, Toronto, Ornamented Rich Cake, $3; E. Condon, Toronto, Hen Eggs, $1; Anne Clarke, Toronto, Ginger Wine, $1; do, Ice Cake and Syrups, recommended. Eli Varey, Niagara, bottled Grape Wine, and Currant Wine, recommended; Hudson & Mears, Toronto, Lemon Syrups and Sarsaparilla, recommended; A. McNaughton, Newcastle, Arrow Root, diploma; J. B. Tay, Brocton, Chatauque Co., N. Y., native Wines, diploma; McKinnon, Montreal, Biscuits, recommended; Reesby, Dossor & Co., Toronto, specimens of anti-friction Oil and Grease, diploma and $4.00

REMARKS.—There has been a great want of arrangement in this class, some of the articles competing being at the extremities of the building, and others could not be found. In future the Local Committee should see that each section is placed by itself. The great aim, apparently, of the competitor, being who would secure the best position.

Another fault to be found is in the issuing of extra tickets where there is a class open for competition; our opinion of extras is, where there is no class open.

Amongst other articles, we would call special attention to Whitney and Company's assortment of various kinds of family flour.

Mr. Nasmith's, Toronto, and Mr. McKinnon's, Montreal, collections of biscuits being entered as extras, did not compete in their proper class, but both are highly recommended.

Flour and potato starch of A. McNaughton, Newcastle, very superior articles,

for purity and beauty cannot be surpassed; also by the same gentleman a sample of British arrow root, which is deserving of special attention.

Ale and Porter from the Brewery of S. Greey, Spadina Avenue, we have tested and recommend it upon its merits for its purity, and being so nearly similar to the celebrated Edinburgh and Burton, as to be scarcely distinguishable from them.

Bride's cakes, a number of them beautifully and tastefully got up, but that of Thos. Webb, Toronto, recommended for its tasteful design and beauty.

An assortment of native wines, exhibited by J. B. Fay, grape culturist, Brocton, Chatauque County, N Y., are highly deserving of notice, and we would specially recommend them as deserving of a diploma.

CLASS XXXIV.—HATS, FURS, AND WEARING APPAREL.—[52 Entries.]

Judges—J. J. Inglis, Brantford, and R. Symes, Meaford.

Business Coat, best gentleman's, W. S. Finch, Toronto, $4; 2d do Alexander Cormack, Ayr, $3.

Fur Cap, best gentleman's, Knapman Bros., Toronto, $3; 2d do Domenico Chisachi, Kingston, $2.

Best Fur Gloves, Mits or Gauntlets, Knapman Bros., Toronto, $3; 2d do Domenico Chisachi, Kingston, $2.

Over Coat, best gentleman's, W. S. Finch, Toronto, $4; 2d do George Harcourt, Toronto, $2.

Best Pantaloons, W. S. Finch, Toronto, $3; 2d do Fred. French, Toronto, $2.

Best Silk Hat, Domenico Chisachi, Kingston, $3; 2d do Knapman Bros., Toronto, $2.

EXTRA ENTRIES.—W. S. Finch, Toronto, Silk Vest, $2; W. S. Finch, Toronto, Coat, Vest, and Trousers of Canadian Cloth, $3; John Laidlaw & Co., Toronto, suit of Canadian grey cloth, $2; Fred. French, Toronto, Frock Coat, diploma; John McNab, York Township, two buffalo robes from Red River, C. W., recommended. Knapman Bros., Toronto, Lady's Riding Hat, 50c, Gentleman's muffler, otter, $1.50; cloth reversible cap, 50c., John Riggs, Toronto, specimen of piece work in cloth, $2. Domenico Chisachi, Kingston, Fitch cuffs and cape for ladies, $2; lady's mink boa, $1.

CLASS XXXV.—INDIAN WORK.—[37 Entries.]

Judges—R. Symes, St. Vincent; H. H. Horsey, Frontenac.

Best Hand-basket, Wm Adams, Island Creek, $2; 2d do Wm. Adams, $1.

Best Indian Cradle, S. Mitchell, St. Regis, $3.

Best pair of plain Mocassins, Peter Cray, St. Regis, $2; 2d best Mocassins worked with beeds, Mary ——, St. Regis, $2.

EXTRA PRIZES.—Marie, St. Regis, Bag and Pocket Book in beads, $2; George, St. Regis, Bag, Comb Case, Pin Cushion, Watch Pocket and Pen Wiper in beads, $3; Therese, Caps in beads, $2; Lewis Jackson, Caughnawaga, two Caps with beads, $1; Lewis Jackson, Caughnawaga, three bags with beads, $1; Mary Cook, St. Regis, two pairs Mocassins, $2; three bags in beads, $1; Marie, St. Regis, variety of articles, $2; Mary Anne, Mocassins, Smoking Cap, Bead Bags, &c., $3; Peter Cray, St. Regis, collection of articles, $2; Elizabeth Adams, Island Creek, variety of articles, $2.

CLASS XXXVI.—LEATHER, WHIPS, INDIA RUBBER, &C.—(103 Entries.)

Judges—George Woods, Cabel Sudford, Wm. Edwards, Toronto.

Best specimens of gentlemen's boots, Robertson & McNeil, Toronto, $4; 2d do Robert Merryfield, Toronto, $2.

Best specimen of ladies' boots, Robert Merrifield, Toronto, $1.

Best collection of bootmaker's trees and lasts, Matthew Selway, Toronto, $5; 2d do W. A. Young, Dundas, $3.

Best set of carriage harness, double, John Buchan, Newcastle, $7; 2d do John Griffiths, Toronto, $5.

Best set of carriage harness, single, McKay & Smith, Brantford, $6; 2d do Robert Fleming, Newmarket, $4.

Extra—Superior fancy harness, John Griffiths, Toronto, $3.

Best set of team harness, Robert Malcolm, Toronto, $5; 2d do R. Malcolm, Toronto, $3.

Best set of cart harness, R. Malcolm, Toronto, $4.

Best six pairs of wooden-team hames, Sylvester Skinner, Gananoque, $5; 2d do S. Skinner, Gananoque, $3.

Hose and joints, best 50 feet of copper rivetted (2¼ inches in diameter) engine, Thomas Thompson, Toronto, $6.

Best 3 sides of brown strap, Andrew McGlashan, York Mills, $4.

Best 3 sides of harness, H. R. Corson, Markham, $4; 2d do Jacob Snure, Jordan, $2.

Best 2 skins for carriage covers, H. R. Corson, Markham, $4; 2d do Jacob Snure, Jordan, $2.

Best 3 sides of sole, Adam Fralick, Stamford, $4; 2d do J. & C. Parsons, Toronto, $2.

Best 3 sides of upper, Jacob Snure, Jordan, $4; 2d do Andrew McGlashan, York Mills, $2.

Best 3 sides kip skin, Jacob Snure, Jordan, $4; 2d do John Fitzgerald, Shakespeare, $2.

Best 3 skins of cordovan, James Hugo, York Township, $4.

Best three skins of calf-skin, Andrew McGlashan, York Mills, $4; 2d do J. Snure, Jordan, $2.

Best dressed deer skin, John Cooke, Toronto, $2.

Best travelling portmanteau, H. E. Clarke, Toronto, $6; 2nd do H. E. Clarke, Toronto, $4.

Best ladies' saddle, Thomas Thompson, Toronto, $6; 2d do Alex. Chalmers, Dundas, $4.

Best gentlemans' saddle, Thomas Thompson, Toronto, $6; 2nd do Alexander Chalmers, Dundas, $4.

Best assortment of Shoe Pegs, George Colcleugh, Ayr, $3.

Best specimens of whips (collection assorted) Joseph Threlkeld, Toronto, $6.

Best assortment of whip thongs, Joseph Threlkeld, Toronto, $3; 2d do J. Threlkeld, Toronto, $2.

Extra Entries.—John Buchan, Newcastle, Stud Horse Roller and Bridle, $2; Thomas Thompson, Toronto, Summersault Saddle, $6; Fireman's Hat, Thomas Thompson, Toronto, $2; G. W. Folts, Toronto, 3 pairs of Shoes, machine work, $2; Fancy Stitching, machine work, $2; John Cooke, Toronto, Buckskin Mits, Sheepskin Mits and Harvest Gloves, $3; John Griffith, Toronto, Military Horse Accoutrements, $4; Composition Horse, $5.

CLASS XXXVII.—LADIES' WORK.—(552 entries.)

Judges.—Mrs. Monro, Mrs. Boulton, Mrs. Cameron, Mrs. Currie, Toronto.

Best Bonnet of Canadian Straw, Mrs. Faris, Sorel, C. E., $4.

Best specimen of Braiding, Miss Musson, Etobicoke, $4; 2d do Miss Susan F. Panton, Toronto, $3; 3d do Miss Susan F. Panton, Toronto, $2; Extra do, Mrs. Wm. Boulton, Toronto, $3.

Best specimen Crochet Work, Mrs. Adams, Toronto, $4; 2d do Miss Baker, Toronto, $3; 3d do Miss Rannick, Toronto, $2; Extra, Miss Harriet Bidwell, Cramahe, $2.

Best embroidery in Muslin, Mrs. N. Bethune, Toronto, $4; 2d do Mrs. Dr. Hornby, Brockville, $3; 3d do Mrs. McVittie, Toronto, $2; extra, Miss Isabel Sutherland, Credit, $4; extra, Miss Sarah Johnston, Chinguacousy, $4.

Best embroidery in Silk, Mrs. Pollard, Toronto, $4; 2d do Mrs. Pollard, Toronto, $3; 3d do Mrs. Pollard, Toronto, $1.

Best embroidery in Worsted, Mrs. Cumine, Wellington, $4; 2d do Mrs. Cumine, Wellington, $3; equal, Miss Emma Hewlett, Toronto, $3.

Best three pairs of Gloves, Mrs. Agnes Walker, Tecumseth, $3; 2d do Miss Mary Hewlett, $2; 3d do Mrs. Draper, Gwillimbury, $1.50.

Best specimen guipure work, Mrs. John Cox, Toronto, $4; do do, (equal) Miss C. H. Gibbon, London, $4; 2d do do, Mrs. John Cox, Toronto, $3; do do, (equal) Miss H. Bidwell, Cramahe, $3.

Best hat of Canadian straw, Mrs. Faris, Sorel, C. E., $4; 2d do, Mrs. H. Miller, Grafton, $3; 3d do, Miss Jane Harper, Etobicoke, $2.

Best specimen fancy knitting, Miss Searle, Brockville, $4; 2d do, a shawl, no name, (entry ticket lost) $3; 3d do, Margaret Scott, Toronto, $2. Extra do Mrs. Agnes Walker, Tecumseh, $2; do do, Mrs. Hartley, Chinguacousy, $2.

Best 3 pairs of woollen mittens, Miss Mary Hewlett, Toronto, $3; 2d do do, Mrs. M. Draper, North Gwillimbury, $2.

Best specimen ornamental needle work, Mrs. W. Gray, York Township, $5; 2d do do, Miss Emma B. Schreiber, Toronto, $3. Extra do do, Mrs. Doctor Hornby, Brockville, $3.

Best specimen fancy netting, Mrs. J. Hartley, Chinguacousy, $4; 2d do Mrs. Martin, Hamilton, $3; do do (equal) Miss Isabella Harper, Etobicoke, $3. Extra do, Miss Eliza Hewlett, Toronto, $2.

Best crochet quilt, Mrs. Barnet, Whitby, $4; 2d do, Miss McGregor, Nelson, $3.

Best knitted quilt, Miss Pfaff, Toronto, $4; 2d do, Mrs. E. S. Adams, St. Catharines, $3; 3d do Miss Reilley, Toronto, $2. Extra, equal to the first, to a quilt without a ticket, $4.

Best quilt in silk, Mrs. W. Davidson, Berlin, $4; 2d do, Mrs. Maria Marshall, Toronto, $3.

Best piece work quilt, Mrs. R. Donaldson, Stratford, $4; 2d do Mrs. Van Ostrand, Springfield, $3; do do, Mrs. J. C. Steele, Toronto, $3; 3d do Miss C. Bartholomew, Markham, $2; do do, Miss Elizabeth Ghent, Wellington Square, $2; 4th do, Mrs Joseph Barber, Georgetown, $1; do do, Miss Margaret Burton, Vaughan, $1; do do, Miss Isabella Harper, Etobicoke, $1; do do, Mrs. Francis, Woodstock, $1; do do, Mrs. George Silverthorne, Cooksville, $1.

Best specimen gentlemens' shirts, Mrs. Wm. Taylor, Toronto, $3; 2d do, Miss E. A. Handy, Toronto, $2; 3d do, Mrs. John Doty, Oakville, $2.

Best 3 pairs woollen socks, Miss Isabella Harper, Etobicoke, $3; 2d do Miss Mary Hewlett, Toronto, $2; 3d do Mrs. Martin, Hamilton, $1. Extra do, Miss Elizabeth Beaty, Trafalgar, $1; do do, Mrs. J. Smith, Toronto, $1; do do, Mrs. M. Draper, North Gwillimbury, $1.

Best 3 pairs woollen stockings, Mrs. J. Smith, Toronto, $3; 2d do, Miss Eliza Harper, Etobicoke, $2; 3d do Mrs. P. R. Palmer, Thurlow, $1. Extra do, Mrs. M. Draper, North Gwillimbury, $1.

Best specimen Tatting, Mrs. Unwin, Toronto, $4; 2d do Miss Ann Strickland, Whitby, $3; 3d do Miss A. E. Fairclough, Hamilton, $2; 4th do Miss H. Bidwell, Cramahe, $1.

Best specimen wax fruit, Miss Isabella Niven, Niagara, $6; 2d do Mrs. T. Taylor, Hamilton, $4; 3d do Miss J. T. Smith, Yorkville, $3.

Best specimen of wax flowers, Miss Eliza Collin, Hamilton, $6; do do, Miss Isabella Niven, Niagara, (equal) $6; 2d do, Mrs. Brett, Toronto, $4; 3d do, Miss Isabella Niven, Niagara, $3; 4th do, Mrs. Wright, Cooksville, $2.

Best specimen of worsted work, Mrs. Vankoughnet, Toronto, $4; 2d do, Mrs. Unwin, Toronto, $3; do do, Mrs. E. C. Norman, Toronto, $3; 3d do, Mrs. and Miss Johnston, Toronto, $2; do do, Mrs. Campion, Toronto, $2; do do, Mrs. J. C. Taylor, Galt, $2; 4th do, Mrs. Janson, York Township, $1.

Best specimen raised worsted work, Miss Pfaff, Toronto, $4; 2d do, Miss Eliza Harper, Etobicoke, $3; 3d do, Mrs. A. V. Besseck, Toronto, $2; 4th do, Miss McMillan, Galt, $1; do do, Miss Janet Gray, York Township, $1; do do, Mrs. A. Mercer, Etobicoke, $1; do do, Mrs. M. K. Christie, Niagara, $1.

Extra Prizes.—Mrs. D. Campbell, Charlottenburgh, knitted linen cap and stockings, $2; Mrs. E. A. Handy, Toronto, specimen needle work, $3; Mrs. Dr. Hornby, Brockville, embroidery in cambric, $4; Miss Mary Sheppard, Yonge Street, leather picture frame, $3; do do, $1; Mrs. Unwin, Toronto, screens in bead-work, $1; Miss Annie L. Clark, Toronto, ornamental hair work, wreath of flowers, $3; Mrs. Parks, Matron of the Lunatic Asylum, articles made by female patients: 2 sofa cushions, $1; sewed quilt, $1; 5 watch-pockets, $1; 12 mats, knitted, $1; 9 tillies, $1; 2 nightcaps, $1; 2 pairs of stockings, $2. Mrs. J. S. Maughan, Toronto, sea-weed basket, $2; Mrs. R. Borradail, Cobourg, table of painted Devonshire madrepores, $4; Miss Jane A. Jackson, Buffalo, N. Y., fire screen, $1; toilet cushion, $1; 3 embroidered skirts, $1; embroidered masonic collar and apron, $3; silk quilt, $2; Miss M. L. Davis, Toronto, bead-work, $1; Miss Janet Gray, York Township, leather frame, $1; Mrs. Belden, Toronto, ladies' head dresses, $2; Messrs. Merrick Brothers, fancy bonnet, $3, velvet basque mantle, $3; Misses S. & J. Graham, Acton, wreath of flowers, hair-work, $2; Mrs. Belden, Toronto, ladies' bonnets, $2; children's head-dressess, $2; lady's cap, $1; Miss H. Strickland, Whitby, specimen quilting, $1; Miss Eliza Collar, Hamilton, oriental pearl painting on glass, $2; Miss E. Rogers, Toronto, fancy coverlet, $2; Mrs. M. Draper, North Gwillimbury, counterpane, $2; do, $1; do, $1; woollen victorine, $1; cotton table cover, $2; Miss Isabella Niven, Niagara, imitation of parian marble, original design, $2; Mrs. Margaret Hogg, York Mills, dressed flax, $2; Mrs. Hubback, Galt, lady's fancy bonnet, $2; Miss Wright, Cooksville, fancy bead-work, $1; Mrs. Wright, Cooksville, wax figures, $3; Miss Jemina Culloden, Milton, feather work, $2; Mrs. Scott, Paris, rug, $2; Mrs. W. H. Boulton, Toronto, crochet shetland shawl, $2; rigoulette, $1; Miss Mary B. Jaques, Toronto, crochet shawl, $2; Mrs. Simon, Buffalo, 5 chair tidies, $2; bread basket, $2; do $1; Mrs. Johnson, Toronto, specimen plain needle-work, $1; Miss Margaret Beaty, Trafalgar, tufted quilt, $2; Mrs. William Weller, Cobourg, bead and chenile work sofa, $3; do chair, $3; fancy needle work cushion, $1; bead-worked tables, $4; embroidered worsted fire screens, $3; Miss Robinson, Montreal, bead-basket, $1; Mrs. John Wallis, Toronto, fire-screen, $2; Miss Catharine Greeniaus, Toronto, woollen and cotton coverlet, $3; hair-wreath, $1; Messrs. Notman & Russell, Toronto, lady's bonnet, $2.

CLASS XXXVIII.—MACHINERY AND MANUFACTURES IN METALS.—
(313 entries.)

Judges:—John L. Dolson, Kent; John McIntosh, Toronto; Mathew Walton, Toronto.

Best specimen of coppersmith's work, H. G. Booth, Toronto, diploma and $5.

Best 20 lbs cut nails, Mitchell, Murray & Co., Hamilton, $5.

Best collection of fire-arms, John Grainger, Toronto, diploma and $8.

Best specimen of finishing in iron, (vice work,) John Gartshore, Dundas, diploma and $3.

Best collection of gas-fittings, Thomson, Keith & Co., Toronto, $8; 2d do, Cumming & Wells, Toronto, $5.

Best set of horse-shoes, George Kempshell, Vaughan, $3; 2d do, Henry Doane, Toronto, $2.

Best ornamental iron fencing and gate, Charles Vale & Co., Toronto, diploma and $8.

Best ornamental cast-iron work, Gurney and Co., Hamilton, $4; 2d do Chas. Vale and Co., Toronto, $2.

Best iron fire-proof safe (price considered), J. and J. Taylor, Toronto, $5.

Best specimen of locksmith's work, J. and J. Taylor, Toronto, $6; 2d do, Thomas Lawlor, Toronto, $3.

Best cast-wheel spur or bevel (not less than 50 lbs weight), John Gartshore, Dundas, $4.

Best fire-engine, William Marks, Toronto, $15.

Best steam-engine in operation on the ground, F. G. Beckett & Co, Hamilton, $40.

Best specimen malleable iron from the ore, W. H. Snell, Marmora Iron Works, diploma and $6.

Best specimen of malleable iron, from scrap, A. C. Chewitt & Co., Hamilton, diploma and $6.

Best specimen of plumber's work, Thomson, Keith & Co., Toronto, $6; 2d do, George Harding, Toronto, $3.

Best metal pump, Thomson, Keith & Co., Toronto, $4.

Best self-acting car-coupler, S. S. Hickok, Toronto, $12.

Best two cast jaws and boxes for cars, Pierson & Benedict, Niagara, $3.

Best two composition boxes for cars, Pierson & Benedict, Niagara, $3.

Best and largest assortment of car castings, Pierson & Benedict, Niagara, $10.

Best locomotive truck wheel (accompanied with specimens of the metal chilled and showing the fracture) Pierson and Benedict, Niagara, $6.

Best do passenger-car wheels, Pierson and Benedict, Niagara, $6.

Best refrigerator, (price considered), J. W. Esmonde, Toronto, $4.

Best platform scales, Dalley, Ware and Co, Hamilton, diploma and $4; 2d do E. Connor, Toronto, $3.

Best balance scales, Dalley, Ware and Co, Hamilton, $3; 2d do do do, $2.

Best hall stove, J. R. Armstrong and Co, Toronto, $4; 2d do, A. Copp, Hamilton, $2.

Best parlour stove, J. R. Armstrong & Co, Toronto, $4; 2d do, A. Copp, Hamilton, $2.

Best cooking-stove, with furniture, J. R. Armstrong and Co, Toronto, diploma and $5; 2d do, A. Copp, Hamilton, $3.

Best cooking-stove for coal, J. R. Armstrong and Co, Toronto, $5; 2d do, J. R. Armstrong and Co, Toronto, $3.

Best specimen of tinsmith's work, H. G. Booth, Toronto, $5; 2d do, S. Webster, Elora, commended, $3. J. R. Armstrong and Co., Toronto, commended.

Best earth auger, A. St. Jacques, Yamachiche, C. E., $3.

Best 6 narrow axes, J. P. Millener, Kingston, $4.

Best set of bench planes, J. P. Millener, Kingston, $4.

Best set of cooper's tools, J. P. Millener, Kingston, $4.

Best assortment of edge tools, J. P. Millener, Kingston, diploma and $20.

Best collection of hammers, do do, $4.

Best collection of moulding planes and plows, J. B. Millener, Kingston, $4.
Best specimen of turning in iron, J. Gartshore, Dundas, $4.
Best collection of specimen of wire work, W. H. Rice, Toronto, $6; 2d do, Ellen Craig, Toronto, $4.
Best specimen of wire-ropes, W. H. Rice, Toronto, $4.

EXTRA ENTRIES.—Young and Cant, Galt, family sewing machines, $3; J. Mills, Hamilton, heating apparatus, $5; R. Emery, Toronto, patent eave-trough press, $3; G. Campbell, Toronto, blacksmith's portable forge, $4; Parson Bros, Toronto, improved coal oil lamp, diploma and $6; J. Turner, Toronto, turning-lathe, $4; H G. Booth, Toronto, brass work tea-urn, diploma and $4; F. Clark, Thamesford, cross-cutting sawing machine, $5; Cumming and Wells, Toronto, ornamental brass-work, $3; W. Manning, Montreal, machine for manufacturing barrel heads, $10; Morton & Co, Kingston, locomotive passenger engine, $20; do do, freight do do, $20; George Harding, Toronto, hydraulic ram, $3; Thomson, Keith, and Co, Toronto, specimen of plumber's brass-work, $3; do gong-bells, bell-pulls, and cranks, diploma and $4; do portable gas-works, diploma; H. Agnew, Toronto, cheese press, $4; W. H. Rice, Toronto, specimens of wire cloth, diploma; John Ritchie, Toronto, brass castings, finished, $3 and diploma; William Hudson, Toronto, agent for James A. Fay and Co, New Hampshire, tenoning machine, morticing machine, blind slat tenoning machine, blind slat rounding machine, small cylinder planer, large sash machine, Boardman's wiring machine, blind wiring machine, boxes of window blind staples, all of United States manufacture, diploma to Fay and Co; T. D. and W. R. Harris, Toronto, fire-proof safes, manufactured by Duryee, Forsyth and Co, Rochester, highly commended; Moore and Co, Hamilton, japanned tin-work, diploma; Rice Lewis and Son, Toronto, circular and muley saws, $5; James Skinner, Brantford, miniature steam engine, $2; A. J. Hunter, Bayham, self-generating gas-burner, commended, $3; Joshua Lowe, Montreal, steam pressure guage, diploma and $5; William Hamilton, Toronto, iron gas retort, commended, $5; B. D. Wallace, Montreal, sewing machine, $5; Joseph Archer, Toronto, British and American anti-friction grease, $1; non-congealing oil, $1; Peter Martin, Toronto, model stationary steam engine, $5; Charles Vale and Co, Toronto, for general collection of castings and iron work, ornamental and useful, diploma and $8; Butler and Co, Newmarket, family sewing machine, $3.

REMARKS BY JUDGES.—Messrs. J. & J. Taylor, Toronto, exhibited five safes, and all were of the best workmanship and worthy of a further award. The only other safe exhibited was a very excellent large safe, with a double set of doors, from Messrs. Forsyth & Co., Rochester, New York, exhibited by Messrs. T. D. and W. R. Harris, Toronto.

The collection of Tools exhibited by Messrs. Millener & Co., of Kingston, was very large, comprising a variety of chisels, broad and narrow axes, shingle shaves, lathing hatchets, shingling hatchets and other tools, which are of the first quality and would compare with the manufactures of very many of the first American manufacturing companies.

There were a great many entries of sets of Horse Shoes, all creditable to the makers.

The only heating apparatus exhibited was by Mr. John Mills, of Hamilton, which is intended for large private residences, school houses, churches, &c., said to be an improvement upon the other heating apparatus now in use.

The Brass Castings exhibited by Mr. John Ritchie, Toronto, and by Messrs. Thomson, Keith & Co., were of the very best description.

The Blacksmith's Portable Iron Forge, exhibited by George Campbell, Toronto, the Judges strongly recommend, it being a decided improvement upon any thing of the kind exhibited.

The machines exhibited by Mr. William Hodson, Toronto, being from Messrs. Fay & Co's., Factory, U. S., were all of the best description and deserve to be well considered, especially a machine for blind-wiring. This machine by the simple turning of a crank removes the wire from a reel, cuts it, makes the staple and places it in the wood, at whatever distances may be required, at the rate of 35 per minute, or more, if driven hard.

Messrs. Cuming & Wells, Toronto, exhibited several pieces of Cast Brass Work in the rough state, modelled by themselves, and which are worthy of attention.

Mr. Wilson Manning, of Montreal, the inventor, exhibited a machine for manufacturing barrel heads, which is well worthy the inspection of those requiring such machines. It is of a simple construction and so compact that one man and a boy can make from the rough state, three heads per minute.

The Locomotive Railroad Engines exhibited by Mr. James Morton, Kingston, are deserving of special remark, from the fact that every part of them, except the tires, is made from the rough material in Mr. Morton's own shops.

Messrs. Rice Lewis & Sons, Toronto, had a very large assortment of English and American Hardware Goods, many of which were made by some of the best makers in the United States and England. They also exhibited a quantity of circular and mooley saws made by a new firm in Montreal, which are deserving of consideration.

Mr. George Harding, Toronto, exhibited a Hydraulic Ram, said to be powerful enough to raise the water a height of 75 feet, by 5 feet pressure.

Messrs. Thomson, Keith & Co., Toronto, also deserve credit for their exhibition of Gong Bells, Bell Pulls and Cranks, which were all of their own manufacture, also for their portable gas works, with which they prepare the gas for the lighting of the Crystal Palace. They exhibited a frame for steam heating purposes, which displays a great amount of the finest workmanship. They also exhibited an improved water closet, which is well worthy the consideration of those who are building residences, and intending to have private closets in them.

Mr. H. Agnew, Toronto, exhibited a machine which has been frequently inquired for by the farming community, in the shape of a cheese press, which is deserving the attention of every farmer who makes large quantities of cheese. It is an iron screw and lever machine, and capable of producing a pressure of 1400 lbs., if necessary, by simply moving a weight upon the end of a lever.

Mr. W. H. Snell, exhibited samples of Bar Iron from the Marmora Iron works, which are well worthy of the diploma.

CLASS XXXIX.—MISCELLANEOUS.—(85 Entries.)

Judges—W. H. Beresford, Newmarket; Peter Graham, Pittsburgh; T. C. Wallbridge, Belleville.

Best assortment of brushes, Joseph Pullen, Toronto, $4.

Best specimen of Dentistry, M. D. French, Toronto, $6.

Best specimen of goldsmith's work, W. C. Morrison, Toronto, $6; 2d do C. H. Van Norman, Hamilton, $4. Extra, special prize, J. G. Joseph & Co. Toronto, diploma.

Best collection of Mathematical, Philosophical and Surveyor's Instruments, A. F. Potter, Toronto, $8; 2d do Wm. Hearn, Toronto, $4.

Best specimens of Painting, Imitation of Wood and Marble, Thomas Castle, Toronto, $6; 2d do John Murphy, Toronto, $4.

Best gilt Picture Frame, J. E. Pell, Toronto, $6; 2d do Geo. E. Pell, Hamilton, $4.

Best specimen of silversmith's work, W. C. Morrison, Toronto, $6; 2d do J. G. Joseph & Co., Toronto, $4.

Best collection of stuffed birds, Alfred Jeffrey, London, $6; 2d do S. W. Passmore, Toronto, $4.

Best model of a steam or sailing vessel, Dr. F. W. Wright, Toronto, $5; 2d do Enos Taylor, Toronto, $3.

EXTRA ENTRIES.—Henry Kerr, Streetsville, electro magnetic machine, $4; James W. Morton, carved looking glass frame, $6; Norris Black, Rockwood, specimens of artificial legs, $4; specimens of artificial hands, $2; W. C. Morrison, Toronto, specimens of electro plating, $4; W. T. Atkinson, Toronto, specimens of perfumery, $2; John Damp, diagram of a mill on units, $6; John Beatty, Streetsville, turning in ivory, $3; Dr. Cadwell, Toronto, air pump for relief of deafness, $2; one dozen enamel artificial eyes, $2; Thomas Wheeler, Toronto, stuffed Canadian lynx, $1; R. H. Oates, Toronto, instantaneous reefer, $1; H. Lohrman, Smithville, astronomical regulator, $4; Wm. Couper, Toronto, cabinet Canadian insects, $4; case of stuffed fox and pigeon, $2; case of Canadian fish, $2; Dr. F. W. Wright, Toronto, stuffed beaver and deer's head, $2; David Bansley, Toronto, wigs and other hair work, $8; J. S. Howard, Toronto, Secretary U. C. Bible Society, the Scriptures in various languages, 100 copies, $6; John Murphy, Toronto, writing and ornamenting on glass, $4; Canadian Powder Company, samples of gun powder, $4; James E. Ellis, Toronto, manufactures in papier mache, foreign, $4; foreign bronze, $4; silver plate, $6; parian manufactures, $4; F. & E. Gunther, Toronto, regulator time piece, $6; Thomas Tinning, Toronto, single scull champion boat, $6; John Condell, Kemptville, artificial leg for amputation above the knee, $4; do. below the knee, $4; artificial arm, $4; Byron Ghent, Hamilton, specimen of anatomical and pathological preparations, $6; John Harding, Toronto, two model ships, "Niagara," and "Agamemnon," representing the laying of the Atlantic cable, with model of paying out the machinery, $4; Louis Cohn, Toronto, Metalligraphic gilt signs, $4.

CLASS XL.—MUSICAL INSTRUMENTS.—(14 Entries.)

Judges—Rev. Dr. McCaul, Toronto; Martin Lazare, Toronto; John Carter, Toronto.

Best piano, John Knott, Hamilton, $15; 2d do Felitz & Rainer, Whitby, $10; extra do, commended for invention, Wm. Matthews, Toronto, $5.

EXTRA ENTRIES.—C. L. Thomas, Hamilton, square piano forte, U. S. manufacture, commended. R. S. Williams, Toronto, 3 banjoes, $4. Hullet, Davis and Co., Boston, U. S., John Thomas, Toronto, Agent, a grand piano forte, recommended as the best piano exhibited. Thomas P. Norton, Toronto, Chapel organ, recommended, $12.

CLASS XLI.—POTTERY, BUILDING STONES, &C. (36 Entries.)

Judges—E. R. Birrell, Pickering; H. Ruttan, Cobourg; E. W. Thomson, Toronto.

Best collection of Canadian building and flagging stones, James Pearson, Toronto, diploma and $20; 2d do John Emslie & Co., Guelph, $10.

Best specimen of draining tiles and pipes of different sizes, John Townly, Yorkville, $8; 2d do George Smart, Bowmanville, $5; 3d do W. & R. Campbell, Wellington square, $4; John Burns, Yorkville, commended.

Best water filterer, J. W. Esmonde, Toronto, $3; 2d do Thos. Humberstone, Thornhill, $2.

Best specimen of pottery, John Burns, Yorkville, $4; 2d do J. Brown and Co, York Township, $3.

Best assortment of pottery, J. Brown and Co, York Township, $8; 2d do John Burns, Yorkville, $4.

EXTRA ENTRIES.—D. Campbell, Charlottenburg, lot of common bricks, $2; pressed Brick Company, Toronto, 2 cases patent pressed bricks, $4; Thomas Humberstone, Thornhill, flower pot vase, $2; Joshua Sisley, Scarboro', dozen red bricks, $2; Joseph Brown and Co, York Township, flower vases, $2; G. Smart, Bowmanville, sewerage pipes, $1; John Townley, Yorkville, assortment of bricks, $2; John Emslie and Co, Guelph, white finishing lime in stone, $2; do slacked, $1; Thomson, Keith & Co, Toronto, encaustic tiles for halls, $4; George Armitage, Toronto, two marble head stones, $4; Isaac Mills, Flamboro' West, roof tiles, $6; Joseph Ellis, Niagara, patent artificial stone, $4; Richard Woodcock, Kent Co., metal polisher, $2; Warner and Co., Toronto, specimens fire bricks, $4.

CLASS XLII.—PAPER, PRINTING, BOOKBINDING, &C.—(87 entries.)

Judges.—John Edwards, Toronto, George E. Thomas, Daniel S. Eastwood.

Best specimen of book-kinding, blank book, Brown Brothers, Toronto, $5; 2d do, Maclear and Co, Toronto, $3. Special prize, Louis Cohn, Toronto, diploma.

Best specimen of ornamental book-binding, letter-press, Brown Bros, Toronto, $5; 2d do do do do, $3.

Best specimen of writing ink, Owen Lloyd, Holland Landing, $2.

Best specimen of plain letter-press printing, Lovell and Gibson, Toronto, $5; 2d do Rowsell and Ellis, Toronto, $3.

Best ornamental letter-press printing, John Blackburn, Toronto, $5; 2d do, Rowsell and Ellis, Toronto, $3.

Best ream of printing paper, Buntin Bros, Toronto, $5; 2d do do do do $3.

Best dozen rolls (on Canadion paper) paper-hangings, grounded, Moses Staunton, Toronto, $6.

Best dozen rolls (on Canadian paper) paper-hangings, self-grounded, Moses Staunton, Toronto, $4.

Best ream of writing paper, Buntin Bros, Toronto, $5; 2d do Buntin Bros, Toronto, $3.

Best and cheapest ream of wrapping paper, Buntin Bros, Toronto, $4; 2d do Joseph Barber, Esquesing, $3.

Best specimen of stout wrapping paper, Buntin Bros, Toronto, $3; 2d do, Chalmers and Robertson, Montreal, $2.

Best specimen of fine wrapping paper, Buntin Bros and Co, Toronto, $3; 2d do do do, $2.

EXTRA PRIZES.—Specimen of posting bill, John Blackburn, Toronto, $2; plans of estate in typography, do do, $3; pieces decorative paper hangings, John Murphy, Toronto, $6; two reams of printing paper, J. Barber, Esquesing, $2; marbling paper, Buntin Bros, Toronto, commended; roll roofing felt, Chalmers and Robertson, Montreal, $2.

REMARKS BY JUDGES.—We find the articles marked for prizes in class 42. in the various sections, very creditable to the manufacturers and artisans of Canada.

CLASS XLIII.—WOOLLEN, FLAX AND COTTON GOODS. (113 Entries.)

Judges.—C. Whitelaw, Paris; J. M. Detlor, N. Hastings; R. Symes, St. Vincent.

Bags, best 12 manufactured from flax the growth of Canada, David Smellie, Vaughan, $5; 2d do D. Campbell, Glengarry, $3.

Best pair of Woollen Blankets, B. McNab, Dundas, $8; 2d do D. Campbell, Charlottenburgh, Glengarry, $6.

Best piece of Fulled Cloth, 12 yards, P. Hinman, Haldimand, $6; 2d do J. Rose, South Dumfries, $4; 3d do Daniel Campbell, Charlottenburg, $2.

Best two Counterpanes, D. Campbell, Charlottenburgh, $5; 2d do H. Ranney, Dereham, $3.

Best Flax or Hemp Cordage, 28 lbs., A. D. McGregor, Toronto, $6; 2d do A. D. McGregor, Toronto, $4.

Best pair of Woollen Drawers, factory made, G. H. Selden, Hamilton, $4; 2d do J. J. Thompson, Galt, $3.

Best piece of Flannel, not factory made, [12 yards] P. Hinman, Haldimand, $5; 2d do D. Campbell, Charlottenburg, $3.

Best piece of Linen Goods, D. Campbell, Charlottenburg, $5; 2d do D. Campbell, Charlottenburgh, $3.

Best 12 yards Satinet, A. Boyle, Grantham, $6; 2d do P. R. Palmer, Thurlow, $4.

Best thee Shawls, P. Hinman, Haldimand, $5; 2d do Mrs. Draper, N. Gwillimbury, $3.

Best six Woollen Shirts, factory made, G. H. Seddon, Hamilton, $5; 2d do J. G. Crane, Ancaster, $3.

Best three pairs of Knitted Woollen Stockings, factory made, G. H. Seddon, Hamilton, $4; 2d do J. J. Thompson, Galt, $2.

Best three pairs of mixed woollen and cotton Stockings, J. Simpson, Niagara, $4.

Best three pairs of mixed woollen and cotton Socks, factory made, J. Simpson, Niagara, $2.

Best 12 yards of Winter Tweed, A. Boyle, Grantham, $4; 2d do A. Boyle, Grantham, $4.

Best one lb. of Woollen Yarn, white, J. G. Crane, Ancaster, $2; 2d do R. Coates, Oakville, $1; 3d do P. Hinman, Haldimand, recommended, 50c.

Best one lb. Woollen Yarn, dyed, John St. Clair, Weston, $2; 2d do D. Campbell, Charlottenburgh, $1.

EXTRA.—Daniel Campbell, Charlottenburgh, six Linen Sheets, six Linen Table Cloths, 20 yards of Linen Diaper, sample Linen Sewing Thread, all home made, $4; John Rose, South Dumfries, Shepherd's Plaid, highly commended, $2; Joseph Wright, Flamboro', three lbs Cotton Batting, commended, $1; G. H. Seddon, Hamilton, three pairs of Children's Stockings, factory made, commended, $1; J. G. Crane, Ancaster, Ribbed Drawers, $2, plain wool, do $1, wool ribbed do $1, plain knitted shirts, $2; Alexander Green, Montreal, Printed Muslin Goods, commended, $3; John St. Clair, Weston, piece Rag Carpet, 2; D. Campbell, Glengary, sample Woollen Yarn, $2; sample Dressed Flax, $1.

MUSICAL BANDS.—(8 Bands in competition.)

Judges.—Rev. Dr. McCaul, Toronto, John Carter, Toronto, H. Carey, Bandmaster, Royal Canadian Rifles; Martin Lazare, Toronto.

REPORT.—The Judges on Musical Bands beg leave to report that they are of opinion that the prizes should be distributed in the following manner: Three of the value of sixty dollars each. One to Maule's, Toronto, as the best Reed Band, $60; one to the Union, Toronto, as the best Brass Band, $60; one to the Port Hope, as the best band composed wholly of amateurs, $60; and two prizes of the value of twenty dollars each: One to the Brockville, $20; and one to the Niagara Band, $20, as being in the opinion of the judges of equal merit. The judges desire to add their commendation of the bands which pl yed in competition.

STATEMENTS OF THE MODE OF PRODUCING CROPS, &c., FOR WHICH PRIZES WERE AWARDED.

After the close of the Exhibition queries were addressed to some of the parties who had received prizes for grain or other farm products, requesting them, in accordance with the regul tions of the Prize List, to furnish information in regard to the manner of producing the same. Each person receiving a prize for grain was requested to furnish information upon the following points, or upon any others of practical importance that might occur to him relating to the sample exhibited :—

1. The description of soil upon which it was grown.
2. The cultivation given before sowing, and the manure, if any, used.
3. The variety of seed, the quantity sown per acre, and the mode and date of sowing.
4. The cultivation, if any, between sowing and harvesting.
5. The date and manner of harvesting.
6. The amount of produce per acre and weight per bushel.

In regard to other products than grain the queries were varied according to the nature of the article.

The following replies were received :

WHEAT.

STATEMENT OF THOMAS T. TURNBULL, SOUTH DUMFRIES, BRANT.

Canada Company's prize for 25 bushels Fall Wheat.

SIR,—In answer to your request concerning the wheat which I exhibited at Toronto,

1. I would say the soil upon which it grew was a clay loam.
2. The cultivation was fallow; ploughed about the first of June; harrowed several times through the course of the summer; cross ploughed in the fall—being a fresh piece of ground did not use any manure.
3. The kind of wheat was blue stem; sowed 1½ bushels per acre, broad-cast, about the twelfth of September.
4. No cultivation between sowing and harvesting.
5. Harvested the last of July by manual labour.
6. The amount of produce per acre was 18 bushels, and the weight 67½ lbs. per bushel.

I would also state that the quantity from which it and the second prize two bushels were cleaned was 36 bushels, measured from a separating thrashing machine.

STATEMENT OF J. M. KENNEDY, BLENHEIM, OXFORD.

Second Prize for 25 bushels Fall Wheat.

SIR—I received a letter from you wishing me to give you a statement of how I raised the wheat that I got the prize for at the Provincial Exhibition, at Toronto. I merely say that the mode was so simple that it was not worth telling, as I did not think of trying for any prize, and therefore I took no pains, but I will state the easy manner I pursued in raising the wheat. I raised it in a four acre field, the soil was a clay loam; there was wheat on the ground the previous year; I broke it the last of June, ploughed it three times, sowed broad cast, and dragged it in with a common drag, sowed on the 5th September, did nothing more till ripe, then cut it down with a reaper, put it in the barn, and

thrashed all together; then I cleaned up twenty-five bushels, and sent it to Toronto. It averaged about 30 bushels per acre, and weighed 66 lbs. This is as true a statement as I can make.

STATEMENT OF DANIEL CAMPBELL, CHARLOTTENBURG, GLENGARY.

First Prize for 2 bushels Fall Wheat.

1. Clay soil.
2. Fallow land with three ploughings, and at the rate of thirty cart loads of barn-yard manure per acre.
3. Blue Stem and at the rate of one and one half bushels per acre.

I may remark that I have some Sole's wheat sown in the same field much injured with rust, while the other was quite clear of that blight, though it was sown at the same time and received the same treatment.

4. Sown broad cast on the 18th August.
5. Cut with sickle July 25th.
6. At the rate of 52½ bushels per acre and 68lbs per bushel of my own measure.

OATS.

STATEMENT OF R. L. DENISON, TORONTO.

First Prize for 2 bushels Black Oats.

1, Clay.
2. No manure, land very hard, dry and stony, once ploughed.
3. 4 bushels per acre, sown 5th May.
4. No cultivation between sowing and harvesting.
5. Late in August, cut with machine and tied in sheaves and left in shoks thre or four days before housing.
6. Weight 32lbs., average not arrived at.

STATEMENT OF E. A. WALKER, BARRIE, COUNTY SIMCOE.

Fourth Prize for 2 bushels White Oats.

The oats in question were grown in Barrie, on a complete sand. I had previously taken a crop of potatoes, these were cleared off the ground in the middle of October last. I then put on the land half rotten stable manure, about eighty one-horse cart loads to the acre. I spread it, and ploughed it in, in the early part of November. In the spring of this year I cross-ploughed it, then harrowed it, then in the second week of May sowed the oats, and with them a little clover and timothy, and also at the rate of 20 bushels of bone dust to the acre. Nothing further was done till the oats were reaped, which was about the 5th or 6th August.

INDIAN CORN.

STATEMENT OF ROBERT WARREN, NIAGARA, COUNTY LINCOLN.

First Prize for 2 bushels Yellow Indian Corn.

SIR—In answer to your enquiry, I beg to say—1st, That the soil on which I raised my last year's crop of corn, was a mixed one, part clay and part gravelly loam. The crop preceding it was oats; the stubble of which in the fall I had ploughed under some twelve inches deep; considering deep ploughing and

thorough cultivation of the soil, before and after planting, two of the greatest essentials of its growth. In the spring I had hauled some twenty cart loads of green manure per acre, which experience convinced me to be better than decomposed; corn being one of the most rank and coarse feeders among our grains. At the time I took care to spread and plough it under immediately, so that whatever fertilizing properties it contained, were not destroyed by the bleaching winds or sun; which point I fear many of our farmers loose sight of, judging from the careless manner in which we so frequently see manure scattered about their fields. But to resume,—after ploughing and harrowing, I ran light furrows some three feet nine inches apart both ways. On the 21st June I planted from four to six grains per hill, which averages about one peck per acre. On the 29th June it was above ground some two inches. I then commenced hoeing and cultivating with a horse-hoe, in order to loosen the soil, which is often baked very hard around the roots, and also to get start of the weeds. On the 20th of July it was up about one foot above ground. I then re-cultivated it with a horse-hoe, having two men pulling the suckers and extra roots, leaving only three or four stalks to the hill. On the 24th September the corn was sufficiently glazed to be cut and shocked, which was done, leaving it so for some two weeks longer that it might become fully ripened and ready for husking, which I like done as early as possible, so as to get the stalks under cover before the fall rains set in. And here I may remark that the stalks more than pay the expenses of raising the crop, including the seed. But to render corn stalks valuable as fodder, they must be cut as soon as the corn becomes glazed, no matter how green they may appear. If they are properly shocked, they will cure and keep fresh and green under this process, and I find them preferable to hay for stock, especially milch cows, as they improve the quality and increase the quantity of the milk. I planted five acres, which averaged 60 bushels to the acre, weighing 62 lbs. to the bushel. The safest time for planting in this locality, is between the 26th May and 1st June, by which we avoid the frosts we are subject to about those dates, and which are so apt to cut the corn off if up. Last year I had to re-plant on the 21st June, in consequence of a very wet season. My land lying low, the water lodged and rotted out my first seeding. The variety of the seed is what is called the twelve rowed Dutton, which I have been endeavoring to improve for the last three years, by going through the field and selecting all the best and earliest ripening ears, so as to obtain a variety which will excel all others, and ripen within the ninety days; as early maturing is one very valuable and important point to be gained, in consequence of our short seasons. I am within four days of the time now, and I hope by next season to be able to give it the name of Warren's Ninety Days Corn. This corn for meal is unequalled for its sweetness and preserving qualities, and I think will prove just the article for shipping purposes, and if extensively cultivated may, in a great measure, repair the loss of our wheat crop.

FLAX SEED.

STATEMENT OF PERINE, BROTHERS, WOOLWICH, WATERLOO.

First Prize, 1 bushel Flax Seed.

SIR,—The sample of Flax Seed exhibited by us at the late Provincial Exhibition, held at Toronto, was grown in the town of Woolwich, County of Waterloo, C. W., upon a soil termed by the farmers in this section "clay loam," which is the prevailing soil of the county. It is vegetable mould, with a very small proportion of sand, mixed, by cultivation, with clay. The subsoil is exclusively

clay. We have found that soils of this kind are the best for the growing of flax. Sandy soils, however well adapted to raising wheat and other crops, are less reliable for flax. Neither are heavy clay soils well adapted to growing the flax crop. The success of a crop upon either of the last named soils depends too much upon the peculiarities of the season. But we have met with uniform success upon the "clay loam."

The cultivation given flax land, before sowing, is about the same as for other spring crops, viz: once ploughing and thorough harrowing. We used no manure on the field upon which this sample was grown. This sample is known as the "sapling seed." We usually sow seventy-four pounds, or one and one-half bushels per acre, harrowing it in thoroughly. We sow broad-cast about the first of May. This sample was sown the 3rd of May. We give flax no other cultivation than as above stated. We harvested about the 25th July, pulling it by hand, and tying it in bundles about four inches in diameter. We then set it on end in bunches of fifteen to twenty bundles—seed ends up,—until dry enough to thrash.

The yield of this sample per acre was twelve bushels of fifty-six pounds. Yield of fibre was but little short of three hundred and twenty-five pounds per acre, which we consider a pretty fair yield for dew rotting.

We are growing, annually, about four hundred acres flax, and prepare the fibre for the cloth, thread, and twine manufacturer, and we regret to add, that there is at present no market for it in all the broad Province of Canada West.

HOPS.

STATEMENT OF JOHN RITSON, OSHAWA, ONTARIO.

First Prize for Bale of Hops of 112*lbs.*

Sir,—In accordance with your request I herewith send you some observations on Hop culture. In thinking the matter over I have come to the conclusion that a simple statement of the produce per acre, the price sold for, &c, for one particular year, would be of little practical value, as there is no crop the produce of which is so variable and uncertain. Although the Hop in Canada is not subject to the blight of the old country, yet the atmospheric or other influence is such as sets all our calculation at defiance. For instance—in 1857 from 2 acres the produce was 2350lbs, whereas in 1858 from the same piece of ground with the same cultivation I procured only 1300lbs. Then the price obtained is as variable as the crop, and does not always correspond with the crop. I have sold as high as 50 cents and as low as 12½. per lb. Under these circumstances I have thought it better to give an average of product and price from my own experience of a period of over twenty years that I have been a Hop grower; The average yield per acre I put at 700lbs. and average price at 20 cents. Perhaps some growers may think the average price too high, but I have always had a prime article, and generally sold at 6 months' credit and have therefore always obtained the highest price.

Cultivation. The land most suitable for Hops is a rich sandy loam with a porous or calcareous subsoil, sloping gently to the East. I prefer this to a Southern aspect. A Northern or Western aspect should be avoided. The plants (which are cuttings from old stocks) should be placed 6 feet 8 inches apart, three plants in a hill, with two eyes in each cutting, the rows should be perfectly straight both ways, for convenience in cultivating. Corn or any kind of roots may be cultivated among them the first season. The spring following the earth should be removed from round the hill and the top of the old stem cut off, leav-

ing two buds. They are then slightly covered and one or two small poles set to each hill, the land should be well cultivated and kept clean during the summer; the next year they will take the larger poles from 12 to 15 feet. My manner of cultivation is this; In the fall plough between the hills each way, throwing the land from them, leaving the hill a square of about 2 feet. In the spring the hills are opened and dressed, that is, the old stumps of the last year's vine are cut off nearly to the crown with any suckers that may be found; they are then covered lightly with earth. I then put on every hill a good shovelfull of well rotted dung and chop it in round the roots, after which I sometimes throw over them a small quantity of lime. The lime is not necessary every year. The poles are then set two to each hill. I then work the land well with the cultivator called a shim, after the vines are tied to the poles and are running freely we cut off the superfluous vines and shoots and hoe them, drawing the earth round them, and when they reach the tops of the poles we plough them both ways, turning the furrows toward them, after which they are hoed again, drawing more earth round them; this finishes the cultivation.

The following shews the cost of cultivation of an acre for one year.

Two ploghings.....	$4 00
Shiming.....	1 00
Opening hills and dressihg.....	3 00
Setting poles and tying.....	3 00
Hoeing.....	2 00
Picking 700lbs.....	28 00
Curing and packing.....	4 00
Manure.....	6 00
Renewal of damaged poles.....	2 00
Interest on value of land and buildings.....	8 00
	$61 00

Average produce per acre for a number of years 700lbs.
Average price per lb for do. do. 20 cents

$140 00

Balance $79 00

The above, although intended as an average for a number of years is a very correct statement of my crop and price for this last year.

DAIRY PRODUCTS.

STATEMENT OF HIRAM RANNEY, DEREHAM, OXFORD.

First, Third, and Fourth Prizes, for Cheese not less than 30 lbs.; and First, Second, Third and Fourth Prizes for 2 Stilton Cheeses, not less than 14 lbs. each.

SIR,—Agreeable to your request by letter, I have great pleasure in giving you some details of my dairy establishment. Number of cows one hundred—any breed that are the best milkers. I make from one hundred cows, in six months of the year, from fifteen to eighteen tons, according to seasons. Spring and fall eight or ten hundred pounds of butter. Number of acres of land seven hundred, four hundred of which I use for dairy purposes. I winter my cows on hay and turnips; stable a part and have long sheds for the others. On the dairying premises I have two cheese houses twenty by thirty feet each, one brick

and the other frame, and a house adjacent to manufacture the cheese, with conductors to run the whey to the pig sty while sweet and warm

Those cheeses I take to the fair are made the same as I make all my cheese. The process of making my cheese is as follows :—I set my milk at night, as soon as milked from the cows, in a vat or tub, at 90 degrees; have it quite fit for cutting in forty minutes; use a knife with six blades for cutting; cut with great care till very fine, then leave it to settle fifteen minutes; spread a cloth over and dip the whey from the curd as clean as possible, then break the curd with the hand, spread a cloth on a rack placed in a sink by the side of the vat and lay the curd on it to drain forty minutes, then return the curd to the vat and make it fine with a knife and scald at 100 degress; let it stand in the scald fifteen minutes, then return it to the rack, spreading two inches thick; pour on cold water till quite cool; let it drain one hour. I then put it in the hopper of the grinder and it is picked into fine pieces and passes off into a tub for salting. One pound of salt to every 20 lbs. of curd, thoroughly mixed, and it then stands in the tub till the morning. In the morning the curd is prepared in the same way —then the night and morning curds are put together and placed in the hoop in the press. We put on a light press at first and increase till a hard pressure is on, after three hours hard pressure it is taken out and turned into a clean cloth and returned to the press to remain under hard pressure thirty-six hours; then it is taken out and sacked and sent to the drying house for curing, where they are turned and rubbed every other day. The houses are constructed with folding doors and windows for airing; are kept close through the day, at evening the doors are thrown open till they are well aired. The Stilton and pine apple cheese are manufactured the same as common cheese, except with the addition of one-third sweet cream and a small quantity of annatto, and are made entirely of the morning's milk, and the rennet flavoured with sage and pepper. When I make twelve hundred weight cheeses, I take a cool time and keep the curd four days in an ice cellar, every day salting and fitting it for the press; the curd being somewhat coagulated together, I grind it all over again and mix it thoroughly together, and put it into the press to remain one week.

For other information of practical value I would recommend stationary pasture for milk cows. My pasture is in part of that kind, never ploughed, while clover and other grasses come in spontaneously. The above pasture makes the best cheese and butter—red clover is not so good.

STATEMENT OF WM. SMITH, WHITBY, ONTARIO.

Second Prize for 14lbs Butter.

Sir;—I embrace the earliest opportunity of addressing these lines to you in answer to your note requesting information as regards my dairy operations, &c. In the first place, after churning I wash the butter well in three different waters till there is not the least sign of buttermilk in it. The breed is the old original Canadian stock of the commonest kind. The number of cows that were milked on my place last summer was eleven. The size of the farm 171 acres, about 140 cleared. Our dairy is in the cellar, which is of a large description. The milk is kept in tin pans and skimmed every second day, the cows are usually given salt twice a week. I salt the butter, allowing half a pound of salt to ten pounds of butter; when I salt I let it stand an hour, and then work it again three times. As to saying more I don't know that I can give any information of much importance. I suppose others will enter into the subject more practically than I can do.

RESULTS OF THE EXHIBITION OF 1858.

STATEMENT SHOWING THE AMOUNT OF PREMIUMS OFFERED IN EACH CLASS, THE NUMBER OF ENTRIES, AND THE AMOUNT AWARDED.

CLASSES.	AMOUNT OFFERED.	NO. OF ENTRIES.	AMOUNT AWARDED.
Blood Horses	$297 00	16	$160 00
Agricultural Horses	502 00	230	529 00
Heavy Draught Horses	335 00	55	340 00
Durham Cattle	512 00	135	512 00
Devon Cattle	512 00	102	482 00
Hereford Cattle	512 00	8	72 00
Ayrshire Cattle	512 00	47	312 00
Galloway Cattle	512 00	45	455 00
Grade Cattle	189 00	88	195 00
Fat and Working Cattle	236 00	33	164 00
Leicester Sheep	144 00	188	144 00
Cotswold Sheep	144 00	39	144 00
Cheviot Sheep	144 00	15	122 00
Long woolled Sheep	144 00	68	144 00
Southdown Sheep	144 00	49	144 00
Merino and Saxon Sheep	144 00	29	120 00
Fat Sheep	48 00	19	48 00
Large Breed Pigs	106 00	34	106 00
Small Breed Pigs	106 00	66	126 00
Poultry	194 00	247	184 50
Foreign Stock	270 00	3	24 00
Grains, Seeds, &c	510 00	427	501 50
Roots, and other Field Crops	218 00	292	164 00
Fruits	172 50	327	197 00
Garden Vegetables	127 00	447	141 50
Plants and Flowers	160 00	112	140 50
Dairy Products	113 00	86	119 00
Agricultural Implements	805 00	233	640 50
Foreign Agricultural Implements	105 00	2	5 00
Cabinet Ware and other Wood Manufactures	212 00	133	186 00
Carriages, Sleighs, &c	73 00	55	51 00
Fine Arts	607 00	350	436 00
Groceries, Provisions, &c	174 00	189	170 00
Hats, Furs, and Wearing Apparel	49 00	52	47 50
Indian Prizes	72 00	37	31 00
Leather, Whips, India Rubber, &c	290 00	103	185 00
Ladies' Department	179 00	552	391 50
Machinery, and Manufactures in Metals	400 00	313	451 00
Miscellaneous	115 00	85	209 00
Musical Instruments	56 00	14	46 00
Pottery, Building Stones, &c	53 00	36	113 00
Paper, Printing, Bookbinding, &c	87 00	90	92 00
Woollen, Flax, and Cotton Goods	216 00	113	149 50
Musical Bands	200 00	8	220 00
Total	$10,700 50	5,572	9,215 00

(3) (2) (1)

1. Cotswold two shear Ewe, Third Prize at Provincial Show, Toronto, 1858. The property of John Snell, Chinguacousy. *See page* 181.
2. Leicester two shear Ewe, Second Prize. Property of John Snell, Chinguacousy. *See page* 181.
3. Southdown two shear Ram, Second Prize. Property of G. J. Miller, Niagara. *See page* 182.

COMPARATIVE STATEMENT Showing the amount of competition at all the Exhibitions held by the association :—

EXHIBITIONS.	AMOUNT OF PRIZES OFFERED.			TOTAL NO. ENTRIES.	AMOUNT OF PRIZES AWARDED		
	£	S.	D.		£	S.	D.
Toronto, 1846	400	0	0	1150	275	0	0
Hamilton, 1847	750	0	0	1600	600	0	0
Cobourg, 1848	775	0	0	1500	575	0	0
Kingston, 1849	1400	0	0	1429	700	0	0
Niagara, 1850	1276	11	9	1638	950	0	0
Brockville, 1851	1254	9	3	1466	805	18	9
Toronto 1852	1479	9	9	3048	1228	5	0
Hamilton, 1853	1602	10	9	2820	1323	6	3
London, 1854	1794	0	6	2933	1356	17	6
Cobourg, 1855	2304	1	6	3077	1735	8	6
Kingston, 1856	2309	12	6	3791	1699	17	6
Brantford, 1857	2517	17	0	4337	2046	10	0
Toronto, 1858	2675	2	6	5572	2303	15	0

MEETING OF THE BOARD OF AGRICULTURE.

TORONTO, November 25th, 1859.

The Board met this day, pursuant to notice from the Secretary, at the office, at 11 a. m.

Present: Messrs. E. W. Thomson, President, H. Ruttan, Hon. A. Fergusson, Hon. G. Alexander, R. L. Denison, Asa A. Burnham, Wm. Ferguson, President of the Agricultural Association; Professor Buckland, W. B. Jarvis, President of the Board of Arts and Manufactures; Dr. Beatty, Vice-President of the same.

The minutes of previous meeting were read and approved.

The Treasurer stated that in accordance with instructions at previous meetings of the Board, he had applied to the Government for the amount of the balance which had accrued to the credit of the Board of Agriculture of Upper Canada, under the Act 19th Victoria, Chapter 47, Section 5, and that the said balance, being the sum of £3330 6s. 1d., had now been received by him.

The manner in which this sum of money should be disposed of, being then discussed, it was

Resolved—That the sum of three thousand three hundred and thirty pounds, six shillings and one penny, received by the Treasurer under the Act 19th Victoria, Chapter 47, be placed at interest in one of the Banks, on the most advantageous terms which can be made, and by which it can be available at three months' notice, and that the President, Secretary and Treasurer be a Committee to effect such arrangement,—the whole to be disposed of hereafter as to the Board may seem beneficial to the Agricultural Societies of Upper Canada, according to the Statute.

A communication was read from the Mayor of the City of Toronto, demanding to be put in possession of the grounds and buildings where the late Provincial Exhibition had been held, whereupon it was

Resolved—That a letter from the Mayor of the City of Toronto in reference to the Building erected on a portion of the ground granted to the City, with a

condition that at least twenty acres shall be reserved for the benefit of the Agricultural Association, having been read, it appears to this Board that there has evidently been an omission in the Patent, as it was distinctly understood when the arrangement was under consideration with the Government, that the buildings to be erected, and the grounds, were to be available for all Agricultural and Horticultural exhibitions, whether of the Province, County, or City; and therefore this Board can only consent to the City being put in possession of the said grounds and buildings, upon a written engagement being entered into, under the Seal of the Corporation, that they shall at all times be available for the above purposes; and a Committee of the four following members, viz: The President and the Secretary of the Board of Agriculture, the President of the Board of Arts and Manufactures, and the Treasurer of the Agricultural Association, are hereby authorised to confer with the City Council for the purpose of carrying this arrangement into effect.

The Secretary read a letter received from Mr. Marks, from London, England, dated September 14th 1858, stating his inability to be home in time for the exhibition at Toronto, and offering some suggestions for the improvement of the By-Law of the Association.

Resolved—That the thanks of this Board are due and are hereby tendered to Mr. Marks for the warm interest he has heretofore taken and still takes in the Agricultural interests of Canada, and that the Secretary do communicate this resolution to Mr. Marks, and at the same time inform him what has been done with reference to the By-Law and invite further suggestions from him.

A communication was submitted, received from Mr. C. A. Jordison, of Smithville, Co. Hastings, suggesting the classification of Pigs at future Provincial Exhibitons under the name of different breeds, as Yorkshire, Hampshire, Essex, Berkshire, and Suffolk, instead of simply large and small breeds as heretofore. On reference it was found that the judges of pigs at the recent exhibition had made a similar recommendation, and it was

Resolved—That the suggestions made by the judges on Pigs be complied with, in the next Prize List, so far as relates to the making of additional classes.

The President submitted and read a Report of his visit to the exhibition of the United States Agricultural Society at Richmond, Virginia, October 25th to 30th, 1858.

Moved by Mr. Wm. Ferguson, Seconded by Hon. Mr. Alexander, and

Resolved—That the thanks of the Board are hereby tendered to the President for his Report of the United States Agricultural Society's Exhibition, and that the Report be embodied in the Transactions.

The President submitted a letter received from Mr. Webster of Guelph, in reference to the family of the late Mr. Harland, formerly a member of the Board, stating that Mrs. Harland having unfortunatly been recently killed by a railroad accident, her young family had thereby been left in distressed circumstances, and it was the intention of the friends of the late Mr. Harland to endeavor to alleviate their position, in which intention he asked for the co-operation of the Board.

It was agreed by the Board that this matter did not lie within their province to deal with as a public body.

The Secretary read a communication from Dr. W. Rees, on the importance to Canada of the cultivation of Hemp.

Also, a communication from Mr. Jas. Anderson, originally addressed to His Excellency the Governor General, and referred to the Board, drawing the attention of His Excellency to the probable future importance of the native Wild Rice, as a bread producing grain.

The communication was ordered to be embodied in the Transactions.

The Secretary read a communication from Mr. Widder, of the Canada Company's office, stating that a sample of wheat which had been sent to him from Goderich, and for which a prize offered by the Canada Company had been awarded by the County of Huron Agricultural Society, had been found on examination to consist of three distinct varieties, and calling the attention of the Board to the importance of requiring that the samples of wheat for which prizes are awarded by the Provincial Association, as well as by the Local Societies, should be of pure unmixed qualities.

Some discussion then took place as to the date of holding the next Provincial Exhibition, and it was

Resolved—That the Provincial Exhibition to be held in 1859, at Kingston, do take place on the 27th, 28th, 29th, and 30th September.

Professor Buckland reported that the judges appointed to examine the Essays sent in in competition for the prizes offered by the Board in the spring had not yet been able to meet together to agree upon a decision.

After a little conversation on this subject the Board adjourned.

REPORTS, COMMUNICATIONS, &c.

REPORT OF THE PRESIDENT OF THE BOARD OF AGRICULTURE ON THE EXHIBITION OF THE UNITED STATES AGRICULTURAL SOCIETY, AT RICHMOND, VIRGINIA, 1858.

TORONTO, Nov. 22nd, 1858.

Sir,—I left Toronto with the view of visiting the Show of the United States Society, on the 23rd October, and proceeded by way of steamer and rail to Elmira, where I remained until Monday morning. I then left at at early hour by way of Baltimore for Washington, where I remained all day Tuesday, and visited, amongst other places of interest in that important city, the Patent Office, Capitol, and Smithsonian Institution. I called on Lord Napier, British Ambassador, at Washington, who expressed his regret at not having been able to attend our Provincial Exhibition in Toronto. Next morning I had the pleasure of accompanying his Lordship and Lady Napier to Richmond. Having arrived on the show grounds and been kindly received by the officers of the society, I occupied what remained of the day in viewing the stock in the stalls and pens. I found them much fewer in number than I had expected, not more than one third of the stalls and pens being occupied. The show grounds are very beautifully situated, close to the city, and are the permanent property of the Agricultural Society of the locality. The pens and stalls were well arranged and all covered in. There were no buildings, however, of a permanent character, except offices of a very simple construction. A number of tents and numerous flags gave the ground a very animated appearance, crowded as they were by immense numbers of well dressed and healthy looking persons, male and female, all of whom on both days I was there, appeared to enjoy themselves very much.

The show of Horses was very good as far as thorough breds were concerned, and they were mostly of this class. Some of the young animals were very fine indeed, exhibiting plenty of bone and muscle. There was one imported Cleveland Bay, a pair of heavy draught Flanders mares, a few good Morgans. An imported English blood horse, and one sent from France by the Emperor Na-

poleon were fine animals and attracted a good deal of attention. The judges were very strict in the examination of the pedigrees. As an instance, there was a splendid looking horse called "Red Eye," that had never been beaten on a four mile course, and has won a great many races, was thrown out on account of some flaw in his pedigree. The circumstance caused a good deal of remark.

Durham cattle were represented by a few very good specimens, but the competition was very limited. A three year old bull, and a two year bull were as good as I have ever seen. A few good cows and heifer were to be seen, but the number altogether was small, scarcely enough to take the prizes. The same may be said of all the other classes: the Devons all belonged to two herds; of Herefords there were only four or five; of Alderneys but a few, one of which, said to have been a very fine two year old bull, died the first day he arrived. Fat cattle were more numerously represented than any others, and were good. Of working oxen I saw but one very indifferent yoke.

Of Sheep there were some recently imported Silesian Merinos, and some French Merinos. There were a few very middling Leicesters, Cotswolds and Southdowns, none of which would have stood any chance in comparison with those exhibited in the same classes in Canada.

Of Swine there were scarcely any, except two lots from Butcher County, in Pennsylvania.

Of Poultry, there were a few specimens of medium quality, none of remarkable pretensions.

Of Grain, there were a few specimens of tolerably good wheat and other sorts, but the show on the whole in this department was very limited.

There were some Sweet and common Potatoes, two or three lots of White Turnips, no Swedes, Carrots or Mangel Wurzel; some competition in tobacco.

Of Ladies' Works, of the usual sorts at such exhibitions, there were some very creditable specimens, and a few samples of home manufactured goods, loaves of bread, cakes, boiled hams, &c.

In implements and machinery there was a very good show. There were several steam engines in operation, by means of which mowing, reaping, threshing, sawing and numerous other machines were put in motion; amongst them a small but very effective sawing machine of a quite novel construction. It is driven by steam conveyed to the piston through a gutta percha tube, and the saw is attached to the piston rod. It did its work well and attracted a good deal of attention. There were straw cutters of several patterns, some of them at work, driven by the steam engines. A Reaper and Mower from Ohio, called the "Buckeye Reaper," labelled as having taken the first prize at the trial at Syracuse last year, I have no hesitation in saying is a very superior implement. There was a new machine for sowing broad-cast; a small one worked by hand, said to be capable, at the walking gait of a man, of sowing from five to eight acres per hour; and a horse power machine, said to be capable, at the walking gait of a horse, of sowing from ten to sixteen acres per hour. This I consider a useful invention. A particularly good fanning mill attracted my attention; there was nothing new in its construction, but the riddles and screens were so placed as to enable it to do its work very effectually. Of ploughs there was a pretty large number, but, with the exception of one iron Scotch plough, all of one form, upright handles, short beams and land sides, and, judging from the work performed, very far from what would in Canada be called good implements. The ploughing match came off on Thursday in a field a short distance from the show grounds, and was, without exception, the worst attempt at a competition of the kind I ever witnessed.

The arrangements of the grounds and the mode of admitting the public were all very good, and seemed to work most satisfactorily. There were no refresh-

ment booths within the enclosure. Groups of persons might be seen about the grounds, with their baskets of provisions, enjoying themselves in the most happy manner, in pic-nic fashion. The outside exhibitions were very numerous, including fat women, fat boys, with animals, birds, reptiles, insects and all sorts of monstrosities that can be imagined. But neither time nor inclination permitted me to give any attention to these outside wonders.

On Thursday, at 12 o'clock an immense number of persons assembled, in front of the raised seats, and on them, to hear the Hon. Caleb Cushing deliver the oration of the occasion, which occupied an hour and a half. The oration was eloquently delivered, and contained many very fine passages; but it also, if I may be permitted to make the remark, seemed to me to contain a good deal of historical and political matter, not particularly appropriate to the occasion.

There was to be a ball on Thursday evening and a banquet on Friday, but it was not convenient for me to remain for the enjoyment of these celebrations. I left Richmond at 7 o'clock Thursday evening, arrived at Washington on Friday at half-past 4 a.m., Baltimore at half-past 7 a.m., and Elmira at half-past 9 p.m.; left the latter place at 5.30 am. on Saturday, and after a detention of two and a half hours at the Suspension Bridge, arrived at Toronto via Hamilton, on the Great Western Railway at 9 p.m. and home at 11, having been absent eight days. I reached home quite satisfied that our Provincial Agricultural exhibition at Toronto was in every respect very far superior to that of the United States Agricultural Society at Richmond.

As I by no means wish, however, unduly to depreciate the United States exhibition, it is no more than proper for me to state that the paucity of stock and articles displayed was said to have been occasioned by a disagreement or rivalry that had arisen between the society and a society of the neighborhood, which held a show at the same time, and to which a large amount of stock had been taken. Be this as it may, there was very little stock on the ground, none from the state of New York, or the states further east and north, and it struck me as very singular that in none of the newspapers I saw on my way was there the slightest notion taken of the great national fair, while columns were filled with accounts of the disgraceful scene enacted at the same time at Long Point, the prize fight between Morissey and Heenan. I am of opinion that the comparative failure of the exhibition may be, to a certain extent, attributed to the want of interest taken in the institution by the general newspaper press.

In conclusion, I have to acknowledge the very marked and kind attention I received from the President of the Society, Mr. Tilghman, of Maryland, 50 miles south east of Baltimore, who, though he devoted himself most assiduously to the duties of his position as President of the Society, yet found time to be most polite and attentive to me, as a delegate from Canada.

I have the honor to submit the above imperfect report for the information of the Board.

I am Sir, &c.,

E. W. THOMSON,
Pres't Board of Agriculture.

PROFESSOR BUCKLAND,
Sec'y Board of Agriculture, U. C.

ON THE GROWTH OF HEMP.

TORONTO, 6th September, 1859.

DEAR SIR,—Allow me to bring under your notice and that of the valuable institution with which you are associated, the importance of encouraging the growth of Hemp in Canada, already too much neglected. It is fully ascer-

tained that both the soil and climate are highly favorable, and the article, commercially considered, if once duly encouraged, in Lower Canada more particularly, would prove next in importance to wheat. During the late war the price rose to £100 per ton. Besides, the British Government have ever shown every disposition to second the efforts of the colonists in this object. Our legislature in 1802 voted £1200, and subsequently a like sum but no pains whatever was taken to futher the object. The late R. Bouchette, Surveyor General of the Province, wrote a great deal in its favor in his work on British America. It has occurred to me that if the Provincial Agricultural Association would recommend the encouragement to each county for the largest quantity and best manufactured, that it would soon become general. The Provincial Agricultural Association ought to offer a prize for an Essay on the most improved mode of manufacture.

Pray give the subject your valuable consideration.

I remain, very truly yours,

W. Rees.

To Prof. Buckland,
Secy. Bd. of Agriculture.

ON THE CULTIVATION OF WILD RICE.

(ORIGINALLY ADDRESSED TO HIS EXCELLENCY THE GOVERNOR GENERAL, AND TRANSFERRED TO THE BOARD OF AGRICULTURE OF UPPER CANADA.)

Board of Agriculture, Lower Canada,
Montreal, 21st September, 1859.

May it Please Your Excellency—

When in this country in 1843, I addressed a communication to my kind friend Lord Metcalfe, for which I received a special letter of thanks, introducing to His Excellency's notice a native cereal, which seems destined by nature to become at some future time, on this continent, the Bread Corn of the North. I left the country temporarily soon after, from causes which Your Excellency is well aware of as detailed in former communications; and His Lordship returned to die in England from the painful disease under which he so long and so heroically suffered.

I allude to the *Zizania Aquatica*, or Indian Rice. It is highly esteemed by the Indians of the West, as highly as was corn by the Indians of the North-east, in the first settlement of the country. It has been hitherto, unless by the Indian tribes, almost entirely neglected. It is collected by the Squaws in September, who, pushing their canoes among the thick growth, bend the heads of the Rice over the sides of their rude vessels, beat out the grain with their paddles, and after drying it in the sun, husk and winnow it. Considering the productiveness of this native cereal, and habituated as it is to situations which refuse all cultivation, it is surprising that European settlers have, as yet, taken no pains to cultivate and improve a vegetable production both valuable and indigenous.

It has been on the journey to the Red River, purchased from the Indians at a dollar a bushel, and has been found an agreeable and sustaining article of food. It seems almost unnecessary to describe a plant so generally known in Canada. Its appearance resembles the oat much more than it does the common

rice, and in its habits it is similar to the reed so common along tidal water courses, growing in water where other crops cannot be cultivated, and not on recently drained or unusually inundated land. Plantations of Indian Rice therefore, promise to be free from *Malaria*, the curse of Southern Rice fields.

The seeds have been more than once transmitted to myself, packed in common paper, and have germinated and produced flowers and fruit in a greenhouse aquarium during the second year after their arrival. But they should evidently, from that experiment, be planted in earth, under water, without any undue delay after transport.

In view of the acquisition or resumption, as some would have it, of the Red River Territory, and the probable extension of our temporal interests in that direction, I think I cannot be doing wrong in once more drawing attention to this cereal. I think, by so doing, I may be the humble means of introducing an important element to the stock of cultivated human food on this continent, without abstracting any portion of the available land now appropriated to cultivation. Shallow watery wastes, at present worthless, may, under the *Zizania Aquatica*, be made to feed hungry thousands; and there can be no doubt the cultivation might be beneficially extended much further North than is at present dreamed of.

I have the honor to be, &c.,

JAMES ANDERSON.

To His Excellency the Right Honorable
Sir EDMUND W. HEAD, Bart., P. C.,
Governor General, &c., &c., &c., &c.

ON SAMPLES OF PRIZE WHEAT.

CANADA COMPANY'S OFFICE,
TORONTO, 21st Sept., 1858.

DEAR SIR,—This Company has for some years given premiums through the various Local Agricultural Societies for Fall wheat, subject to the conditions prescribed in the List of the Provincial Association for the Company's prize of $100. I have just received a sample of the Fall wheat which obtained the Company's prize of $60 for 20 bushels at the County of Huron Agricultural Society, held at Goderich, 1st instant, with a letter from the Secretary dated 9th instant, of which the enclosed is a copy. My object in now addressing you is to direct your attention to the fact, that this sample is composed of *three* distinct descriptions of wheat, as shown by the small samples taken from the larger parcel which I send with this letter, and to submit that, the object of this Company in giving prizes for wheat is to promote the exhibition of the best and most *perfect* descriptions for distribution as *seed*, and therefore it will occur to you that if *mixed* wheat, such as the sample sent, receives the prize, the advantage of our continuing to offer premiums, is of a very questionable benefit to the country.

I apprehend, however, that we must postpone making provisions to meet this question till next year, as the conditions as advertised in your list for the coming exhibition as regards the Canada Company's Prize, as well as all the others offered by the Association for Fall and Spring wheat, will perhaps preclude any action being taken in the matter for the persent.

I have the honor to remain,
Dear Sir, your obedient servant,

FRED. WIDDER,
Commissioner.

PROFESSOR BUCKLAND,
Secr'y Prov'l Agr'l Ass'n, Toronto.

[COPY.]

GODERICH, Sept. 9th, 1858.

FRED. WIDDER, Esq.,
Comm'r. C. C., Toronto.

SIR,—I transmit to your address one bushel of the Canada Crmpany's premium wheat for 1858, and also one bushel presented to you personally by the successful competitor, David McIlwain, of Wawanosh. There were nine competitors of twenty bushels each, (considering the season) excellent samples. I can assure you that the usual liberality of the Canada Company has caused this amount of competition.

I remain, Sir,
Yours respectfully,
[Signed], A. DONOGH,
Treasurer County Huron Agricultural Society.

PUBLIC GRANT TO AGRICULTURAL SOCIETIES.

STATEMENT showing the amount of subscription of the County and Township Agricultural Societies in each county for the year 1858, at the time of the Treasurer of each County or Electoral Division Society transmitting his affidavit to the Secretary of the Board of Agriculture; the amount of public grant received by the Board from Government on account of each County or Electoral Division Society, in accordance with Provisions of the Act 20 Victoria, Chapter 32; the amount paid to each Society; and the amount retained by the Board from each grant, in accordance with the Act, for the use of the Provincial Agricultural Association :—

SOCIETIES.	AMOUNT OF SUBSCRIPT'NS.	GOVERNMENT GRANT.	PAID TO SOCIETIES.	RETAINED BY BOARD.
Addington	$271 00	$800 00	720 00	80 00
Brant East	276 00	800 00	720 00	80 00
Brant West	268 00	800 00	720 00	80 00
Brockville	300 00	400 00	360 00	40 00
Bruce	526 00	800 00	720 00	80 00
Carleton	335 00	1000 00	900 00	100 00
Dundas	267 00	800 00	720 00	80 00
Durham East	270 00	800 00	720 00	80 00
Durham West	353 00	800 00	720 00	80 00
Elgin	332 00	996 00	896 40	99 60
Essex	432 00	1000 00	900 00	100 00
Frontenac	301 50	800 00	720 00	80 00
Glengary	281 00	800 00	720 00	80 00
Grenville South	268 00	800 00	720 00	80 00
Grey	390 00	800 00	720 00	80 00
Haldimand	360 00	1000 00	900 00	90 00
Halton	514 00	1000 00	900 00	100 00
Hamilton	420 00	400 00	360 00	40 00
Hastings North	261 00	783 00	704 70	78 30
Hastings South	267 00	800 00	720 00	80 00
Huron	517 00	800 00	720 00	80 00
Kent	412 00	1000 00	900 00	100 00
Kingston	450 00	400 00	360 00	40 00
Lambton	451 15	1000 00	900 00	100 00
Lanark North	338 00	800 00	720 00	80 00
Lenox	323 50	800 00	720 00	80 00
Leeds & Grenville North	232 00	696 00	626 40	69 60
Leeds South	284 00	800 00	720 00	80 00
Lincoln	572 00	1000 00	900 00	100 00
Middlesex	1016 95	1000 00	900 00	100 00
Niagara	134 00	400 00	360 00	40 00
Norfolk	342 00	1000 00	900 00	100 00
Northumberland East	365 00	800 00	720 00	80 00
Northumberland West	291 00	800 00	720 00	80 00
Ontario North	337 00	800 00	720 00	80 00
Ontario South	428 00	800 00	720 00	80 00
Oxford North	455 36	800 00	720 00	80 00
Oxford South	307 00	800 00	720 00	80 00
Peel	739 00	1000 00	900 00	100 00
Perth	421 50	1000 00	900 00	100 00
Peterborough	300 00	800 00	720 00	80 00
Prescott	267 00	800 00	720 00	80 00
	$15675 96	$34275 00	$30847 50	$3427 50

(*STATEMENT CONTINUED.*)

SOCIETIES.	AMOUNT OF SUBSCRIPT'NS	GOVERNMENT GRANT.	PAID TO SOCIETIES.	RETAINED BY BOARD
Brought forward.....	$15675 96	$34275 00	$30847 50	$3427 50
Prince Edward.....	399 00	1000 00	900 00	100 00
Renfrew.....	268 25	800 00	720 00	80 00
Russell	414 00	800 00	720 00	80 00
Simcoe North	414 50	800 00	720 00	80 00
Simcoe South	486 00	800 00	720 00	80 00
Stormont	267 00	800 00	720 00	80 00
Toronto.....	208 00	208 00	187 20	20 80
Victoria	335 00	800 00	720 00	80 00
Waterloo North	304 00	800 00	720 00	80 00
Waterloo South	313 00	800 00	720 00	80 00
Wellaud	525 00	1000 00	900 00	100 00
Wellington North	324 00	800 00	720 00	80 00
Wellington South	833 00	800 00	720 00	80 00
Wentworth North	430 00	800 00	720 00	80 00
Wentworth South.....	420 00	800 00	720 00	80 00
York North	386 29	800 00	720 00	80 00
York East.....	291 00	800 00	720 00	80 00
York West.....	496 00	800 00	720 00	80 00
	$22790 00	$48483 00	$44034 70	$4848 30

FINANCIAL STATEMENT.

The following is the Treasurer's Statement of Receipts and Expenditure for the year commencing 20th September, 1857, and ending 20th September, 1858, as audited:—

Richard L. Denison, Treasurer, in account with the Provincial Agricultural Association.

1857-8. **Dr.**

	£	s.	d.
To Balance as per last audit	461	12	2
" Received on account of the Agricultural Association	4064	10	1
" Received from Government to pay County Agricultural Societies	8518	17	6
" Received from Professor Buckland on account of Experimental Farm	10	0	0
	£13054	19	9

1857-8. **Cr.**

	£	s.	d.
By paid on account of the Agricultural Association	4150	18	10
" on account of the *Canadian Agriculturist*	259	6	1
" to County Agricultural Societies for the year 1857	7667	0	0
" on account of the Board of Agriculture	73	9	0
" on account of the Experimental Farm	71	17	6
By balance in hand, 20th September, 1858	832	8	4
	£13054	19	9

AUDITOR'S REPORT.

We the undersigned, Auditors to examine the accounts of the Treasurer of the Provincial Agricultural Association, certify that we have done so for the period commencing 20th September, 1857, and terminating 20th September, 1858, that we find by the books that the sum of (including the balance of £461 12s. 2d, at the last audit) thirteen thousand and fifty-four pounds nineteen shillings and nine-pence, currency, has been received, and the sum of twelve thousand two hundred and twenty-two pounds eleven shillings and five pence, currency, has been paid (as per vouchers produced,) thereby showing a balance in the hands of the Treasurer of eight hundred and thirty-two pounds eight shillings and four pence—provincial currency.

(Signed), G. P. RIDOUT, E. W. THOMSON, G. BUCKLAND, *Auditors.*

Toronto, C. W., March 11, 1859.

THE ILLUSTRATIONS TO THIS VOLUME.

There is given with this Volume of Transactions, a handsome lithographed plate of the Exhibition Building at Toronto, a Devon bull, also lightographed, and eight wood-cut engravings of animals. It has been considered desirable to give pictorial illustrations of the exhibitions so far as possible, but unfortunately the means at present available of doing so, except at a very great expense, are but scanty. Owing to the short time the animals remain at the shows, the only method of taking their portraits which can well be adopted, is by photography. To employ artists to go into the country to take sketches of them, even if such artists could be obtained, would entail too heavy a cost for the object in view. And photography, although a very valuable auxiliary on many occasions, is not particularly well adapted to the taking of portraits of animals. It is difficult, especially during the crowding and bustle of a great exhibition, to get the animals in a good position, with all the necessary accessories of light and shade, or to keep them in position long enough to take the impression. Consequently the views are apt to be more or less distorted, or some parts, as the tail or other member, by a sudden frisking, to be altogether wanting. Again, the only means at hand of transferring the views to paper at a moderate cost, for the large edition required, was by engraving on wood. But to find artists in this country, when the opening for such employment is at present so limited, sufficiently skilful, and at the same time sufficiently familiar with the anatomy and characteristics of the various breeds of animals, as to be able to give truthful representations of them upon wood, from photographs, was not an easy matter. Under these circumstances the cuts in the present volume are offered with the belief that every reasonable allowance will be made for their imperfections, in consideration of the difficulties of obtaining them. Some of them are very fair portraits of the animals represented, while others are not so successful. It is hoped that in future years there may be the means at command of giving in the volumes of Transactiens, such illustrations of the exhibitions as may be considered useful and interesting.