

THE JOURNAL
OF THE
Board of Arts and Manufactures
FOR ONTARIO.

FEBRUARY, 1868.

THE AGRICULTURE AND ARTS BILL.

In the December number of the Journal, we noticed the changes proposed in the law relating to Agriculture, Arts and Manufactures, as adopted by the Convention that met in Toronto during the November previous. The draft of Bill as submitted to the Hon. the Commissioner of Agriculture, by the Convention Committee, subsequently underwent many important changes at the hands of the Commissioner, prior to its being by him introduced to the Legislature; and other important amendments were made by the select Committee of the House, with the full sanction of the Commissioner.

The Bill, as it passed its third Reading in the Legislative Assembly, on the 17th of February, will be found in this number of the Journal.

The leading features of this measure, are:—

The Board of Agriculture, as such, is abolished, and its property and functions merged in the Agricultural Association, which is continued under the name of "The Agricultural and Arts Association." The members of the Board are continued as the Council of the Association; the members of such council to be hereafter elected by the votes of Agricultural Societies, in twelve Agricultural Districts.

The Board of Arts and Manufactures is discontinued, and its valuable Library of Reference is transferred to the department of the Commissioner of Agriculture, and forms the nucleus—and no mean one either—of an Agricultural and Arts Museum and Library, which is open to the public for reference from 10 A.M. till 4 P.M., each day, in the east wing of the Parliament Buildings.

Mechanics' Institutes having evening classes organized for the purpose of imparting instruction, or having established a technical Library, are entitled under the Bill to receive grants from the public funds to an amount not exceeding \$200 for any one year, provided that the institute contributes or appropriates for either or both of these objects an equal amount to that claimed from the Government. An Association of Mechanics' Institutes for Ontario is also incorporated, which is to hold its Annual Meeting at the time and place at which

the Provincial Exhibition is being held. The same provision is also made for the Fruit Growers' Association, which is to meet at the same time and place, and is to receive an Annual Grant of \$350.

It is also provided that Horticultural Societies may be formed in any Town of not less than 2,000 inhabitants, and that such Societies shall be entitled to rank the same as Township Societies, and draw their share of the County Grant.

Agricultural Societies may be formed for each of the 82 Electoral Divisions in Ontario, except that the City of Toronto is to be considered but as one Division for the purpose of this Act. All Societies are to receive their grants in full: 73 Agricultural Electoral Division at \$700 each; the city of Toronto \$550; and the seven other City and Town Electoral Divisions \$350 each. The grants under the Bill, if drawn in full by every Society, will amount to upwards of \$56,000 per Annum. The Agricultural and Arts Association will receive by vote of the Legislature a specific sum each year in lieu of the 10 per cent. heretofore withheld from the Societies, and the Annual vote of \$4,000 to the Board of Agriculture. The County Societies will report direct to the Bureau of Agriculture, and will receive their grants direct from the Government. New Electoral Divisions are allowed to the first day of May next to organise Societies.

Township Societies may be organised whenever fifty persons subscribe one dollar each—three-fifths of County Society Grant to be subject to division amongst the Townships; but no Township Society is to receive more than one-fifth of the whole of the Grant to any County. No Township Society show is to be held in any Township in which the County Society Fall Show is held, in any year; and every Township Society is to be known by the name of the Township in which it is situated. Many other judicious amendments have been introduced which will be apparent on a careful perusal of the Bill.

Some Sections have been added providing for Police regulations, and prevention of gambling, at Exhibitions.

From the manner in which the Bill has been received by the Societies' affected by it, and also by the Legislative Assembly, we should judge that it will be acceptable to the Country, and a great improvement on the Old Law.

Seth Green, Holyoke, Mass., is hatching shad by the million, artificially, and he wants to say to everybody that he will give them all the young shad and impregnated ovas that they will come and take away. The day before writing he hatched 5,000,000.

AID TO MECHANICS' INSTITUTES.

The Government of Ontario, by the Hon. the "Commissioner of Agriculture and Arts," and sustained by the unanimous vote of its first Parliament, has, by the recent enactment, done more to foster our Mechanics' Institutes, and assist them in their legitimate work of imparting useful instruction to the industrial classes of the community, than has ever before been done in this country; and at a very small cost.

For several years, every incorporated Mechanics' Institute in the Province, no matter what the number of its membership, the state of its library, or the work actually done in promoting the legitimate objects of such institutions, received from the Legislature the sum of \$200 per annum. A few years since the grants were withheld, and, in consequence, many institutes "went down," or have ever since been in a languishing state—with difficulty keeping open their doors.

The present Government having determined to withhold any further grants to the Board of Arts and Manufactures—not because it had not done good service with the small amount annually voted to sustain it; for the contrary was the fact—the commissioner deemed it his duty to assist the Mechanics' Institutes in objects beneficial to the operative classes; and with that view, it is provided that any Institute appropriating from its own funds, or obtaining subscriptions in its locality, for the purpose of evening class instruction for its pupils, or the purchase for its library of books on "mechanics, engineering, or chemical or other manufactures," shall receive from the public funds *dollar for dollar* of such appropriation or contribution, up to the sum of \$200 for any one year.

It may be that for a while but few Mechanics' Institutes will avail themselves of this provision; but that some will do so at once, we have no doubt; and as the benefits derived by the pupils, and by the readers of these practical works in their libraries, become apparent, the number of institutes claiming the proffered aid will no doubt increase.

We are always glad to hear of the existence of a Mechanics' Institute, with its circulating library of books, although such books are not of the practical character of those above mentioned; because it is, as it were, a home to which every young mechanic may turn and say, "this is our institute," and which by its appliances exercise an influence for good over many, keeping them from the saloon and gambling house, or even worse haunts of vice; but we can never look upon an institute as fulfilling its mission, until it provides a class of reading or the mechanic and manufacturer that shall be

of benefit to him in his calling; and gathers into its evening classes a number for instruction in useful departments of knowledge.

The Reading Room with its newspapers and magazines of light literature; the library with its books in history and travel, and works of imagination; its concerts, re-unions, literary readings and lectures, are all well and pleasing in their way; but they should only be considered as a means to an end; and that end should be the class room and teaching lecture, and a library of well selected technical books. We believe the step now taken will conduce to this result; and if it should be found that the small grants under the Bill are judiciously used, it may be that future Legislation will extend the aid beyond its present limits.

In connection with this subject we might refer to the "Association of Mechanics' Institutes," the incorporation of which is provided for in the Bill, and whose annual meetings are to be held at the same time and place as the Provincial Exhibition is held in every year. This association, if judiciously managed, may be the means—in connection with the grants referred to—of putting new life into many of the Institutes. At its annual meetings the discussions might profitably turn upon the kind of technical books most desirable for the Institutes; the subjects most suitable for class-teaching, and the selection of teachers; and other topics of interest. The association might also make arrangements for the procuring of suitable books, from an approved list, at a great reduction on the ordinary retail price of such works. The constitution and by-laws of the association will no doubt provide for these things. We wish the Institutes every success. Our heart is with them in their work, and our hopes are for their rapid progress and improvement. We know of the benefits derived by many a young man from connection with them. Youths away from their families and homes, amongst strangers in our own city and in other places, through the influence of some friend have become connected with its institute, and taking an interest in its operations, their whole train of thought and associations have been changed, and they have been saved to society to become useful members thereof.

TECHNICAL EDUCATION.

We publish in this our last number, a final communication from our esteemed friend, "S. R.," on the subject of technical education. We hardly know what to say to our correspondent's reasoning, as he scarcely touches the points on which we have written in the *Journal*, or the arguments advanced

in the several articles we have published from European technical journals.

In our article for July last year we set out by showing that upwards of \$150,000 has been annually appropriated by the Legislature, for "professional or college education," in Upper and Lower Canada, whilst but \$4,000 per annum had been appropriated to Arts and Manufactures; that although practical mathematics, geometry, chemistry, &c., are taught in our colleges and universities, yet so little prominence is given to these studies, and so much importance to the classics, and the abstruse sciences, that the minds of the students are entirely unfitted to grapple with practical matters; and, consequently, almost to a man, they enter the learned professions, become grammar school teachers, or connect themselves with the daily newspaper press. Evidence of the truth of these statements are shown by the fact, that, scarcely can a graduate of a university be found in any manufacturing or mechanical business, or in any of the other ordinary industrial pursuits of life.

Our correspondent "Worker," in the last number of the *Journal*, demonstrated that all the grammar schools are also tending in the same direction—cramming the sons of mechanics and tradesmen with Greek and Latin, and leaving them entirely ignorant of business principles, or of the philosophy of common things with which they every day come in contact. We have never complained of the absence of facilities for acquiring what we term a "higher education," what we say, is, these are too numerous, compared with the opportunities for obtaining the more useful and practical. What is the answer of "S. R." to these arguments? Abundance of universities, colleges, and high schools! We admit it; but will "S. R." explain to us, how a boy who is destined for a workshop, at say 14 years of age, can avail himself of the facilities these universities and colleges afford, even were they adapted to his wants? Or where the institutes are located in which the boy, who only remains at school sufficiently long to enable him to acquire the ordinary branches of an English education, can learn anything of the nature of the materials in which he proposes to work, whether it be in wood or stone; iron or the finer metals; flax or wool; leather or any other substance; or in which he will be sufficiently taught the rudiments of chemistry, as to enable him to pursue the subject and bring it into practice in his future manufacturing operations; or so far instructed in the principle of mechanics and mechanical drawing, as to render the knowledge thus acquired useful to him when he takes his place as an apprentice at the mechanics' bench? Or will "S. R." name the

school in which the future cook, housekeeper, or head of a family, can learn anything of the chemistry of food, or the philosophy of cooking it aright; or the son of a farmer, or farm labourer, anything of the nature of the soils, drainage, plant food, and the growth of plants, or the proper time for cutting timber for mechanical or fuel purposes, the use of trees, and the advantages of fruit and horticulture. &c.; or the farmer's daughter, the philosophy of butter and cheese making, poultry raising, and food preserving, &c. We ask these questions in reference to "our Canada." Is the Mother Country any more favourably situated in this respect? We answer, No! if the statements of the many writers for British technical journals are any authority, or the opinions of a host of other practical men who have recently written or spoken on the subject, are of any account.

We have not the means of ascertaining what are the facilities afforded in the continental countries of Europe; but taking it for granted that not a few of the writers referred to are correct, we believe that technical education is far more liberally provided for in some of these countries than it is in Britain.

It would be easy to show, that, scarcely any of the institutions or publications of Great Britain, to which "S. R." has referred, supplies what is demanded by or adapted to the wants of the workman. It would, however, be a useless task for us to pursue the subject, as we have not now the space to do so; and, with the issue of this number of the journal, our opportunities for doing so in these pages will cease. It is an important subject to discuss; and we would be pleased to see it taken up by an abler pen than ours. Let all who feel interested in it—and who does not? read the able speech of Mr. Lowe, M. P., in another portion of this number.

ASSOCIATION OF MECHANICS' INSTITUTES.

At the close of the Annual Meeting of the Board of Arts and Manufactures, on Tuesday, the 21st January, last, a meeting of the representatives of the Institutes was held, and an "Association of Mechanics' Institutes of Ontario" formed. Dr. Beatty, of Cobourg, President of the Board, was elected the first President of the Association; John Shier, Esq., of Whitby, the Vice-President; and John Moss, Esq., Secretary of the Toronto Mechanics' Institute, its Secretary.

A committee was also appointed to draft a constitution and rules, and to report at the meeting to be held at the place and during the week of holding the next Provincial Exhibition.

By section 24 of the new Agricultural and Arts Bill, this Association becomes a body corporate; and by section 10 its president, or in his absence the vice-president, is *ex-officio* a member of the council of the Association.

It would give great satisfaction if, by some means, this Association should be placed in possession of funds sufficient to justify its publication of a journal, to take the place of the *Journal of the Board of Arts and Manufactures*; and also to be its medium of communication with the Institutes, and their recognized organ, and advocate of their special interests and progress, as educating institutions

THE JOURNAL: ITS DISCONTINUANCE.

Our Subscribers and Readers will observe, by the proceedings of the late Annual Meeting of the Board of Arts and Manufactures, and by the remarks on the new Agriculture and Arts Bill, in other portions of this number, that the Board has been discontinued, and that the publication of the Journal ceases with this issue.

We exceedingly regret, and we know that a large number of our readers do also, that this should be the case; for no other publication in the Dominion has supplied the valuable practical information uniformly found in its pages, as selected from the best of the British and foreign technical journals.

Mechanics and others interested in industrial pursuits would do well to subscribe for one or more of the following periodicals, as furnishing valuable information to all, and invaluable information to many. Any of our importing booksellers can furnish them, and, as near as we can remember, at the prices annexed, per annum.

London Engineer, weekly, per annum, delivered	\$9 00
“ Mechanics' Magazine, weekly, “	7 00
“ Builder, “	7 00
“ Chemical News, (Am. reprint) “	2 00
“ Practical Mechanics' Journal, monthly, “	3 50
“ Artizan, “	3 50
“ Popular Science Review, quarterly, “	3 00
American Artizan, weekly	2 50
“ Journal of Mining, weekly, “	4 00
Scientific American, “	3 00

STEAM STAMP QUARTZ CRUSHER.

Messrs. Dickey, Neill & Co., announce to all parties engaged in quartz mining, that they are now manufacturing C. J. JAMES' "Stamp Quartz Crusher," patented in the U. S. in June, 1867.

The advantages they claim for this machine, are "lightness, simplicity, and compactness, combined with great rapidity and force of blows given."

If they have succeeded in the object they profess to have had in view: the production of "a cheap, simple, and good stamp mill, capable of meeting the difficulties met in pulverizing ores,"

every encouragement should be afforded them by parties purchasing such machines, instead of going to the U. S. for their supplies.

An illustrated circular will be sent on application, addressed to Dickey, Neill & Co., Soho Foundry, Toronto.

SUPPLEMENTARY INDEX.

So as to enable our subscribers to bind up the two numbers for this year, with the volume for last year, we herewith furnish a supplementary index. We have a number of copies of the several volumes of the Journal, on hand, with the exception of volumes two and three, of which but three or four copies of each remains. Parties desirous of having complete sets should apply at once. Each year, bound, one Dollar.

TO AGRICULTURAL AND OTHER SOCIETIES.

The Hon. the Commissioner of Agriculture, with the new Agricultural and Arts Statute has issued a circular to the various Societies embraced in it, calling attention to its various provisions, and especially to the formation of an Agricultural and Arts Museum and Library, in connection with his department. We have only room for some extracts. The Commissioner says:—

"I have therefore earnestly to request the various societies embraced within the Statute, to favour me with their co-operation towards the attainment of this object, which, without such aid, it will be impossible to accomplish. It is hoped that a goodly number of specimens in the departments before intimated, will be sent in during the present year, so as to be arranged before the next meeting of Parliament. Grain in the *Straw*, carefully pulled up by the roots just before ripening, is particularly requested. Each article will be labelled with the grower or producer's name and address, with other particulars; and the Department will pay costs for freight. As the Museum will be freely thrown open to the public, in capacious rooms of the Parliament Buildings, mechanics and others will find this a good and inexpensive way of giving publicity to their productions.

"In connection with the Museum, a Technical Library is formed which is free to all for consultation. Already about fifteen hundred volumes of valuable and suitable books procured by the late Board of Arts and Manufactures, have been arranged on the shelves; and such works of authority on Agriculture, Horticulture, and the applied sciences connected therewith, will be speedily obtained, so as to render the library for practical purposes of great value.

"I also invite the attention of Managers of Mechanics' Institutions to the provisions made (Sections 24 and 25) for affording aid in the important matter of Adult Evening-Class instruction, and the formation of Technical libraries; and trust the Institutes will largely avail themselves of them."

AN ACT

FOR THE ENCOURAGEMENT OF AGRICULTURE, HORTICULTURE, ARTS AND MANUFACTURES.

Her Majesty, by and with the advice and consent of the Legislative Assembly of Ontario, enacts as follows:

Bureau &c., continued.

1. The Bureau of Agriculture, the Agricultural Association, the Board of Agriculture as Council of the Association, and all Agricultural Societies heretofore recognised and existing in that part of the late Province of Canada called Upper Canada, shall continue, except so far as they may be altered or affected by this Act.

Bureau of Agriculture and Arts.

2. The Bureau of Agriculture and Arts shall be attached to the Department of the Commissioner of Agriculture and Public Works, who shall be charged with the direction of the said Bureau, and shall in respect thereof be known as the Commissioner of Agriculture and Arts.

3. The said Commissioner of Agriculture shall be *ex officio* a member of the Council of the Agricultural Association in the Province of Ontario.

Annual Report.

4. It shall be part of the duty of the said Commissioner of Agriculture 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 a manner and form as he finds 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.

Museum and Library.

5. The said Commissioner shall, in connection with his Bureau, cause to be established a Museum illustrative of Agriculture, Horticulture, and Arts and Manufactures, and also a Library of books in the same departments of industry; and the said Museum and Library shall be free for examination or reference, during the usual office hours.

Associations to answer questions.

6. The Agricultural Association, all Agricultural Societies, Municipal Councils, Mechanics' Institutes and 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 Association, Society, Council, Institute or other Public Institution, refusing or wilfully neglecting 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 Commissioner, or by any person duly authorized by him in that behalf, shall, for every such offence, incur a penalty of Forty Dollars, which shall be recoverable by any person suing

for the same before any court of competent jurisdiction, and shall be paid to Her Majesty.

Accounts of Societies, &c.

7. The Commissioner 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 being in any way in connexion with the Bureau of Agriculture; and all officers of any 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 put to them in relation thereto, or to the funds of such society.

The Agricultural and Arts Association.

Members of Association.

8. The Council of the Association, the Presidents and Vice-Presidents of all lawfully organized County Agricultural Societies, and of all Horticultural Societies, and of the Mechanics' Institutes, and all subscribers of one dollar annually, shall constitute the Agricultural Association.

Life-Members.

(1) The payment of ten dollars shall constitute a Life-Membership of the Association, when given for that special object, and not as a contribution to any local fund; and those persons who have heretofore been made Life-Members under By-Laws of the Association, shall continue to be Life-Members of the same.

Directors.

9. The Council and the ex-Presidents of the Agricultural Association, and the Presidents and Vice-Presidents of the County Societies, Mechanics' Institutes, Arts Associations, and of all Horticultural Societies (or any two members whom a County Society, Mechanics' Institute, Arts Association or Horticultural Society, shall have appointed to act instead of its President and Vice-President) shall be the Directors of such Agricultural Association

Council.

10. The Council of the Agricultural Association for Ontario shall be composed of twelve members, elected as hereinafter provided; and the Hon. the Commissioner of Agriculture, all Professors of Agriculture in chartered Colleges and Universities, the chief Superintendent of Education, the President of the Fruit-Growers' Association and the President of the Association of Mechanics' Institutes of Ontario, or in the absence of the Presidents, then the Vice-Presidents, shall respectively be members *ex officio* of such Council of the Association.

Powers of the Council.

11. The Council of the Association, so composed, shall have 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 to any Local Committee for the local expenses of an Exhibition) shall be received by and expended under the direction of such Council.

Contracts with Council.

12. All contracts and all legal proceedings, by, with, or concerning the Association, shall be made

and had with the Council of the Association in its corporate capacity; and no other contracts, agreement, actions or proceedings shall bind or affect the Association.

Agricultural Districts.

13. Ontario shall be divided into twelve Agricultural Districts, designated by numbers, as in Schedule A annexed to this Act, each comprising the counties designated in said schedule.

County Societies to elect.

14. The County Agricultural Societies in the several Districts shall, at their annual meetings provided for by sections thirty-seven of this Act, each elect one person to represent it at the Council of the Association, by a majority of the votes of the members of the Society present at such meeting; and the Secretary of each Society shall, within eight days after the election, forward to the Commissioner of Agriculture the name of the person chosen by the Society.

(1) The Commissioner of Agriculture shall, as soon as practicable after being notified by the Secretaries as aforesaid, officially announce the names of the persons who shall have received the majority of votes in the several districts.

(2) In case of an equality of votes for two or more persons, the Commissioner of Agriculture shall have a casting vote.

(3) Vacancies through death, resignation or otherwise, shall be filled up by the Commissioner of Agriculture.

First Election.

15. The first election shall take place at the Annual Meetings in the year one thousand eight hundred and sixty-nine in each of the Districts designated in Schedule A, and the persons so elected shall replace the whole of the members of the present Council of the Association, who shall still continue to exercise their present functions, until after the Commissioner of Agriculture shall publish the result of said election.

Four Members to retire Annually.

16. The four members representing districts numbers 1, 2, 3 and 4, shall retire, and four other persons shall be elected, at the annual meetings in January, one thousand eight hundred and seventy; the four members representing districts numbers 5, 6, 7 and 8, shall retire, and four other persons shall be elected at the annual meetings in said districts in January, one thousand eight hundred and seventy-one; the four members representing districts numbers 9, 10, 11 and 12, shall retire, and four other persons shall be elected at the annual meetings in said districts in the year one thousand eight hundred and seventy-two, and thereafter, in the order in which such members have been elected for the respective districts; and four members of the Council shall retire annually, unless re-elected, each seat being vacated every third year; but retiring members may continue to exercise all their functions until their successors have been duly elected. The retiring members of the Council shall in all cases be eligible for re-election; and the Secretary of the Association shall send a list of the names of the retiring members to the Secretary of

each County or Electoral Division Society on or before the first day of December in each year.

Members to act gratuitously.

17. The said Council shall not pay or allow any sum to any member thereof, for acting as such member, except the amount of his actual necessary expenses in attending the regular meetings of the Council; but the said Council may appoint a Secretary, who shall be the Secretary of the Association, and may pay him a reasonable salary for his services; and the said Council shall also pay the Auditors appointed, as provided for in section twenty-three, a reasonable remuneration for their services.

Meetings and Functions of the Council and Directors.

President and Treasurer.

18. The first Meeting of the Council of the Association, after the election of members in each and every year, shall be called by the Secretary of the Association some time during the month of February; and at such meeting the members present shall elect from among the *elected* members a President and Vice-President, and shall also elect a Treasurer of the Association from amongst themselves, or otherwise, but if not elected from amongst themselves, such Treasurer shall be *ex-officio* a member of the Council of the Association; and the said Treasurer shall furnish such security as the Council may deem necessary, and he may be paid a reasonable salary for his services.

Secretary, &c.

(1) The present Secretary of the Board of Agriculture shall continue to be the Secretary of the Association, until otherwise provided by the Council thereof.

(2) And in the absence of the President or Vice-President from any meeting, the Council may appoint a Chairman *pro tempore*.

(3) Five members of the Council shall be a quorum.

(4) The regular meetings of the said Council shall be held pursuant to adjournment, or be called by the Secretary at the instance of the President or in his absence by the Vice-President, or upon the written request of any three members; and at least seven days' notice of such meeting shall be given to each member.

Duties of the Council.

19. It shall be duty of the Council:

(1) To hold a Fair or Exhibition, annually, open to competitors from any part of the Dominion of Canada or from other countries, as the Directors may see fit.

(2) To take measures, with the approbation of the Commissioner of Agriculture, to procure and set in operation a model, illustrative or experimental, farm or farms in the Province, and in connection with any Public School, College or University, or otherwise, and to manage and conduct the same.

(3) 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 machinery, 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.

(4) And generally to adopt every means in their power to promote improvement in the agriculture in the Province.

Veterinary Surgeons.

(5) The Council may establish a Veterinary School, and pass by-laws and adopt measures to allow persons desirous of practising as Veterinary Surgeons to undergo an examination, and upon proof to the satisfaction of the Council that they possess the requisite qualifications, may grant certificates of capacity to such persons to practice as Veterinary Surgeons.

Records of Transactions.

20. The said Council shall keep a record of its transactions, and may 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 Council may procure and adjudge suitable for publication.

By-laws.

21. The said Council shall transmit to the Bureau of Agriculture, on or before the first day of July in each and every year, a report of their proceedings; and shall also send a copy of their resolutions, by-laws or other formal proceedings, immediately after the adoption thereof.

Expenditure of Money.

(1) And no resolution, by-law or other proceeding of the Council involving an expenditure of money to an amount exceeding forty dollars, shall be passed, except with the assent of a majority of the members thereof, or upon the recommendation of an Executive Committee, of not less than three members, who shall be appointed in accordance with a by-law of the Association.

Council a Body Corporate.

22. The said Council shall continue to be a body corporate, and may acquire and hold land and personal property for the purposes of its incorporation, and may sell, lease or otherwise dispose of the same; and all property, real or personal, heretofore vested in or held by the Board of Agriculture and the Agricultural Association, shall by this Act, be vested in and for the Agricultural and Arts' Association, and be held by the said Council thereof.

Meeting during Exhibition.

23. The Directors shall hold a meeting during the week of the Annual Exhibition, and shall at such meeting elect two auditors, whose duty it shall be to examine and report upon all monies received and expended by the Treasurer of the Association, and a copy of their report shall be transmitted to the Commissioner of Agriculture, to the several County and Electoral Division and Horticultural Societies, Mechanics' Institutes, and the Fruit Growers Association, by the Secretary of the Association, on or before the first day of July in the ensuing year. The Directors shall also 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.

Mechanics' Institutes.

Association of.

24. Any number of Mechanics' Institutes, by resolution of their respective Boards of Directors (if such an Association has not been already formed) may form themselves into an Association to be known as the "Association of Mechanics' Institutes of Ontario;" and such Association shall have power to adopt a constitution and make by-laws for the admission of Associate Institutes, and for any purposes consistent with the objects of Mechanics' Institutes, and not contrary to the provisions of this Act or the general laws of the Province; and on filing a copy of such constitution and by-laws with the Commissioner of Agriculture such Association shall become a body corporate.

Annual Meeting.

(1) Such Association shall hold its annual meeting at the place, and during the same time, as the Exhibition of the "Agricultural and Arts' Association," is being held, in each and every year; and a report of the proceedings of the Association shall be made to the Commissioner of Agriculture within fourteen days after the holding of such annual meeting.

Representation.

(2) Each Associate Institute shall be represented at the Annual Meeting by its President and Vice-President, or any two other office-bearers that such Institute may appoint in place of its President and Vice-President.

Grants to Institutes.

25. Any Mechanics' Institute incorporated under chapter 72 of the Consolidated Statutes of Canada, or by special act of incorporation, having evening classes organized for the imparting of practical instruction to its pupils, or having established a library of books on mechanics, engineering, or chemical or other manufactures, shall be entitled to receive from unappropriated monies in the hands of the Treasurer of the Province, for the purpose of aiding in such class instruction or technical library, or both, a sum not to exceed two hundred dollars in any one year; provided the sum so paid shall not be greater than the sum locally contributed, or appropriated by such Institute, for such specific object or objects; and provided, also, that the amount of such local contribution or appropriation shall be attested by an affidavit made by the Secretary of such Institute as may apply for aid (which affidavit may be in form of Schedule D. to this Act annexed).

Reports.

(1) Each Institute so receiving aid, shall contribute and pay over to the Treasurer of the Association of Mechanics' Institutes of Ontario five per cent. thereof; and such Institute shall also cause to be forwarded to the Commissioner of Agriculture a properly certified copy of its Annual Report, for the year in which such aid has been granted.

Horticultural Societies.*How to be formed.*

26. Any number of persons not less than fifty, in any city or town of not less than two thousand inhabitants, and not being in itself constituted an Electoral Division, and whether such city or town is, or is not, separated from the county for municipal or other purposes, may organize and form themselves into a Horticultural Society, by signing a declaration in the form of Schedule B., to this Act annexed (but with necessary alterations as to the name of the Society), and paying each not less than one dollar to the funds of the society, for that year; and all persons thereafter paying each the sum of one dollar annually, to the funds of the society, shall be members thereof; and such societies shall have all the rights and privileges, and be subject to the same obligations as Township Agricultural Societies, in reporting to, and participating in the grants to the County or Electoral Division Societies in the Electoral Divisions in which they may respectively be situated.

Declaration.

27. 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 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 Commissioner 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 official *Gazette* for the Province.

Corporation.

28. Upon the insertion in the official *Gazette* of the notice of the formation of any such Society it shall become a Corporation for the object 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 may acquire and hold, lease, mortgage and alienate property, real and personal, for the purposes of such Society.

Laws, &c.

29. Every Horticultural Society incorporated under this Act may make By-laws, not being contrary to the laws of this Province, or to this Act, presenting the mode of admission of new Members and election of officers, and otherwise regulating the administration of its affairs and property.

Election of Officers.

30. Every such Society shall hold its annual meeting in the second week of the month of January, 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, Vice-President, a Secretary and a Treasurer, or Secretary-Treasurer, and not fewer than three, nor more than nine Directors, shall be elected.

Annual Report.

31. 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 herein directed for County or

Electoral Division Agricultural Societies, and containing information under the same heads, save and except those which relate to Agriculture—the object and purpose of Horticultural Societies being the same as those of Agricultural, as hereinafter mentioned, but with reference to Horticulture only; and the said Society shall transmit a true copy thereof to the Secretary of the County Society, properly certified, in time for the Annual Meeting thereof, in the month of January.

The Fruit Growers' Association.*How to be formed.*

32. Any number of persons, not less than twenty-five, may organize and form themselves into a Society, to be known as "The Fruit Growers' Association of Ontario," by signing a declaration and taking such other proceedings as are prescribed in sections 26, 27 and 28 of this Act, in relation to Horticultural Societies; and upon notice thereof being inserted in the official *Gazette*, such Society shall be, and become, a body corporate, and may make laws and regulations for its guidance and proper management, so long as the same shall not be contrary to the provisions of this Act, or the general laws of the Province.

Grant \$350.

(1) And such Society shall be entitled to receive from unappropriated Monies in the hands of the Treasurer of the Province, a sum not to exceed Three Hundred and Fifty Dollars, in any one year, and on the same conditions provided in the case of County or Electoral Division Agricultural Societies, in the forty-sixth section of this act.

Election of Officers.

33. The said Society shall hold an annual meeting at the place, and during the same time as the Exhibition of the Agricultural and Arts Association is being held, in each and every year; and shall, at such meeting, present a full report of its proceedings, and detailed statement of its receipts and expenditure for the previous year, and shall, at such meeting, elect a President, Vice-President, Secretary and Treasurer (or a Secretary-Treasurer) and not fewer than five, nor more than nine Directors, and they shall also elect two auditors.

Report.

(1) A copy of the Annual Report of its proceedings, and a list of the office-bearers elected, and also such information as the Society may have been able to obtain on the subject of Fruit culture in the Province, shall be sent to the Commissioner of Agriculture within fourteen days after the holding of such Annual Meeting.

Agricultural Societies—County or Electoral Division Societies.*Society may be organized.*

34. An Agricultural Society may be organized in each of the Electoral Divisions of Ontario, as now constituted for the purpose of representation in Parliament (in which there was not one at the time of the passing of this Act), whenever fifty persons have become members thereof, by signing a declaration in the form of the Schedule B to this Act annexed, and paying each not less than One Dollar to the funds of the said Society for that year; and all persons thereafter paying each the

sum of One Dollar annually to the funds of the Society, shall be members thereof; and a true copy of the said declaration shall, within one month after the money has been so paid, be transmitted to the Commissioner of Agriculture, except that the two Electoral Divisions of the City of Toronto shall only constitute one Division for the purposes of this Act.

Object of such Societies.

35. The object of the said Societies, and of the Township Societies in connection therewith, shall be to encourage improvement in Agriculture, Horticulture, or Arts and Manufactures.

(1) By holding meetings for discussion, and for hearing Lectures on subjects connected with the theory and practice of improved husbandry or other industrial processes.

(2) By promoting the circulation of Agricultural, Horticultural and Mechanical Periodicals.

(3) By importing, or otherwise procuring, Seed, Plants and Animals of new and valuable kinds.

(4) By offering Prizes for Essays on questions of scientific enquiry relating to Agriculture or Horticulture, Manufactures and Works of Art.

(5) And by awarding Premiums for excellence in the raising or introduction of Stock, the invention or improvement of Agricultural or Horticultural Implements and Machinery, 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.

(6) The funds of the Societies, derived from subscription of members or the public grants shall not be expended for any object inconsistent with those above mentioned.

(7) And the Directors of every such County or Electoral Division Society, at any meeting called by written notice, as hereinafter mentioned, and in which notice the object of the meeting has been specified, may make, alter and repeal By-laws and Rules for the regulation of such Society and the carrying out of its objects.

First Meeting, how called.

36. The first meeting for the formation of a County or Electoral Division Agricultural Society under this Act, shall be called by the Representative of such Electoral Division in the Legislature of Ontario, in the third week of January in each year, at which meeting the election of the various officers shall take place, and the Society so organized shall be deemed the County or Electoral Division Society, and shall be entitled to receive the Government Grant hereinafter provided; and all subsequent Annual Meetings shall be called and held as provided in the next following Section of this Act.

First Meeting for 1868.

(1) It shall be lawful for the Representative of any Electoral Division in the Legislature of Ontario, in which a Society has not already been organized in accordance with this section, to call a meeting and organize a Society at any time prior to the first day of May, one thousand eight hundred and sixty-eight; and such meeting shall

be held at or near where the Nomination of Candidates at the last General Election was held in such Electoral Division.

Election of Officers.

37. The said Societies shall hold their annual meetings in the third week, that is to say, between the fifteenth and twenty-first days of January, in each year, and shall at such meeting elect a President, two Vice-presidents, a Secretary and Treasurer, (or a Secretary-Treasurer), and not more than nine other Directors, who shall constitute the officers of the Society: and shall also elect two Auditors.

Office-Bearers.

(1) The Secretary of each Electoral Division Society shall, with the return of persons nominated to the Council of the Association, as provided for in section fourteen of this Act, also return a full list of the several office-bearers elected at the annual meeting of such society.

38. The Meetings of the Officers and Directors shall be held pursuant to adjournment, or be called by written notice 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.

Annual Report.

39. 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 being set opposite to his name, the amount awarded in Prizes to each kind of Live Stock, Agricultural Products, Implements, Domestic Products or other objects, respectively, together with such remarks and suggestions upon the Agriculture and Horticulture of the county, and Arts and Manufactures therein, as the Directors are enabled to offer.

Annual Accounts.

(1) There shall also be presented to the said Annual Meeting a detailed statement of the receipts and disbursements of the Society during the year, in which shall also be shown the expenses of management under separate and distinct heads.

Report to Bureau.

(2) The said 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 Bureau of Agriculture, on or before the first day of March next following.

Report from Townships.

40. The County or Electoral Division Society shall receive the Reports of the Township Societies, and of the Horticultural Societies organized under section twenty-six of this Act, and shall transmit them to the Bureau of Agriculture, with such remarks thereon as will enable the Commissioner to obtain a correct knowledge of the progress of Agricultural Improvements in the County or Electoral Division.

Information to Bureau.

41. The said Officers and Directors shall answer such queries and give such information as the Commissioner of Agriculture may from time to time, by Circular, Letter or otherwise, require, touching the interests or condition of Agriculture in their County or Electoral Division, and generally shall act as far as practicable upon the recommendations of the said Commissioner.

Township Societies.*How organized.*

42. A Township Agricultural Society may be organized in each Township in Ontario, in which there was not one already organized at the date of the passing of this Act, or in any two or more such townships together, wherever a sufficient number of persons, not less than fifty, become members by signing a declaration in the form of Schedule B, to this act annexed, and paying each not less than one dollar to the funds of the Society for that year; and all persons thereafter paying each the sum of one dollar annually to the funds of the Society, shall be members 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.

Name of Society.

(1) Each Township Society shall be legally known and designated by the name of the Township or Union of Townships in which it is situated, and there shall not be more than one such Society in any Township.

Division of Townships.

(2.) In cases where part of a Township is in one Electoral Division and part in another, the Township Society shall transmit a copy of its Annual Report to the Secretary of each such Electoral Division Society, as provided for in Section forty-four; and such Township Society shall also return to the respective Treasurers of the said Electoral Division Societies a list of the Subscriptions of its Members, attested as in other cases provided for by Section forty-eight; and based on such returns shall receive from each of such Electoral Division Societies its share of all Legislative and other public grants, but in the proportion of fifty per cent only of such returns, as compared with the returns of other Townships in the respective Electoral Divisions.

Election of Officers.

43. The said Societies shall hold their Annual Meetings in the second week, that is to say on some day between the seventh and fourteenth day, inclusive, of the month of January in each year, and shall elect a President, Vice-President, Secretary and Treasurer, (or Secretary-Treasurer,) and not fewer than three nor more than nine other Directors, and shall also elect two Auditors.

Report.

44. 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 heading, 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 month of January.

General Provisions Relative to Agriculture and other Societies.*Where Exhibition held.*

45. The exhibition of the County Society shall be held wherever the majority of the Directors, or of a quorum thereof, think fit, giving due and public notice thereof, within the limits of the said County or Electoral Division, or of any adjoining County or Township, with the Society of which they may unite their funds as hereinafter mentioned.

Union of Societies.

(1.) Any two or more County and Township Societies may, by agreement between the Directors thereof, or a majority of Directors of each such Society, unite their Funds, or any portion thereof, for the erection of suitable Buildings in which to exhibit Articles of Produce or Manufactures, or Work of Art, and for annual or extra Shows, or for Ploughing Matches, or for any other purposes likely to promote the welfare of any one or more Counties or Townships, in Agriculture, Horticulture, Arts or Manufactures, and may acquire by purchase or lease and hold sufficient land for this purpose from time to time, and may exchange and sell the same.

Merging Township with County.

(3.) No Separate Township Show shall be held in the Township in which the County Fall Show shall be held in any year, but the funds of the Township Society in such case may be merged with those of the County Society for that year, and, if so merged, the members of such Township Society shall be entitled to all the privileges of members of the County Society at the show; and the Directors of such Township Society shall be Co-Directors with the Directors of the County Society, for the conducting and management of such show.

Allowance to County Societies.

46. A County Society having previously forwarded to the Commissioner of Agriculture a copy of its Report and statements for the year then last past, as required by this Act, and transmitting to the Commissioner of Agriculture an affidavit, on or before the first day of July in each year, (which may be in the form of Schedule C, to this Act annexed, and may be sworn to before any Justice of the Peace,) stating the amount subscribed for that year, and paid to the Treasurer of the County Society by the members thereof, together with the amounts returned to the said Treasurer of the County Society by the several Township and Horticultural Societies of the said County (as provided in Section forty-eight of this Act) shall be entitled to receive a sum, to be paid out of any unappropriated monies in the hands of the Treasurer of the Province, equal to three times the amount certified by the said affidavit of the Treasurer of such County Society.

Proviso.

(1.) But no Grant shall be made unless one hundred dollars be first subscribed and paid to the Treasurer of the County Society, and to the

Treasurers of the Township Societies within its limits.

Grant \$700.

(2.) And the whole amount to any Electoral Division Society shall not exceed seven hundred dollars in any year.

Toronto, \$550, other Divisions, \$350.

47. The City of Toronto shall be entitled to receive a sum not exceeding Five Hundred and Fifty Dollars in any year, and the following Electoral Divisions, viz., the City of Kingston, the City of Hamilton, the Town of Brockville, the Town of Niagara, the Town of Cornwall, the City of London, and the City of Ottawa, as bounded for purposes of representation in the Legislative Assembly, shall each be entitled to receive a sum not exceeding Three Hundred and Fifty Dollars for the encouragement of Agriculture, Horticulture, Manufactures and Works of Art within their respective limits;

Proviso.

(1.) Provided that a sum equal to one-third of the amount to be so paid by the Government is subscribed and paid to the Treasurer of a Society to be formed within such Electoral Division, except in the case of the City of Toronto where two-thirds must be subscribed, in the same manner as County Agricultural Societies under section forty-six of this Act, and to be called "The Society for the Electoral Division of——," as the case may be.

Allowance to Townships.

48. Every Township Society organized at the time of the passing of this Act, and every Township or Horticultural Society hereafter organized under the provisions of 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 subscribed and paid by the members of such Township Society, and a list thereof, stating the amount paid by each member, shall be returned to the Treasurer of the County Society, attested by an affidavit made by the Treasurer of such Township Society, in like manner as provided in the case of the Treasurers of County Societies, section forty-six (which affidavit may be in form of Schedule E to this Act annexed,) on or before the first day of June in each year, and the Treasurer of the County Society shall pay over to any Township or Horticultural Society its share of the Public Grant, which shall be in proportion to the amount it has subscribed, as compared with the amounts subscribed by the other Township Societies of the County, as soon as the said grant is received by the County Society.

Three-fifths to be Divided.

(1.) Provided that three-fifths, and no more, of the sum so received by any County Society shall be subject to division among Township and Horticultural Societies; and provided that the declaration mentioned in section forty-two shall be deemed a sufficient report in the first year in which any Township Society has been organized, and that no Township or Horticultural Society shall thus receive more than three times the amount so deposited by it as aforesaid, nor more

than one-fifth of the entire grant to the Electoral Division Society.

Membership.

(2.) 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 Society, except when the County Show shall be held within the limits of a Township, as mentioned in section forty-five, sub-section two, of this Act.

Rights of Voting.

(3.) All persons who shall have paid the membership subscription for the year then next ensuing, to any society organized under this act, and prior to the first of January of such ensuing year, shall have the right of voting at the election of such office bearers, and on all other questions submitted to the annual meetings of such societies, which shall apply solely to the business of such ensuing year; and all persons whose names are recorded on the Books of any such society as legal members thereof under this Act, shall have the right of voting on all other questions submitted to such annual meetings.

Vacancies.

(4.) In the event of the Secretary or Treasurer of any Agricultural or other Society dying or resigning Office during the time for which he has been elected, it shall be the duty of the Directors, and they are hereby empowered, to nominate and appoint a fit and proper person to fill the office for the unexpired term of the person so dying or resigning as aforesaid.

Commissioner to pay Grants.

49. The Lieutenant-Governor shall issue his warrant in favor of the Agricultural and other societies entitled to grants under this Act, to the amount of the whole appropriation required, as certified by the Commissioner of Agriculture; and the said Commissioner of Agriculture shall cause to be paid over to the County Societies, the Public Grants to which they are respectively entitled.

False Affidavit.

50. Any Treasurer or other officer of any County or Township Society, who makes 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 returns any such subscription, shall forfeit and pay to Her Majesty the sum of Forty Dollars for every such offence, and shall be guilty of perjury, and be held liable to all the penalties with which the law visits that crime.

Societies Bodies Corporate.

51. The several County Societies organized at the time of the passing of this Act, 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 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 Bureau of Agriculture, such Society shall thenceforth be and become a body corporate, and shall have like powers with County Societies.

Society may purchase Land.

52. Any County or Township Society, or the Municipal Council of any County or Township in Ontario, may 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, and may, conjointly or otherwise, make all necessary rules and regulations for the management thereof, provided that not more than two hundred acres of land shall be so held by any Society or Council, whether conjointly or otherwise.

Property in one or more Divisions.

53. In any County, or Riding of a County, divided into two or more Electoral Divisions by the Act of Confederation, it shall be necessary to organize a new Agricultural Society for each; and any property that may have been held by the Agricultural Society representing the County or Riding prior to such division, or the value thereof, shall be equitably apportioned or divided by three 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; and in cases where new Ridings or Electoral Divisions have been formed for the purpose of Representation in Parliament, by Townships taken from two or more Counties or Electoral Divisions, then any property, real or personal, which originally belonged to such County or Electoral Division Society before the said townships were taken therefrom, shall continue to belong to the Societies of such Original Counties or Electoral Divisions.

Interpretation Clause.

54. The words "Commissioner," or "Commissioner of Agriculture," mean the "Commissioner of Agriculture and Arts"; the words "Bureau of Agriculture," mean the "Bureau of Agriculture and Arts"; the words "Council" or "Council of the Association," mean "Council of the Agricultural and Arts Association"; the word "County" in the sections of the Act applying to Agricultural Societies, means "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, mean a Division for purposes of representation in the Legislative Assembly of the Province of Ontario; and the counties named in Schedule A of this Act, mean all the Electoral Divisions embraced within such counties.

Counties hereafter Formed.

(1) And the provisions of the said sections with regard to the Grants and Electoral Divisions, conditions of Grants, &c., &c., shall extend to any new Electoral Divisions to be hereafter formed in Ontario:

Municipal Aid to Agricultural and other Societies.
Municipal.

55. The Municipality of any City, Town, Village, County or Township in this Province, may

grant money or land in aid of the Agricultural Association, or of any Agricultural or Horticultural Society whatever duly organized under this Act, or of any incorporated Mechanics' Institute within the limits of the Municipality.

Policemen, &c.

56. Any Justice of the Peace for any City, Town, Village, or Township, wherein a Fair or Exhibition may be held, shall, on the request of the Council of the Association, or the Directors or Executive Committee of any Agricultural or Horticultural Society, appoint as many Policemen or Constables as may be required, at the expense of the said Association or Society, such Policemen or Constables to be named by such Association or Society, whose duty it shall be to protect the property of the said Association or Society within the Exhibition grounds, to eject all persons who shall behave improperly within the grounds, or who shall behave in a disorderly manner, or otherwise violate any of the Rules or regulations of the said Society.

Penalty for infringing, &c.

57. If any person shall wilfully injure or destroy any property within the Exhibition grounds of the Association; or of any Agricultural or Horticultural Society, or shall hinder or obstruct the officers or servants of the said Association or Society, or any Policeman or Constable duly appointed as aforesaid, in the execution of his duty, or shall gain admission to the said grounds contrary to the rules of the said Association or Society, he shall be liable to a fine of not less than One, nor more than Twenty Dollars, said fine to be enforced and collected as fines are usually collected, and to be paid over to said Association or Society for its use and benefit; and in default of payment the said offender shall be imprisoned in the Common Gaol for a period of not more than thirty days.

Gambling, &c.

58. The officers of any such Association or Society may by their Rules and Regulations prohibit and prevent all kinds of gambling, theatrical, circus or mountebank performances, exhibitions or shows, as also regulate or prevent the huckstering or trafficking in spirituous or intoxicating drinks, fruits, goods, wares or merchandize within 500 yards from the Exhibition Ground, and any person who may after due notice of such rules and regulations, violate the same, shall be liable to be removed by the Officers, Policemen or Constables of said Association or Society and be subject to the penalty prescribed by the next preceding section.

SCHEDULE A.

1. Stormont, Dundas, Glengary, Prescott, and Cornwall.
2. Lanark, Renfrew, City of Ottawa, Carleton, and Russell.
3. Frontenac, City of Kingston, Leeds, Grenville, and Brockville.
4. Hastings, Prince Edward, Lennox, and Ad-dington.
5. Durham, Northumberland, Peterboro', and Victoria.

6. York, Ontario, Peel, Cardwell, and City of Toronto.
7. Wellington, Waterloo, Wentworth, Halton, and City of Hamilton.
8. Lincoln, Welland, Haldimand, Monck, and Niagara.
9. Elgin, Brant, Oxford, and Norfolk.
10. Huron, Bruce, Grey, Algoma, and Simcoe.
11. Perth, Middlesex, and City of London.
12. Essex, Kent, Bothwell, and Lambton.

SCHEDULE B.

We, whose names are subscribed hereto, agree to form ourselves into a Society, under the provisions of the "Act respecting the Bureau of Agriculture and Agricultural Societies," to be called the (County Electoral Division, or Township, as the case may be) Agricultural (or Horticultural) Society of the County (or Electoral Division) 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.	\$	CTS.

SCHEDULE C.

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 reported to me by the Treasurers of the Township Agricultural Societies of the said County, under oath, as provided for in Sect. forty-eight of the Act relating thereto, as and for the members subscriptions for this year; and that 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 amount in the whole to the sum of —; and that the amounts received as subscriptions to the County Society now remain in my hands or have already been disposed of according to law.
 Sworn before me this — day of — A.D. 186— C. D.
 Justice of the Peace for the County of —

SCHEDULE D.

COUNTY OF — TO WIT:
 I, A. B., of —, Secretary of the — Mechanics' Institute, make oath and say that the sum of — has been contributed or appropriated for the special object of Evening Class instruction in said Institute, for the current year, or for the purchase of technical works for its Library, as provided for, and on the conditions named, in section twenty-five of the Act relating thereto.
 Sworn before me this — day of — A. D. 186— C. D.
 Justice of the Peace for the County of —

SCHEDULE E.

COUNTY OF — TO WIT:
 I, A. B., of the Township of —, Treasurer of the Agricultural Society for the Township of — make oath and say that the sum of — has been paid into my hands as and for the Members' Subscriptions for this year, in accordance with the list herewith returned to the Treasurer of the County Society; and that the said sum now is in my hands, or has already been disposed of according to law.
 Sworn before me this — day of — A. D. 186— C. D.
 Justice of the Peace for the County of —

Board of Arts and Manufactures
 FOR ONTARIO.

NOTICE AS TO ARREARS.

Subscribers and Advertisers in arrears to the Journal, will please notice a memorandum of the amounts due herewith enclosed. The Board being discontinued, it is requisite that all accounts should be settled with as little delay as possible; prompt remittances are therefore respectfully requested to the undersigned.

W. EDWARDS,
 Bureau of Agriculture, Toronto.

ANNUAL MEETING.

BOARD ROOM, TORONTO,
 Jan. 21st, 1868.

The Board met to day, according to adjournment, at 7 o'clock, P.M.—present: The President (Dr. Beatty, of Cobourg); the Vice-President (John Shier, Esq. of Whitby); James Fleming, Esq., Brampton Mechanics Institute; Geo. H. Dartnell, Esq., President Whitby Mechanics' Institute; John J. Withrow, President, and W. H. Sheppard, and W. Edwards, Esq's., Delegates, Toronto Mechanics' Institute; W. J. McDonell, Esq., Board of Trade, Toronto; T. Mellwraith, Esq., Delegate from Hamilton Mechanics' Institute; George Buckland, Esq., Prof. of Agriculture University College, Toronto; Adam Fullerton, Esq., Delegate Greenwood Mechanics' Institute; and James Bain, Esq., Delegate Ayr Mechanics' Institute.

Minutes of previous Annual Meeting were read and approved of, as correct.

The Secretary then read the Report of the Subcommittee:—

Report.

Under ordinary circumstances, it would have been the duty of your Committee for the past year to have given a full account of their Stewardship, and to have resigned the trust committed to them into the hands of their successors, to be to-day

elected—the Government for the Province of Ontario have, however, decided otherwise; and this the tenth Annual Meeting of the Board, it is decreed shall be the last.

Your Committee's predecessors, in the last Annual Report, drew attention to the change that would result from the then contemplated union of the Provinces: that the maintenance of this Board would thereafter devolve upon the Local Government of Ontario. That event consummated, a special Committee was appointed to confer with the Local Government and to submit plans for the more efficient working and increased usefulness of the Board. That Special Committee prepared the Annexed Memoranda, which was submitted to the Hon. Commissioner of Agriculture.

Your Committee were subsequently informed by the Hon. Commissioner, at a meeting called for the purpose, that it was not proposed to recommend a continuance of the grant for the maintenance of the Board; that the Government would take charge of its Library and other property, which would be used as a nucleus for the formation of an Agricultural and Mechanical Library and museum, in connection with his the Commissioner's department, and be free for Examination and Reference; and that he the Commissioner of Agriculture also proposed to appoint the present Sec'y of the Board Mr. Wm. Edwards, as Secretary of the Bureau of Agriculture.

It was also suggested to the Committee, that the Library and Museum being thus located in the Public Buildings, in immediate proximity to the Halls of the Legislative Assembly and the Crown Lands and other public departments, it would assume a more provincial character than at present, and be consulted by a much larger number of visitors from other sections of the Province, than in its present locality.

Your Committee having fully considered the matter, as thus submitted to them, unanimously adopted the following Resolution, which was communicated to the Hon. Mr. Carling:

Resolved:—"That having heard the Report of Prof. Buckland and the Secretary of this Board, on the plan proposed by the Hon. the Commissioner of Agriculture for the organization of a Museum and Library in connection with his department, and rendering unnecessary the continuance of this Board—this Committee desires to express its concurrence in and approval thereof, and the belief that the interests heretofore represented by this Board will be still further advanced by the change."

A copy of the New Agricultural and Arts and Manufactures Bill, as introduced to Parliament by the Hon. Mr. Carling, has been submitted to your

Committee, in which provision has been made for the organization of the proposed Library and Museum; and, your Committee have also great pleasure in reporting the *second* scheme proposed in the Memoranda of your Committee for the encouragement of evening class instruction in Mechanics Institutes, has been introduced into the Bill by the Hon. Commissioner of Agriculture.

Your Committee also notice with pleasure, the provision made in the Bill, for representation on the Council of the Association of the president of a "Provincial Association of Mechanics' Institutes," should any such be formed; and also the representation of all Mechanics' Institutes on the directorship of the Association. Your Committee would have been gratified to have learned, that other industrial arts besides the important one of Agriculture had been recognized in the title of the Association; but the recognition given in the Bill to the mechanical arts, in various sections thereof, and the grants to Mechanics' Institutes for class instruction, indicate the desire of the present Commissioner to encourage all the industrial interests of the Province.

The second number of the eighth volume of the Journal of the Board, is now in course of preparation. With the issue of that number, its publication by the Board will cease. That it should be thus discontinued, is a cause of regret on the part of your Committee. From the commencement up to the present time, each monthly issue has contained a large amount of information most valuable to the mechanic or practical man; and could the Hon. Commissioner see his way clear to afford such encouragement as would ensure its continuance under some other management—say by the contemplated association of Mechanics' Institutes—a great service would be rendered our industrial interests.

Your Committee would express the hope, that, as the British Patent Office publications belonging to the Patent Department of the Dominion, now in possession of this Board, will soon have to be removed to Ottawa, the Local Government will make such provision as shall secure a complete set of this valuable work for its proposed library; especially as no other copy will then be found in the Province. The only appropriation necessary to secure these works, is for payment of cost of binding, and freight from England.

Your Committee desire to reiterate with great cordiality, their entire satisfaction with the manner in which Mr. Edwards has performed all the duties pertaining to the office of Secretary-Treasurer, and are much pleased to know, that while his connection with your Board ceases by lapse of this

department, that his valuable experience and services have been secured to the Bureau of Agriculture, as Secretary thereof.

Your Committee further feel themselves fully gratified, in view of unrequited labours in editing the Journal, for at least two years,—and of labour necessary to complete the last two numbers of the Journal, and to wind up the affairs of the Board, that a half-years salary be appropriated to Mr. Edwards, to be paid out of unexpended moneys.

The financial statement herewith submitted, shows total receipts to date \$3383 71; expenditure \$2479 69; balance in hand \$904 02. The estimated assets, including the above balance in hand, are estimated at \$1066 86; liabilities \$336 75; estimated balance to credit of the Board when all accounts shall be settled, \$730 11.

The Treasurers' account, when finally balanced, will be submitted to such auditors as the Board may now appoint; and the auditors report, with cash balance in hand, will then be forwarded to the Hon. Commissioner of Agriculture.

JOHN BEATTY,
President.

Memoranda.

The Committee appointed by the Board, for this purpose, desires to submit to the Hon. the Commissioner of Agriculture that the Board was organized in the year 1857, under Chap. 32 of the Consolidated Statutes of Canada; that when organized, it was understood that the Annual Legislative grant would be \$4,000 per annum—that instead of that amount, the grant has been annually but \$2,000; that with this small amount the Board has fitted up and furnished MODEL ROOM, LIBRARY, AND OFFICE—has established what is believed to be the best technological Library in British America—paid rent of rooms and salary of Secretary-Treasurer, and Editor of the *Journal*—established Annual Examinations and grants certificates of efficiency to members of Mechanics' and other Institutions, in useful studies—takes charge, by its officers, of the Arts and Manufactures department of the Agricultural Association's Annual Exhibition, &c., &c.

The free library of reference has been, for the last five years, attended by a very encouraging number of Artizans and others, for whom it is kept open during the usual office hours each day, and on two evenings in each week till 10 o'clock. The *Journal* has been published monthly for the past seven years. It contains, in its department, more useful information for practical men than any other publication in the Dominion. It has been published at a price so low—with a view to plac-

ing it within the reach of all—as to involve a yearly loss thereon of at least *one third* the Annual Legislative Grant. The management of the officers of the Board has, it is generally conceded, resulted in great improvement in the Arts and Manufactures department of the Provincial Exhibition.

So satisfied have been the various Ministers of Agriculture, in regard to the economical management of the Board and the judicious expenditure of its funds, that they have not hesitated so to submit the same in their respective Annual Reports to His Excellency the Governor General.

In view of these facts, and also that scarcely any provision is now made for the technical education of the working classes, this Committee respectfully submits that it will be judicious on the part of the Government and Legislature of Ontario not only to continue to sustain the Board, but, in the industrial interests of the Province, to extend its operations, so as to provide to a greater extent for the technical education of those engaged in Mechanical and Engineering pursuits.

This object the Board proposes to accomplish in a very economical manner, in comparison with the importance of the subject, by utilizing to a certain extent the various Mechanics' Institutes of the Province. This to be secured by:—

1st. A renewal of the grants to each properly organized Mechanics' Institute throughout the Province, embracing not less than fifty members, each paying at least \$1 per annum, and twenty of whom shall be working Mechanics or manufacturers. The maximum amount of the grant to be, say, \$400, up to which sum any Institute might draw; but to be in proportion to the number of pupils receiving instruction in its evening class or classes, and equivalent to the amount locally contributed to such class instruction—the minimum of such local contributions to be not less than \$100.

2nd. Forty per cent. of the grant to be appropriated to the purchase of books of an instructive character for manufacturers and artizans; such works to be supplied through the Board of Arts and Manufactures at reduced rates; but the selection from an approved list, to be made by the Institutes themselves.

3rd. Fifty per cent. to be devoted to the encouragement of classes established in the respective Institutes, for class instruction in mechanical or natural sciences, by lectures or otherwise.

4th. Ten per cent. to be retained by the Board of Arts and Manufactures for prizes to successful competitors at the Annual Examination of members of Mechanics' Institutes, established by this Board.

5th. The distribution of the annual grants to be made by this Board, upon approved returns from each Institute of the proper application of the funds applied for, and expended in the formation and instruction of classes, or in the establishment of prizes; such returns to be forwarded by this Board to the Commissioner of Agriculture at the close of each year, with a report on the working of the respective Institutes.

Or, instead of the foregoing plan, and as being more economical, fix the maximum aid to be given to all the Mechanics' Institutes at \$5,000, in any

one year: appropriations to individual Institutes to be made as follows:—

1st. The grant to any Institute, specially for class instruction, to be equal to the amount locally contributed to such Institute; but in no case to exceed the sum of \$200:

2nd. The grants to be paid through the Board of Arts and Manufactures, on the same conditions named in the foregoing scheme, as to supervision, reports to Board, and retention of ten per cent for examination prizes and expenses; but the whole of the remaining *sixty* per cent, to be applied to *class instruction only*.

In adopting this last plan of assistance, the requirements upon the fund would not—in all probability—average more than \$1,000 for the first three or four years; and several years would elapse before the whole sum of \$5,000 would be required for the purposes named. As time would progress, and Institutions doing *class work* would increase, so would they also in pecuniary means; so that when a sum exceeding \$5,000 for any one year would be locally contributed, the grants to each Institute might be proportionately diminished, so as not to increase the whole amount.

In connection with the above, and as a part of the scheme—but which for the present might be left in abeyance—the Board proposes the following programme for the establishment of a Central School of Arts:

1st. That the School be in three divisions, each distinct from the others, and to be commenced either separately or together as circumstances may permit.

The first division to be for the study of Natural Philosophy and Chemistry.

The second division for Drawing, Designing and Modelling.

The third division for Practical Mathematics.

2nd. The course of study to be pursued in the first division should embrace those subjects contained in classes 8, 13, 15 and 16 of the programme of annual examinations of the Board for the present year, namely, "Principles of Mechanics," "Practical Mechanics," "Chemistry and Experimental Philosophy," and "Geology and Mineralogy."

The teacher of this division should be a gentleman engaged by the Board at an annual salary. His duty should be, 1st, to give practical instruction in the classes during their sessions, on four nights per week; and in each week to give one popular lecture on science. 2nd. For one month preceding the fall session, and for one month after the spring session, to travel as a lecturer to those Mechanics' Institutes affiliated with the Board. 3rd. To edit a Chemistry and Experimental Philosophy department of the Journal. With a view to supplementing the salary paid by the Board, he be allowed to practice as an analyst on his own account, when not engaged in his duties in connection with the Board.

3rd. The fall session to commence on the first Monday in October, immediately after the teacher shall have finished his first month of lecturing, and to continue until the Friday preceding Christmas-day. The spring session to commence on the second Monday in January, and continue until the last Friday in May; after which the teacher should travel and lecture during the month of June. During the months of July and

August there should be full vacation for the teacher, excepting his duties in connection with the *Journal*.

4th. During the sessions, two evenings in each week should be occupied in the study of Natural Philosophy, and two evenings in Chemistry; and on one evening in each week a popular lecture on some practical scientific subject should be delivered, the admission to which should be free to the public, with a view not only to impart instruction as widely as possible, but to induce individuals to join the school.

5th. The second division should include instruction in Elementary and Geometrical Drawing, as well as the higher branches of Art; particular attention being given to the drawing and modelling of organic forms, with a view to the attainment of such an accurate knowledge of their structure as shall enable the student to apply them with power and truth to every branch of decorative art or manufacturing industry. Instruction by means of lectures to be given on the fundamental principles of decorative and constructive design.

The Board to provide suitable casts and appliances, to which more attention should be given than to drawing from copy.

To pupils entering in the Geometrical Drawing department, it should be requisite that they have previously passed through a course of instruction in practical Geometry.

6th. The third division should include instruction in classes 6, 7, 11 and 14 of the programme of examination, namely, "Algebra," "Geometry," "Trigonometry," "Mensuration," and "Conic Sections."

7th. The second and third divisions should be under the charge of a separate teacher, or teachers, from the first division; and should each meet for instruction on two evenings per week during the fall and spring sessions of the school, on which evenings only would the services of the teachers in these divisions be required.

8th. Pupils before entering in either the first or third division, should be required to pass a preliminary examination, in rudimentary studies. At the close of the Spring session in each year, pupils should be eligible to stand for examination and certificates at the annual "Final Examination" of the Board.

9th. The first division would require a Laboratory fitted with apparatus for the illustration of Chemistry. The gallery of the Model Room might be made suitable for the purpose. The Model Room, with occasional use of the Library, would afford ample accommodation for general instruction in this division, and for the exercises of the second and third divisions.

10th. The expense of fitting up and furnishing apparatus, is estimated at \$600. The annual expense as follows:—

Teacher of first division—Salary	\$1,000 00
" second and third "	400 00
Annual expense of apparatus and chemicals.		300 00
Fuel, light, &c., &c	150 00
Contingencies	150 00
Total.....		\$2,000 00

11th. That the school be open FREE, or at a mere nominal charge, to all, of both sexes, who may be able to furnish evidence of worthiness to participate in its benefits, and who continue to manifest diligence and punctual attendance, and obedience to the rules.

12th. The Board is satisfied that the school, as here suggested, could be efficiently established and carried on for the foregoing sum of two thousand dollars per annum; and that for the first year the sum of \$600 might be appropriated therefrom, for the necessary apparatus and fitting up; so that, for this small expendi-

ture, the school could be added to the other operations of the Board, and the whole carried on with efficiency and success.

The Committee would also submit, in addition to the foregoing, that a sum of at least \$1,000 per annum increase on the present grant to the Board is necessary, so as to enable it to keep its Free Library of Reference supplied with new technical works, as published; and to secure desirable improvements in the publication of the *Journal* of the Board, by illustrations of new mechanical inventions, &c., &c.

The following is a summary of what has been so far submitted:—

Annual grant required for

First Proposed Scheme.

Annual grant to the Board	\$ 3,000 00
If "School of Art" is also established, add.	2,000 00
Total	\$ 5,000 00
Annual grant to Mechanics' Institutes, say forty, at \$200 each, average	8,000 00
Per annum	\$13,000 00
Or if the "School of Art" should not be at once established, the annual amount required would be	\$11,000 00

Annual grant required for

Second Proposed Scheme.

Annual grant to the Board	\$ 3,000 00
Annual grant to Mechanics' Institutes—average for first four years	1,000 00
Total	\$ 4,000 00
Additional grant to Institutes when full equivalent should be locally subscribed.	4,000 00
Additional grant if "School of Art" is established	2,000 00
Total annual grant for Board of Arts, Art School, and Mechanics' Institutes, after the first four years	\$10,000 00

The Committee would represent, that, in view of the liberal *public* provision made for higher education, specially adapted to the professions; and the liberal support accorded the agricultural interests of the Province—the proposed Legislative aid now suggested to the Hon. the Commissioner of Agriculture bears but a small proportion to what the important interests of Arts and Manufactures might justly claim, at the hands of the Government.

All which is respectfully submitted:

- JOHN BEATTY, M.D., *President.*
- GEO. BUCKLAND, *Prof. Agr.*
- W. H. SHEPPARD.
- H. LANGLEY.
- H. E. CLARKE.
- J. J. WITHROW.

Moved by Mr. McDonnell, seconded by Geo. H. Dartnell; and

Resolved—That the Report of the Sub-Committee just read be adopted.

Moved by Mr. McIlwraith, seconded by Mr. Shier and

Resolved—That the members of the Board of Arts and Manufactures, in Annual Meeting Assembled, having considered clauses 24 and 25 of the Agricultural Bill now before the Ontario Legislature, beg to express their approval of the same, so far as the proposed assistance extends; but would represent to the Hon. the Commissioner of Agriculture, that if the Objects for encouragement by the Legislature were extended to the purchase of books of a mechanical or practical character, as well as to class instruction, the aid proposed to the laudable objects contemplated would be much more beneficial, and only just towards the interests represented by the Institutes.

Moved by Mr Sheppard, seconded by Mr. Withrow, and

Resolved—That the Vice-President, T. McIlwraith Esq., and the mover, be a Committee to wait upon the Hon. Commissioner of Agriculture, to submit the forgoing Resolution, and urge its adoption; and also to propose that the Industrial Arts other than Agriculture should be recognised in the title of the Provincial Association; by amending the title so as to read "Agricultural and Arts Association."

Moved by Mr. Dartnell, succeeded by Mr. Withrow, and

Resolved—That the Secretary be authorised to hand over to Government the property of the Board, first making provision out of the balance in hand and Office Furniture for the rent due to the Toronto Mechanics' Institute, up to June 30th., 1868.

Moved by Mr. Withrow, seconded by Mr. Sheppard, and

Resolved—That W. J. McDonnell, and John Moss, Esqrs., be requested to audit the Treasurer's accounts, before making returns to the Government.

On motion of Mr. Withrow, seconded by Mr. Sheppard, the meeting then adjourned.

W. EDWARDS
Secretary.

TRADE MARKS.

Trade Marks registered in the Office of the Board of Registration and Statistics, Ottawa, and open for inspection at the Library of the Bureau of Agriculture, Toronto.

(Continued from page 293.)

James Robertson, Montreal. Trade Mark: "J. R. with a diamond and the figure of a lion." Recorded in Vol. A., folio 201 (No. 865.) November 29, 1867.

H. Waterman & Bros, London, Ontario. Trade Mark: "Atlantic Petroleum Works, London, Ontario." Recorded in Vol. A., folio 202 (No. 957.) November, 29, 1867.

Savage & Foster, New York, U. S. Trade Mark: "Foster's Book-holder." Recorded in Vol. A., folio 205 (No. 961) January 10, 1868.

- Lyman, Elliot & Co., Toronto. Trade Mark: "Pair of Standard Balances." Recorded in Vol. A., folio 204 (No. 965.) December 3, 1867.
- H. T. Smith, Toronto. Trade Mark: "H. T. S.," arranged as a monogram for Soda Water. Recorded in Vol. A., folio 211 (No. 1012.) February 12, 1868.
- Richard J Devins, Montreal. Trade Mark: "Death with his sickle, and two children with a pet lamb, and the words "Mothers save your children." Recorded in Vol. A. folio 208 (No. 1026.) January 15, 1868.
- W. J. J. Stewart, Montreal. Trade Mark: "Two Lacrosse bats, crossed and tied with a ribbon, and the word "Lacrosse" above. Recorded in Vol. A., folio 206 (No. 31.) January 14, 1868.
- W. J. J. Stewart, Montreal. Trade Mark: Label for Cotton Spool, with the words thereon "Stewart's Palmetto Cotton Thread." Recorded in Vol. A., folio 207 (No. 34.) January 14, 1868.
- Jarvis Fyfe, Montreal Trade Mark "Fyfe's Standard F, Canada." Recorded in Vol. A., folio 210 (No. 42.) January 17, 1868.
- John Henry Barber, Montreal. Trade Mark: "Barber's Indelible Ink," for marking linens, &c. Recorded in Vol. A., folio 209 (No. 52.) January 17, 1868.
- Calvin Pomeroy Reid, Toronto. Trade Mark: "Licensed Victuallers own Cigars." Recorded in Vol. A, folio 212 (No. 188.) March 2nd., 1868.
- Henry Prince, Bothwell. Trade Mark: "Frix perfume the Breath." Recorded in Vol. A, folio 213 (No. 196.) March 2nd. 1868.

RECENT PUBLICATIONS.

British.

- Barlow, Peter. Treatise on the Strength of Materials, with rules for application in Architecture, the Construction of Suspension Bridges, Railways, &c.; and an Appendix on the Power of Locomotive Engines, and the effect of Inclined Planes and Gradients. A new edition revised by his Sons, P. W. and W. H. Barlow, to which are added a Summary of Experiments, by E. Hodgkinson, W. Fairbairn, and D. Kirkaldy; an Essay (with illustrations) on the effect produced by passing weights over elastic ting Girders, &c The whole arranged and edited oars, by Rev. R. Willis, with Formulæ for calculation by W. Humber. With plates. 8vo. pp. xii—296. Lockwood. 18s.
- Baker, B. Long-Span Railway Bridges; comprising Investigations of the comparative theoretical and practical advantages of the various adopted or proposed Type Systems of Construction. With numerous Formulæ and Tables, giving the Weight of Iron or Steel required in Bridges from 300 feet to the limiting Spans. (Reprinted from "Engineering." The whole carefully revised and extended.) Post, 8vo. pp. viii.—84. Spon. 3s. 6d.
- Binns, Wm. Elementary Treatise on Orthographic Projection; being a New Method of Teaching the Science of Mechanical and Engineering Drawing, intended for the Instruction of Engineers, Architects, Builders, Smiths, Masons and Bricklayers, and for the Use of Schools. With illustrations. 5th ed. 8vo. pp. xxxviii—138. Spon. 9s.
- Box, Thos. Practical Hydraulics: a Series of Rules and Tables for the Use of Engineers, &c., &c. Post 8vo. pp. ii—51. Spon. 4s.
- Byrne, Oliver. Essential Elements of Practical Mechanics, based on the Principle of Work; designed

for Engineering Students. Cr. 8vo. xi.—370. Spon. 7s. 6d.

Educator. Cassell's new popular Educator, Revised to the present date, with numerous additions. Embodying a Comprehensive System of Self-Education, within the means and reach of all. In monthly parts, price 7d.

Fairbairn, Wm. Useful Information for Engineers 2nd ser. Containing Experimental Researches on the Collapse of Boiler Flues and the Strength of Materials, and Lectures on Popular Education and various Subjects connected with Mechanical Engineering, Iron Shipbuilding, the Properties of Steam, &c. 2nd ed. Post 8vo. pp. xix—333. Longmans. 10s. 6d.

Twisden, Rev. John F. Elementary Introduction to Practical Mechanics, illustrated by numerous examples; being the Third Edition of "Elementary Examples in Practical Mechanics." Cr. 8vo. pp. xi—320. Longmans. 10s. 6d.

American.

Agassiz. A Journey in Brazil. By Prof. and Mrs. Agassiz. Illustrated. 8vo. pp. xix—540. Boston: Ticknor & Fields. Cl. \$5.

Chapin. The Correlation and Conservation of Gravitation and Heat, and some of the Effects of these Forces on the Solar System. By Ethan S. Chapin. 12mo. pp. 120. Springfield, Mass.: L. J. Powers & Bro. Cl. \$1.

Geldard. Handbook on Cotton Manufacture; or Guide to Machine Building, Spinning and Weaving. For the Use of Millwrights, Managers, Operatives, &c. Illustrated. 12mo. pp. 298. New York: J. Wiley & Son. Cl. \$2 50.

Haswell. Engineers' and Mechanics' Pocket-Book. Containing Weights and Measures; Rules of Arithmetic; Weights of Materials; Specific Gravities; Mensuration of Surfaces and Solids; Mechanics; Aerostatics; Hydraulics and Hydrodynamics; Strength of Materials; Limes, Mortars, Cements, &c.; Wheels; Heat; Water; Steam and the Steam-Engine, &c., &c. Twenty-first Edition, Revised and Enlarged. By C. H. Haswell. 16mo. pp. 663. New York: Harper & Bros. Tuckmor. \$3.

Truran. The Iron Manufacture of Great Britain, Theoretically and Practically Considered; including Descriptive Details of Ores, Fuels and Fluxes, Calcination, the Blast, &c., &c. By W. Truran. Second Edition. Revised by J. A. Phillips and W. H. Dorman. 84 Plates. Large 8vo. pp. xx—306. New York: D. Appleton & Co. Cl. \$10.

Correspondence.

THE PROVISION FOR INDUSTRIAL EDUCATION IN BRITAIN.

SIR.—Knowledge is power only in so far as its possessor can apply it, and that education is the best which most effectually trains to think well, to act rightly and in accordance with the useful information which it is its province to communicate. Thus prepared *the provision for Industrial education is the best which puts the knowledge necessary to ability and efficiency within the reach of the greatest number* Every person as Gibbon says has two educa-

tions, and the most important by far is *not* that which he receives from others, but that which he gives himself; and Davy, equally explicit, declares that the highest culture is not attained at schools or colleges but must be acquired by self-education, and if so, to put the means of that higher self-culture within the reach of all rather than supply them with the teaching of others, ought to be the aim of the social economist and statesman.

In reference to elementary education in Britain, it might be sufficient to say, that according to the last reliable returns the proportion of the population at school is as high (1 in 7) in Britain as in Prussia, where seven years compulsory attendance is the law. (The gross attendance in Canada is 1 in 5.) It would, however, be unwarranted to estimate the education of the two peoples from such a statement. The education of Prussia is as much a part of its military system as the drilling of its soldiery. It trains to parse sentences and draw maps in the same way as to keep the step and make evolutions, the people are in their schooling and their drill; but the mechanism of the system, that self-culture which is essential to excellence is seldom attended to, the means for it are scanty and and as to the training to think well or do right from proper motives—it forms no part of the system at all, and self-reliance, a more important part of education than grammar or geography, is not a very prominent characteristic of a people who have all done for them by government and who may not even move twenty miles from home without the special permission of a government officer. As to Industrial Education. In Scotland every parish has had its school where the humbler peasant's son could be prepared for college, and the colleges so instituted and liberally supplied with Bursaries, that those of more than ordinary intelligence had little difficulty in preparing themselves to take their place among the competitors for fame and fortune in any and every department. Of what continental country can the same be said? In addition to this, each considerably large town had its Mechanics' Institute affording workers by its lectures and library the means of making themselves familiar with the philosophy of their various trades, and otherwise pursuing the higher and best education—self-culture. England less favoured has still such a provision as leaves most without excuse. Its Oxford and Cambridge exhibitions, and their examinations at which upwards of 5000 appear annually for diplomas in Science and Art. Its London University where every one who chooses to study can take his degree; its numerous literary societies, and Mechanics' Institutes. Its Working men's college, its Royal schools of architecture and

engineering, its schools of mines and museums of industry, its 160 schools of science and 92 for art under the control of the Science and Art Department with their 25,000 students and the industrial instruction extended according to the last report to 89,967 scholars in school, the teaching in all having special reference to the industries in which the students are engaged, making up a total which for effectiveness, far distances both France and Germany. But this is not all. Britain's multitudinous publications of themselves are a means of education at once extended and effective and such as can hardly be over estimated.

Its 1294 newspapers and nearly as many literary periodicals penetrating to almost every fireside and discussing every subject, its 150 journals devoted to special industries all make up and exert an educating power such as no other European nation possesses, and with the 5,000 volumes of new books and new editions published annually evidence the knowledge and reading habits of the people; and as compared with Germany both as to quantity and quality support the conclusion above arrived at, as to the superior mental habits and thoughtful activity of the British people. In Germany government doing the practical and governmental thinking for the people they are confined to that *speculative* activity which leads to semi-empty churches, an unhonoured clergy, a despised nobility and general scepticism as to man's duty and Gods providence, and the tree producing such fruit is not one which it is desirable to plant or foster in Britain or Canada.

LONDON has one University, 75 Colleges: of which 17 teach chemistry as applied to the arts, 3 geology and metallurgy, 8 engineering, 1 agriculture, and one specially devoted to working men and the instruction they most desire. It has 25 public schools answering to the colleges royal and gymnasias of the continent, with numerous exhibitions and scholarships to Oxford and Cambridge, a large number of Mechanics' Institutes and literary societies, schools of design offering every facility in acquiring excellence in ornamentation and various training schools for teachers & other employments.

GLASGOW has its University with many Bursaries and its Classes and Laboratories, particularly those of natural philosophy, chemistry and engineering, attended by many artisans as well as those preparing for the learned professions. The Andersonian University with popular lectures embracing almost every subject interesting to workers, with its famous chemical laboratory always at the service of the students at stated hours.

Two model training schools with their lectures and illustrations open to all. Its half dozen Me-

chanics' Institutes and Atheneums, all providing the information and appliances that self education requires. Here, as in London, workers study the philosophy of their respective employments in the colleges and institutes; and in the various workshops on the Thames and the Clyde, learn to apply that philosophy and acquire under men of the very highest standing the various employments,—some of them of European reputation, those arts in which they in their turn are preparing to excel. In this as in other matters, the presence of a great commander, the prestige of a famous name, gives a spirit and energy and an impetus to persevering exertion and noble aims, such as no perfunctory superintendent of a government school can ever inspire.

It is thus Britain supplies better industrial training for her people, than any government provision secure. All over Scotland and England, the youth who would be a successful farmer, having studied chemistry, and one or more other subjects at the university, or while pursuing such studies by attending lectures elsewhere, and private reading, boards with one of the best practical farmers, and takes his share of the farm work for two or three years, and at the end of that time knows the theory and practice of *successful* farming, and is prepared to carry it out on his own account, or as an agent for others. In the Irish model schools, which are exactly the kind of things sighed for by the lauders of continental modes, men with the same object in view attend two or three years in these Institutes, learning both theory and practice, and at the end of that time are prepared to carry on, *not successful* farming but such farming as is practised at these establishments where the proceeds of the year never covers the labour expenses, giving the land rent free and the supervision for nothing! Those two results aptly illustrate the effectiveness of the British provision for industrial education, over any and every plan of government schools for practical training. Now the provision for this industrial education in London and Glasgow, may not unfairly be taken to represent the provision in the whole of Britain, and from theory and personal knowledge, I can safely affirm that, the workers in and around both, are literally without excuse for ignorance or the want of that culture which develops ability, and I shall wait with some curiosity to see how the asserter of continental superiority, will make out either in France or Germany, a provision so effective in stimulating to exertion, and in bringing the means of the highest culture within reach of the whole people. If any one of them can even show that the people generally in any continental state have equal facilities with the people

of Britain, so far as that less effective education which Institutes supply is concerned, I will be not a little surprised; as I do not believe that the institutions of which we hear so much in their general influence in the elevation of the people have any existence, save in three or four cities, and even there their fees if nothing else, must shut their doors against 99 out of every 100 workers, whereas in Britain the fees are generally so low, as to be within the reach of the most limited means.

While the bursaries, scholarships, and exhibitions are so numerous, that most of those without means, but gifted with more than an ordinary amount of brains, find little difficulty in attaining the highest culture, and pushing their way to the highest position for which their abilities may specially fit them in the workshop, the pulpit, at the bar, or in the senate; and the men who will not be thus enticed and tempted to self culture, can not be expected to sacrifice the time and money continental methods require to attain it. It is an old story, that "when a town is in danger there is nothing like leather," but it is necessary in establishing the existence of the lauded provision for industrial education on the continent, and its capacity for reaching to and elevating the people generally, that we should have something more reliant than a drawing masters estimate of the drawing schools in Wertenburg, or Paris, or the predictions and testimonies of Kensingtonians as to the superlative merits, virtues, and advantages of the leather of the science and art department, and something less chamaleonic than Mundella's workers, whom he represented before the government commission, as in a condition of "fearful ignorance, most humiliating, disheartening, and appalling" while in his recent lecture at Sheffield, he maintained that these self workers, exhibited such intelligence and good sense, as to secure the perfect confidence of the manufacturers; and on several critical occasions when large information and correct reasoning were specially required, Mr. Mundella found in these men of appalling ignorance, "as much wisdom tact and self denial as the best among the manufacturers themselves were able to show." What is the continental provision for industrial education, and what the facilities and inducements held out to the people generally to accept and embrace it?

S. R.

THE American dollar weighs 412½ grains; of these 41½ grains are copper. The copper is one ninth of the silver.

ADDING to the width of a belt and of the faces of the pulleys, increases immensely its power of conveying force. A wide belt is always better than a narrow one strained to its utmost capacity.

Selected Articles.

UNIVERSITY EDUCATION.

GREAT SPEECH ON EDUCATION BY MR. ROBERT LOWE, M. P.—WHAT IS REQUIRED OF OUR EDUCATIONAL INSTITUTIONS—HOW THE MIND OF YOUTH OUGHT TO BE DIRECTED.

(From the *London Times*, Nov. 4.)

On Friday evening, Mr. Lowe, M. P., opened the Lecture Session of the Edinburgh Philosophical Institution by an address on primary education in its relation to the State, and on University education. Mr. Lowe was accompanied to the platform by Mrs. Lowe and a large party of ladies, the Lord Provost, the Lord Advocate, the Earl of Airlie, Lord Dunfermline, Lord Ardmillan, Lord Ormidale, Sir W. Stirling Maxwell, M. P., Sir James Y. Simpson, Sir Jas. Lacatta, Professors Masson, Lyon Playfair, Sellar, Allman, Balfour, and Blackie; Mr. D. McLaren, M. P., Mr. Adam Black, Rev. Dr. Hanna, Dr. Collier, Dr. Donaldson, Dr. A. K. Johnstone, Mr. J. Campbell Smith, Mr. W. Smith, Vice-President, &c.

Mr. Lowe, in the first part of his address, treated of primary education. He said that as regarded the elementary education of the humbler classes there were certain principles which were now pretty well established and agreed upon—namely: firstly, that the education of the poor ought not to be left wholly to private enterprise, but ought to be undertaken by the State; secondly, that the State represented in education, not the religious, but the secular element; thirdly that the best way of carrying on education was not by a centralized system, but by the calling forth of local energy; fourthly, that the work should be tested and superintended by Government, and not by those who carry on the work; and fifthly, that State aid ought to be given to schools, not merely for being in existence or showing a certain attendance on their books, but for a certain amount of efficiency—that, in short, it was the business of the State to ascertain the results, and to pay in proportion to them. Coming to disputable propositions, the hon. gentleman maintained that the education of the youth was the duty, and, as Plato said the primary object of the State. I am sorry, said Mr. Lowe, that the existing system in England is that the Government shall admit its duty, but that it does not occupy the position enabling it to do its duty. The initiative is not with the Government. We have no Minister of education. The initiative is given to private individuals. The Government cannot create a school where it is wanted; all they can do is to assist it. The consequence is that as money is generally forthcoming in those places where education is most abundant, the Government gives assistance where it is least wanted. Mr. Lowe proceeded to point out the superiority of the English to the American system, where examination, as practiced under the revised code in England, is totally unknown. Another recommendation of the present system was homogenous with the feelings and habits of the people, especially in the country districts, and always secured the best local agency, namely the clergymen and gentlemen

of the parish. But, said the right hon. gentleman, we have now arrived at a time when we ought no longer to deliberate on this question. I will not go into political matters; but we are all of us aware that the Government of the country—the voice potential is the Government—is now placed in the hands of persons in a lower position of life than has hitherto been the case. Now, it is not merely desirable, it is all important and essential, for the preservation of the institutions of this country, that those persons should be able, properly and intelligently, to discharge the duties entrusted to them. (*Cheers.*) Even assuming that those persons who have been enfranchised possess that knowledge which is necessary. I say we require a much better guarantee than we at present possess, that those persons who come after them shall possess that knowledge also—(*hear!*)—and if they do not possess it, as I fear will be the fact in very many cases, there is nothing we ought not to do—there is no effort we ought not make—there is no sacrifice, either of money, or of prejudice and feeling, which we ought not to submit to, rather than allow a generation in whose hands are placed the destinies of us all to grow up in ignorance. (*Cheers.*) We cannot suffer any large number of our citizens, now that they have obtained the right to influence the destinies of the country, to remain uneducated. (*Cheers.*) We must not merely permit, as my friend Mr. Bruce lately proposed, persons to tax themselves for education. We must compel and insist by some means that education shall become general in this country. We must carry out the great scheme of the reformers of Scotland when they placed a school in every parish in the country. (*Cheers.*) Coming to the second branch of the subject the right hon. gentleman said: It seems to me if one could form an abstract idea of what education ought to be, it should be to teach a person everything that it is important he should know, and at the same time to discipline his mind, but, as the period during which education can be communicated is very short, we must qualify that view by saying that business of education is to teach the person so much of that which is important that he should know as he can be taught within a limited time, and with reference to the ordinary faculties of mankind; and also that in so doing care should be taken to discipline the mind of the pupil as far as possible. That being so, we see a question arise of very great difficulty—What is it most important the people should know? Until we can answer that question we cannot satisfactorily solve the question I am now proposing—What is the education that ought to be given to the middle and upper classes? I think it will be admitted by all who hear me that we live in a universe of things and not of words, and that the knowledge of things is more important than the knowledge of words. (*Cheers.*) The first few months and years of a child's existence are employed in learning both, but a great deal more in making itself acquainted with the world into which it has been ushered than with language. That is the form Nature takes. She begins with the knowledge of things, and words follow after. I'll illustrate what I mean. I think it is more important for a man to know where his liver is seated, and what its functions are, than to know it is called *jecur* in Latin and *eiper* in

Greek. (*Laughter*) But I go a little further. I think where there is a question between the true and the false, it is more important that one should know what is true than what is false. (*Cheers.*) I'll illustrate again. I think it more important to know the history of England, than to know the mythology of Greece and Rome. (*Loud cheers.*) I think it more important that we should know those transactions out of which the present state of our political and social relations have arisen, than that we should know the lives and loves of all the gods and goddesses that are contained in the Iliad—(*laughter and cheers*)—and yet, gentlemen, according to my experience—I hope things are better managed now—we learnt a great deal more of the Pagan than of the Christian religion when I was at school. (*Great laughter and cheers.*) While the one was put off till the Sunday, and transacted in a very short time—(*laughter*)—the other was every-day work; and the manner in which it was followed out was by no means agreeable, for the slightest slip in the progeny of Jupiter or Mars, or anybody else, was followed by a degree of personal castigation—(*roars of laughter*)—which I never remembered bestowed on any one for a slip of divinity. (*Renewed laughter.*) Then, again, I venture to think that, as we cannot teach the people everything, it is more important we should teach them practical things than speculative things. (*Cheers.*) For instance, I think it more important that a man should be able to work out a sum in arithmetic than that he should be acquainted with the abstract conditions of argument in general, as detailed in Aristotle's logic—(*renewed cheers*)—that modes, figures, and syllogisms are not so important as the rule of three, or practice, or keeping accounts; and, therefore, if we must choose, I confess I should lean to the practical side. One more rule I venture to lay down—they make four altogether—that, as we must choose in these matters, the present is of more importance to us than the past.—(*Cheers.*) The institution of communities, kingdoms and countries that have existed 2000 years ago. (*Cheers.*) The right hon. gentlemen then took up the question of classics. He said—Language is a vehicle of thought; and where the thought and the knowledge are there it is most admirable as a means of communicating it, but it is not the substitute or equivalent for it. It does not do instead of it. It presupposes the knowledge of the thing, and it is only useful where that knowledge is obtained for the purpose of communicating it. I will venture to read a few lines, in which this is put with so much force that I should only weaken it by putting it in my own language. The quotation is from Pope, and was written 140 or 150 years ago, and it only shows how mistakes may be pointed out in the most vigorous language and in the most conclusive reasoning, and yet may remain utterly undressed and uncared for:

"Since man from beast by words is known,
Words are man's province—words we teach alone;
When reason doubtful, like the Samian letter,
Points him two ways, the narrower is the better;
Placed at the door of learning, youth to guide,
We never suffer it to stand too wide.
To ask, to guess, to know, as they commence,
A fancy opens quick the springs of sense,
We ply the memory, we load the brain,
Bind rebel wit, and double chain on chain,
Confine the thought, to exercise the breath,
And keep them in the pale of words till death."

Well, then; I think it is quite evident that it is a poor and imperfect conception that should limit it to the learning of any languages, whatsoever; but surely, if we are to begin and make language a part of education, it should be the language we are most concerned with; and I must be permitted to say that, in the science of ponderation I propose to establish, I think the English language has prior claims to Latin and Greek. (*Applause.*) I do not disparage Latin or Greek. Far from it; but I speak of what is most important to be taken first; and I think it is most melancholy to see the ignorance of the literature of our own language in which the great masses of our young men are brought up. But allowing that we are to teach Latin and Greek, only see how we set about it. It is no joke to learn Latin or Greek: but it is a joke compared with learning Greek and Latin grammar. Language is one thing, and grammar another; and I agree with the German wit, Helne, who said: "How fortunate the Romans were that they had not to learn Latin grammar, because if they had done so they never would have had time to conquer the world." (*Laughter and cheers.*) Montaigne, 300 years ago, saw this, and exposed it in most forcible terms. He pointed out how easy it was to learn Latin with very little grammar, to learn it colloquially; and he tells how without the lash and without a tear, he became able to speak, and in a short time as good and as pure Latin as the schoolmaster. But that is not what would answer the purpose. It is said, you should discipline the mind; and the boy is put through the torture of elaborate grammars which he is forced to learn by heart, but every word and syllable of which he forgets before he is twenty years of age. Their is no doubt that Greek is a language of wonderful felicity of expression; but what could be more beautiful, what more refined, what more calculated to exercise the taste and all the faculties of a person than the study of French prose, carried by M. Prevost Paradol, Saint Beuve, or the great masters of that language. We have nothing like it in English—nothing approaching that exquisite finish and polish; and if a man wishes to exercise his mind in these things, he could not have a better subject to exercise it upon than French prose. Only, the advantage of knowing French would be that when he goes to Paris, he would be able to order his dinner at the cafe, and to squabble over his bill without making himself a laughing stock to every one present. But all this must be put aside, and the youth must be put through the Greek languages, the very character of which he is almost sure to forget before he is thirty years of age. There is nothing more absurd than the attempt to untie things that have never been tied. If language had been constructed on general principles, if it was made this way, that a number of wise men met together had laid down a quantity of rules, such for instance, as that the verb should always agree with its nominative, and that the verb should govern the accusative, and so on, and then the whole thing had been made like Euclid, according to these rules, and moulded in that way, what had been tied we could untie—the language having been put together in that way we could analyze it back into the rules. But language was not made in that way. Language grew, we know not how,

like a tree or plant. It was not made on general rules. Therefore, when you are trying to resolve that into general rules which was never formed on general rules; you are sowing the sand; and the result is that after the earlier years of one's life have been made miserable by being crammed by these rules, you find that the exceptions are almost as numerous as the rules, and you never know which is the rule and which the exception. Well, then, gentlemen, there is another thing I enter my protest against, and that is Latin verses. (*Applause.*) I do not think the history of poets is so prosperous that the aim and object of mankind should be to try to make as many young people as possible poets or poetasters. Probably the worst talent of all the little talents a man can have in society is that of scribbling verses—(*laughter*)—and yet years of our lives are taken up in the attempt to teach us to learn Latin verses, which, after all, are generally a *cento* of expressions stolen from different authors, the very meaning of which the borrower very often does not himself understand. (*Laughter.*) Their is another thing to my mind, almost as absurd, and it is the way we learn a language. I consider that a man understands a language when he can read with fluency and ease, a good, plain, straightforward author, who writes grammatically and sensible. That is very soon done, in Latin and Greek, if that is all that is wanted. But that is not half enough; there is no torture in that; that is very simple (*Laughter.*) What you must do is—you must take a place that is hopelessly crabbed, where the amanuensis has gone to sleep, or been tipsy, or has mistaken the meaning of the text, or something or other; and then you must read, perhaps, two or three pages of notes of wise men who have ever read this passage written in very bad Latin, each stating his idea of how it ought to be re-formed, and then you must give your own opinion on it. Why, I venture to say if Æschylus were to come to life again, he would be easily plucked on his own verses by an Oxford examiner. (*Loud laughter and cheers*) And as for Homer, I am quite certain he did not know the difference between the nominative and accusative cases, and had never heard of it. (*Laughter.*) Well, gentlemen, I proceed to another thing which has always struck me very forcibly, and that is, the immense time given to ancient history—do not misunderstand me—ancient history is a very important matter, a most beautiful study, but it is not so important as modern history and does not bear nearly so much on our transactions. Consider what it is—ancient history has but two phases, the one is a monarchy, the other is a municipality. The notion of a large community existing by virtue of the principal of representation—of a popular government extended beyond the limits of a single town—is a thing that never entered into the minds of the ancients. So that the best years of our lives are spent in studying a history in which that which makes the difference between modern history and ancient—the leading characteristic of our society, the principle of representation—which has made it possible in some degree to reconcile the existence of a large country with the existence of a certain amount of freedom, was utterly unknown; and yet it is these histories—which want the very essential of modern history—that the best

years of our lives are devoted. If a man has a competent knowledge of modern and mediæval history it is most valuable, undoubtedly, that he should have a knowledge of the history of those ancient communities, so as to compare the one with the other; but if he has not a knowledge of modern history, what avails the other? He has not the means of comparison, and the study becomes fruitless and useless. Then, gentlemen, there is another great fault in this exclusive direction of the minds of youth to antiquity, and that is that the ancient conception of knowledge wants entirely that which is our leading conception in the present day. Well, gentlemen, I do not think you will find anywhere in the study of antiquity that which is now in everybody's mouth—the idea of progress. The notion of the ancients was that knowledge was a sort of permanent fixed quantity; that it could not well be increased, though it was to be sought for. This conception of progress, of a change and development that never ceases, although we may not be able to mark it day by day, is entirely wanting, as far as I am aware, in the antique world; and I think it is not too much to ask that that idea should, among others, be imparted to youth before they give so very much time to the study of a state of society in which it is wholly wanting. We are dosed with the antiquity of the ancients. We are expected to know how many archons there were at Athens, though we probably do not know how many Lords of the Treasury there are in London. (*Laughter.*) The pupil must know all about their courts, though he hardly know the names of his own. He must be dosed with the laws and institutions of the ancients, things exceedingly repulsive to the youthful mind, and things only valuable for comparison with our own institutions, of which institutions he is kept in profound ignorance. (*Cheers.*)

Another thing not a little irritating is ancient geography. A large portion of time is spent in studying the divisions of countries that have long since ceased to exist, or to have a practical bearing on the affairs of the world. There is nothing which is more neglected than geography. I have been as you are aware, in Australia; but it is very rare that I have found any one able to tell me what the colonies of Australia are, unless they have been there, or have some relations there. The island of Java is said to have been given up by Lord Castlereagh, at the Congress of Vienna, to the Dutch, because he could not find it on the map, and was ashamed to confess his ignorance. (*Great laughter.*) I remember hearing a very eminent member of the House of Commons—I will not venture to mention his name—who made a speech in which it was quite manifest to me that he thought Upper Canada was the province nearest the mouth of the St. Lawrence, and that Lower Canada was the province higher up the river. (*A laugh.*) Well, gentlemen, we are going to make an expedition to Abyssinia. The whole thing turns upon the nature of the country. What do we know about it? There is a great deal to be known about it. Many persons have visited it, and written upon it; but what are we taught about it? It is as much as a man can do to find where Abyssinia is on the map, let alone the finding out of a single town in it. Yet it is surely as

important to know the place where our operations will soon be directed as it is known that Halicarnassus was the capital of Caria, or that there were 23 cities of the Volscians in the Campagna of Rome. I will give you one more instance, and it is from the Bible, in regard to which you might have supposed better things. (*A laugh.*) You are all aware that in the last session of Parliament Mr. Bright very facetiously denominated certain gentlemen by a name derived from a cave. (*Laughter and cheers.*) Well, I assure you gentlemen, there is not one person I met in twenty—and I speak of people of education—who knew anything about the Cave of Adullam—(*loud laughter and cheers*)—and I was under the melancholy and mournful necessity of explaining to them what it meant, and thus pointing the arrow that was aimed at my own breast. (*Great laughter and cheers.*) Now the danger of this kind of study is, that our attention being fixed so much on the words, we take everything that is in these books for granted. (Mr. Lowe then gave a negative catalogue of what an educated Englishman might be in total ignorance of.) He will probably know nothing whatever of the anatomy of his own body; he will not have the slightest idea of the difference between his veins and his arteries, or whether the spleen is on the right side or the left. He will have no education in the simplest truths of physics; he will not be able to explain the barometer or the thermometer; he will know nothing of the simplest laws of animal or vegetable life; he may know nothing whatever of arithmetic; and that defect sticks to him all through life. He writes an execrable hand; for, perhaps, the most important accomplishment a man can have is totally neglected. I know a most eminent man, who took a first-class honour at Oxford, and one of the things by which he got it was an English essay, in which there were forty-six words misspelt. (*Laughter.*) He may know nothing whatever of modern geography; or that of his own country; he need not know anything whatever of the history of England. (*Laughter and cheers.*) I knew an instance not long ago of a gentleman who obtained high honors at a University, and became a contributor to a periodical, and who, when it was suggested to him by the gentleman that managed it, that he should illustrate some fact by reference to Lord Melbourne's Ministry, said he had never heard of Lord Melbourne's Ministry. (*Loud laughter and applause.*) He need know nothing whatever of modern history, or how the present polity of Europe came into effect; he need know nothing of mediæval history, and that has become a matter of most serious importance, because, as we all know, one of the greatest schisms that have arisen in the Church of England has come from people forming most exaggerated and absurd ideas of the delightful perfection of everything in that dreadful period, the middle of the dark ages. (*Laughter.*) They have done so through sheer ignorance of that which they ought to know, and they have actually become persuaded that the best thing modern society, with all its appliances and improvements, could do, would be to return as fast as possible to the state of things that existed when the first crusade was undertaken. (*Great laughter.*) There is another most melancholy thing, and that

is the utter ignorance of the antiquities and laws of England. The educated Englishman knows the antiquities and laws of Greece and Rome, but of our English antiquities and laws, which are so bound up with our freedom and our everyday business, he knows nothing whatever. We have, I may say boldly, a literature unparalleled in the world. (*Cheers.*) But which of our great classical authors is a young man required to read in order to obtain the highest honours which our educational institutions can give him? He studies in the most minute manner the literature of Greece and Rome; but as for Chaucer, Spenser, or any of our earlier classics, or the great dramatists and writers of the reigns of Elizabeth and Charles, it never occurs to him to read them; and the consequence is that the language is impoverished. The noble English of our forefathers drops out of use, and the minds of our young men are employed in stringing together a few words out of the Latin poets into execrable hexameters. (*Laughter.*) Then, as to modern languages, there is some feeble attempt being made to teach them now, but nothing effectual; and surely if the English language is to have a preference over modern languages, modern languages ought to have a preference over the ancient. I have been abroad with a party of half-a-dozen first class Oxford men, none of whom could speak a word of French or German to order anything we wanted; and if the waiter had not been better educated than what we were (*loud laughter*) and known some other language than his own, we might have all starved. (*Laughter.*) I think then, you will agree with me that, as Dr. Johnson said of the provisions in the Highland inn, "The negative catalogue is very copious." (*Laughter.*) I therefore sum up what I have to say on this point by this remark, that our education does not communicate to us the means of obtaining knowledge, and that it does not communicate the means of communicating knowledge. I have spoken only just now of modern history and modern languages, but what are these compared with the boundless field that nature opens before us, the new world that chemistry is expanding before us, that old world that geology has called into existence, the wonderful generalization in regard to plants and animals, and to all those noble studies and speculations which are the glory and the distinction, and the life-blood of the times in which we live, and of which our youth remain, almost without exception, in total ignorance? It is not too much to say that at present the man who is really well educated has generally begun his education after it was supposed to have closed—after all had been done for him that the present miserably contracted and poor system could do. He has to begin to educate himself over again, with the feeling that he has wasted the best and most precious years of his life in things either useless and unprofitable, not unlovely in themselves, but which wore the mere by-paths—the fringes and appendages of the solid acquirements that constitute the mental stock of a gentleman—a well educated man. (*Cheers.*) Well, the study of the dead languages and pure mathematics are noble and valuable studies, and if that was all I should not object; but you know that you cannot give a premium to one study without in some

degree discouraging another. And although their first effect is to give a premium in those studies, their collateral and far more important effect is to discourage, I would say destroy, all the other studies I have enumerated, and which appear to me so infinitely well worthy of the first place in education. A man who has been at school—however ill he has been used; however little he has been taught; however much he has been flogged—(laughter) always goes away with an affection for it. He forgets his cares and troubles. It was a time of life when everything appeared very pleasant; and as these things have to be undergone again not by himself, but by his son, he always retains a kindly feeling for the place of his early education. (Laughter.) If we could only succeed in getting fair play, and no favour, for all the different branches of instruction, I have no doubt the thing would remedy itself. Don't misunderstand me. I do not think it is any part of the duty of the State to prescribe what the people shall learn, except in the case of the poor, where the time is so limited that we must fix upon very elementary modes of instruction. I think it is the duty of the parent to fix that; but the State should be impartial and not by the application of the endowments force education into certain channels, and leave the others dry. (Cheers.) Ladies and gentlemen, there is but one more observation I wish to make. I have said I am most anxious to educate the poorer classes of this country, in order to qualify them for the power that has passed, and perhaps will pass in a still greater degree, into their hands. I am also anxious to educate in a manner very different from the present, the higher classes of this country, and that also for a political reason. The time has gone past finally when the higher classes can hope by any indirect influence, either of property or coercion of any kind, to direct the course of public affairs. Power has passed out of their hands, and what they do must be done by the influence of superior education and superior cultivation—by the influence of mind over mind, that “sign or signet of the Almighty to command,” which never fails of being recognized where it is truly tested. (Applause.) Well, then, how is this likely to be done? Is it by confining the attention of the youth of our wealthier classes to those old languages and those bygone republics of which working men never heard, which they are never brought in contact with in all their affairs, and of which, from the necessity of the case, they know nothing? Is it not better they should know the things that working men know—only know them infinitely better; know them in their principle, in their details, so that they may be able in their intercourse and commerce with working men to assert the superiority over them which greater intelligence and a greater leisure is sure to give, and to conquer back, by means of a wider and more enlightened cultivation, some of the influence they have lost by political changes. (Applause.) I confess for myself that whenever I have met with an intelligent workman, I am always so far from being able to assert any such superiority that I am tormented with the conception what a fool the man must think me (laughter) when he finds me, on whose education thousands of pounds have been spent, utterly ignorant of matters which are of

everyday experience to him, and which every educated man should know. (Cheers.) I think this might be amended. I think the lower classes should be educated to discharge the duties that are cast upon them; they ought, also, be educated in order that they may appreciate and desire a higher cultivation when they meet with it. I think that the upper classes ought to be educated after a very different manner, in order that they may exhibit before the eyes of the lower classes the higher cultivation to which if it were shown them, I believe the latter would be always ready to bow down. Gentlemen, I thank you for the patience with which you have listened to me. (The right honorable gentleman resumed his seat amid loud and prolonged cheering.)

A NATURAL MECHANIC.

Looking over some old papers a few days ago, we met with the following notice of a relative of ours, cut from the *Norfolk News*, England, which we think worthy of re-production in the pages of the Journal:—

Johnson Jex, the learned blacksmith of Letheringsett, was the son of William Jex, a blacksmith, and was born at Billingham, in the county of Norfolk, in or about the year 1778. In his boyhood he was sent to a day school, but he has often been heard to say that although he was sent off to school for years, he never went three months in his life. He frequently walked to Foulsham instead, to look in at the window of Mr. Mayes, a watchmaker, who resided there. He did not learn to read or write at school, but taught himself afterwards. His mechanical talent manifested itself at a very early age. With regard to Jex's first experiment in clock-work, the following anecdote is related. When about twelve or thirteen years of age, a watchmaker went to his mother's house to clean her clock. Jex watched him while he took it in pieces, cleaned the works, and put them together again. No sooner had he left than he determined to try whether he could not do the same. He at once went to work, and completed his task with all the skill and exactitude of an experienced hand. (He did not mention this occurrence till several years afterwards.) From that time he began to turn his attention to watch and clock making, and eventually attained great excellence in the art. When about thirteen years old he became acquainted with Mr. Mayes, of whom mention has already been made. Mr. Mayes' attention was first attracted towards Jex by frequently observing him look in at his window. He at length asked him what he wanted. Jex replied, he “wished to see *that thing*”—pointing to a newly invented instrument for either clock or watch making. Mr. Mayes showed it to him, but did not allow him to touch it. Jex declared he “could make one like it,” and he accordingly did so in about a month. Mr. Mayes was delighted with the talent and ingenuity displayed by the boy, and from that time took great pleasure in showing him anything connected with his business. At his death he left Jex a legacy of 50*l.*, as a proof of the high esteem he entertained for him. In early life Jex was by no means robust in health, and he afterwards declared

his belief that working at the bout-hammer, at the blacksmith's anvil, had been the means of strengthening his constitution and saving his life. Some particulars of Jex's early history are given in Young's "General View of the Agriculture of the County of Norfolk." We subjoin the following extract, written about the year 1802. "Under the head implements, I must not conclude without mentioning a person of most extraordinary mechanical talents. Mr. Jex, a young blacksmith at Billingford, at sixteen years of age, having heard that there was such a machine as a way-measurer, he reflected by what machinery the result could be produced, and set to work to contrive one; and the whole was his own invention. It was done as might be expected, in a roundabout way, a motion too accelerated, corrected by additional wheels but throughout the complicity such accurate calculations were the basis of his work, that when finished and tried it was perfectly correct without alteration. His inventive talents are unquestionable. He has made a machine for cutting watch pinions, a deepening tool, a machine for cutting and finishing watch-wheel teeth, of his own invention, a clock-barrel and fusee engine made without ever seeing anything of the kind. He made a clock, the teeth of the wheels cut with a hack saw, and the balance with a half round file. He has made an electric machine and a powerful horse-shoe magnet. Upon being shown by Mr. Munnings a common barrow-drill, the delivery by a notched cylinder, he invented and wrought an absolutely new delivery; a brass cylinder, with holes having moveable plugs governed by springs which clears the holes or cups, throwing out the seed of any size with great accuracy; and, not liking the application of the springs on the outside of the cylinder, reversed the whole, and in a second, now making, placed them most ingeniously within it." Shortly after Young's notice of him was written, Jex removed to Letheringsett, near Holt, where he worked as a common blacksmith till within the last thirty years. Since that time he has employed workmen in the practical part of his business, but he continued till his decease to live in the house adjoining the blacksmith's shop. The first watch ever constructed by Jex was made after he had settled at Letheringsett, for his friend the Rev. T. Mungs, of Gorget, near Dereham. *Every part of this watch, including the silver face, and every tool employed in its construction, were of Jex's own making.* One of the greatest efforts of Jex's inventive powers was the construction of a gold chronometer, with what is technically termed a "*detached escapement*" and compensating balance, which was made long before he ever saw or heard of the "*detached escapement*"—the principle of which has since been so successfully applied by Arnold and Earnshaw. Jex turned the jewels himself, made the cases, the chain, the mainspring, and indeed every part of the watch, except the dial. The, very instruments with which he executed this wonderful piece of mechanism were of his own workmanship. It is only by watchmakers themselves that this triumph of skill can be adequately appreciated. *They* know that no single man is ever employed to make a complete chronometer, but that different parts of the mechanism are entrusted to different hands, and that many are employed upon a single watch. This watch is now in the possession of

Mr. Blakely, of Norwich. Such was Jex's thirst for information and such was his resolution to clear away every obstacle which impeded his progress, that, wishing to read some French works on Horology, he mastered, *unassisted*, the French language, when about sixty years of age! He then read the books in question, but found that they contained nothing which was new to him, he having become thoroughly acquainted with the subject by previous study of English authors. Another of Jex's inventions was a lathe of extraordinary power and ingenuity, which remained in his possession until his death. By means of this lathe, he was enabled to cut the teeth of wheels mathematically correct into any number even or odd, up to 2,000, by means of a dividing plate. He also constructed a lathe on a minute scale for turning diamonds; which is very complicated in its structure. He likewise invented an airtight furnace door for his own greenhouse, so constructed that the fire would keep lighted from Saturday night till Monday morning, thus obviating the necessity of attending to it on Sunday. About ten years ago he invented a method of opening greenhouse windows to any required width, and so fastened that the wind has no power over them. Jex was also an iron and brass founder, a glass-blower, a maker of mathematical instruments, barometers, thermometers, gun barrels, air guns, &c. Jex understood electricity, galvanism, electro-magnetism, &c., and had a thorough knowledge of chemistry as far as the metals are concerned. Amongst other scenes, Jex understood astronomy, and could calculate the time by the fixed stars. In taking astronomical observations, he was accustomed to make use of his own door-posts and a chimney opposite. He made telescopes and *metallic reflectors*, which are universally acknowledged to be extremely difficult of construction. He was naturally a timid man, and his disposition was shy and retiring; but whenever he met with anyone whose tastes were similar to his own, he would converse for hours with the greatest delight on any subject connected with the arts and sciences. He was a man of the strictest integrity, and of unimpeachable veracity. He was *entirely* destitute of the love of money, and sought out truth *for its own sake*, and with no view to any personal gain. Such an example is rare indeed in this grasping and selfish age. He was kind in his manner to the poor, and rarely sent a mendicant away without relief. In 1845, Jex had a stroke of paralysis, from the effects of which he never entirely recovered. His intellect gradually lost much of its original power, and the last year or two especially a very marked alteration was perceptible. He was again attacked with paralysis in November last—and his death took place the 5th of January. His remains are interred in Letheringsett churchyard.—*Norfolk News.*

An editor in Alabama having read an article in Hall's Journal of Health, advising that husband and wife should sleep in separate rooms, says: "Dr. Hall can sleep when and where he chooses, but for himself, he intends to sleep where he can defend his wife against the rats and all other nocturnal foes as long as he has got one to defend."

Statistical Information.

Municipal Returns for 1866.

(From Miscellaneous Statistics of Canada.)

Statement of the Assessed Value of Real Estate and Personal Property, and the Expenditure for Educational purposes in the Cities and Towns of Ontario, for the year 1866.

CITIES.	Assessed value of Real Estate.	Assessed value of Personal Property.	Expenditure for Educational purposes.
Hamilton	\$ 7,833,100	\$ 3,189,533	\$25,922
Kingston	4,055,050	910,100	10,055
London	4,593,400	1,162,600	11,886
Ottawa	3,543,716	569,616	9,071
Toronto.....	18,776,616	4,521,433	23,004
Total	\$38,301,892	\$10,353,232	\$79,938
Towns (separated from Counties.)			
Belleville	\$ 2,261,816	\$ 213,250	\$ 5,774
Brockville....	1,079,966	64,700	3,735
Cobourg.....	1,275,883	40,600	3,957
Port Hope....	1,069,290	53,800	6,201
Peterborough.	975,569	217,805	2,442
St. Thomas ...	859,712	33,700	995
St. Mary's....	801,052	50,000	2,800
Total ...	\$ 7,823,286	\$ 685,531	\$25,904
Towns (not separated.)			
Amberstburg.	\$ 268,650	\$ 29,033	\$ 1,500
Barrie	259,758	11,100	2,001
Berlin	299,260	37,680	2,250
Bowmanville..	702,771	105,000	1,800
Brantford	125,489	19,722	5,911
Chatham	1,081,250	720,252	2,775
Clifton	419,783	52,800	900
Collingwood..	251,566	4,800	1,377
Cornwall	431,833	416,884	1,366
Dundas	798,383	111,600	1,115
Galt	578,480	110,160	4,307
Goderich	716,870	28,800	4,301
Guelfh	1,659,783	279,166	6,889
Lindsay.....	664,499	44,200	1,574
Milton	220,283	14,600	1,726
Niagara	242,630	40,056	1,184
Onkville.....	406,450	13,800	1,290
Oshawa.....	510,166	74,433	2,187
Owen Sound..	653,500	121,000	3,157
Paris	43,351	5,370	2,205
Perth	630,300	12,646	2,800
Pictou.....	532,550	42,533	900
Prescott.....	637,100	37,600	1,300
Sandwich	195,033	143,333	1,100
Sarnia	606,288	137,033
Simcoe	359,950	65,233	3,000
Stratford	392,155	29,900	2,276
St. Catharines	2,883,133	467,950	3,583
Whitby	237,480	32,100	3,402
Windsor	969,000	74,100	3,500
Woodstock ...	714,528	61,083	2,000
Total	\$17,992,272	\$ 2,853,967	\$75,676
Real Estate and Personal Property....	\$20,846,239		

Area, Population, and Acres disposed of in Upper and Lower Canada, to Dec. 31, 1866.

	Area in square Miles.*	Acres surveyed to Dec. 31st.	Acres disposed of by sale and free grant, to Dec. 31.	Estimate population, Dec. 31.f
Upper Canada.	1864 121,260	24,629,714	21,026,204	1,656,002
	1865 " "	24,756,159	21,433,342	1,722,302
	1866 " "	25,031,538	21,746,655	1,805,037
Lower Canada.	1864 210,920	25,197,267	18,897,260	1,226,840
	1865 " "	25,565,678	19,039,355	1,257,480
	1866 " "	25,871,502	19,234,734	1,238,334

Miscellaneous.

The Introduction of Coal into England.

When this fuel was first introduced into England, the prejudice against it was so strong that the Commons petitioned the Crown to prohibit the "noxious" fuel. A royal proclamation having failed to abate the growing nuisance, a commission was issued to ascertain who burned coal within the city and its neighborhood, and to punish them by fine for the first offence, and by demolition of their furnaces if they persisted in transgression. A law was at length passed making it a capital offence to burn coal in the city of London, and only permitting it to be used in the forges in the vicinity. Among the records in the Tower, Mr. Astle found a document importing that in the time of Edward I, a man had been tried, convicted and executed for the crime of burning coal in London. It took three centuries to entirely efface the prejudice.

A Curious Commercial Custom.

On the 10th of March, 1852, a singular old custom was revived in Hamburg. When the Exchange was thronged at high noon, two of the city drummers appeared in uniform before the entrance and beat a roll ten minutes long. Then over the great door of the Exchange they suspended a black tablet inscribed with the name of a bankrupt merchant who had absconded. When this was done the bell in one of the towers—the bell of shame—rang for two hours. The tablet remains for three months and a day. In many German cities the bankrupt, as a sign of his condition, is compelled to wear a straw hat for a year and a day.

"Catching a Tartar."

The origin of this expression, as nearly as we can remember, is somewhat as follows: In the days when the soldiers of Christendom were doing battle against the Tartar hordes, who were enlisted on the side of the Turks, a Dutchman, fighting valiantly on the side of the Cross against the Cres-

* As the northern and western boundaries have not yet been surveyed, these areas are only approximate.

f Not including 306,997 acres, chiefly in the Gaspé Oil District not laid off into farm lots.

Estimated on ratio increase from 1852 to 1861, U.C., 4.34 per cent.; and L.C., 2.60 per cent.

cent, and more distinguished for honesty than for cunning, espied a Tartar mounted on a horse, whom he thought it would be a valuable trophy to capture and bring into camp. To this end, the Dutchman, seizing a favourable opportunity, sprang upon the horse behind the Tartar, and clasped him tightly about the waist. The Tartar, as may be supposed, clapped spurs to his horse, and made of to join his troop, and the last that was known of the unfortunate Dutchman by his comrades, was his going at a furious pace towards the Turkish army behind his intended captive, and singing out at the top of his voice—"I've caught a Tartar."

Iodine and Carbolic Acid.

The *Journal des Connaissances Médicales* publishes a letter addressed to Dr. Caffé on Dr. Percy Boulton's late discovery of the action of carbolic acid on iodine. "The inconvenience," says the writer, "attending the external application of iodine and its preparations is so serious that physicians are often compelled to abandon a remedy the therapeutic efficacy of which is undoubted, nay almost unequalled in *materia medica*. The great objection to the external use of this remedy is, that it leaves marks both on the linen and on the skin. This is a sufficient motive for seeking some means of getting rid of this drawback, especially in the case of ladies. Dr. Percy Boulton's method consists in adding a few drops of phenic (carbolic) acid to the iodine solution to be employed. This addition renders iodine perfectly colorless, so that it may be applied with impunity. But this combination has another advantage. It appears from that practitioner's observations, which I can confirm, that, so administered, carbolate of iodine, which is the new substance in question, is not only one of the most powerful antiseptics we possess, but is intrinsically a more efficacious agent than iodine alone. I have used this compound under the form of injections, gargles, and lotions, in all cases in which iodine is prescribed. In sore throat, ozaena, abscess in the ear, etc., this preparation is a sovereign remedy; since, besides its disinfecting qualities, it modifies the mucous membrane, causes all local sensibility to disappear, and cures the patient much sooner than if either of the two agents were employed separately. The formula I employ is as follows: Compound tincture of iodine, 3 gms.; pure liquid carbolic acid, 6 drops; glycerine, 30 gms.; distilled water, 150 gms. The writer then enters more particularly into the properties of carbolic acid, but with which our readers are already acquainted. Its efficacy as a disinfectant agent in the case of sores is well known; it may be prescribed in all cases in which tar water is administered, and is, we trust, now pretty generally adopted for disinfecting purposes in hospitals and barracks. —*Scientific American*.

London Gas Supply.

THE London gas companies, thirteen in number, it is proposed to consolidate into four gigantic corporations, the city to be divided into four districts, so that one corporation will supply gas to each of these districts. During 1866 these thirteen companies supplied London with the enormous amount of 8,653,000,000 cubic feet of gas.

On Sleep.

No person who passes only eight hours in bed can be said to "waste time in sleep." According to Gorget, a woman should sleep a couple of hours longer than a man. For the latter he allows six or seven hours, for the former, eight or nine. It is certain that strength or energy of brain will, when aided by custom, modify the faculty of controlling the disposition to slumber. Frederick the Great, and Hunter the great surgeon, slept only five hours in the twenty-four, while Napoleon seemed to exert a despotic power over sleep and waking, even amid the roar of artillery. An engineer has been known to fall asleep within a boiler while his fellows were beating on the outside with their ponderous hammers; and the repose of a miller is not incommoded by the noise of his mill. Sound ceases to be stimulus to such men, and what would have proved an inexpressible annoyance to others, is to them altogether unheeded. It is common for carriers to sleep on horseback, and coachmen on their coaches. During the battle of the Nile, some boys were so exhausted, that they fell asleep on deck, amid the deafening thunder of that terrible engagement.

The faculty of remaining asleep for a great length of time is possessed by some individuals. Such was the case with Quin, the celebrated player, who could slumber for twenty-four hours successively; with Elizabeth Orvin, who spent three-fourths of her time in sleep; with Elizabeth Perkins, who slept for a week or a fortnight at a time; with Mary Lyall, who did the same for successive weeks; and with many others more or less remarkable. In Bowyer's *Life of Beattie*, a curious anecdote is related of Dr. Reid, viz.:—That he could take as much food and immediately as much sleep as were sufficient for two days. The celebrated Gen. Elliot never slept more than four hours out of the twenty-four. In other respects he was strikingly abstinent; his food consisted wholly of bread, water and vegetables. In a letter communicated to Sir John Sinclair, by John Gordon of Swiny, Caithness, mention is made of a person named James Mackay of Sherry, who died in Strathnaver, in the year 1797, aged ninety-one; he only slept on an average, four hours in twenty-four, and was a remarkably robust and healthy man. The celebrated French General Pichegrue informed Sir Richard Blanc that during his whole year's campaign he had not above one hour's sleep in the twenty-four. Macish knew a lady who never slept above an hour at a time and the whole period of whose sleep did not exceed three or four hours in the twenty-four; and yet she enjoyed excellent health.

Rapid Printing.

A gentleman from Paris says: Rapidity of printing has just been carried out in France, to a degree far exceeding anything which has yet been accomplished in machine work, and out-stripping the famous American machines which were supposed to have realized everything attainable in the way of speed. M. Marinoni has put up in the new printing offices of the *Petit Journal* (a half-penny daily paper), a machine of his invention, which prints 600 copies a minute. Four of these powerful machines turn out 144,000 copies an hour, the whole impression being 446,000 daily.

MECHANICAL AND OTHER PERIODICALS

SUPPLIED BY

W. C. CHEWETT & CO.,
17 & 19 KING ST. EAST, TORONTO.

WEEKLY NEWSPAPERS.

Athenæum	\$5 50
British Journal of Photography	7 50
Builder	7 50
Builders' Weekly Reporter	5 00
Building News	5 00
Engineer	9 00
Engineering	9 00
Journal of the Society of Arts	7 50
Mechanics' Magazine	7 50
Mining Journal	9 00
Notes and Queries	7 50
Photographic Journal	9 00
Photographic News	6 50

MAGAZINES, MONTHLY.

Annals of Natural History	\$9 00
Artizan	4 00
Athenæum	4 00
Builder	5 50
Chemist	1 50
Chemists' and Druggists' Journal	1 75
Conchologia Iconica	3 00
Civil Engineer	7 25
English Mechanic	3 00
Edinburgh Philosophical Magazine	9 00
Entomologist's Magazine	1 75
Geological Magazine	5 25
Hardwicke's Science Gossip	1 20
Horological Journal	1 20
Journal of Botany	7 00
" of Chemical Society	3 50
" of Social Science	5 25
Pharmaceutical Magazine	3 50
Photographic Magazine	9 00
Practical Mechanics' Journal	3 50
Scientific Review	1 75
Technologist	3 50
Zoologist	3 50

QUARTERLIES.

Edinburgh Philosophical Journal	\$7 00
Numismatic Chronicle	6 00
Popular Science Review	3 00
Quarterly Journal of Geological Society	5 00
Quarterly Journal of Microscopical Science	5 00

**FREE
LIBRARY AND MUSEUM.**

THE
LIBRARY OF TECHNICAL WORKS,
PATENTS, &c. &c.

(PROCURED BY THE LATE BOARD OF ARTS AND MANUFACTURES,)

AND THE
MUSEUM NOW BEING FORMED,
OF
Agricultural, Horticultural, and Mechanical Productions,

ARE
OPEN TO THE PUBLIC,
FOR REFERENCE AND CONSULTATION,
AT THE ROOMS OF THE BUREAU OF AGRICULTURE,

IN THE
EAST WING OF THE PARLIAMENT BUILDINGS,

TORONTO,

FROM 10 A.M. TO 4 P.M. EACH DAY.

The Library contains several hundred volumes of valuable Books of Reference in Architecture, Decoration and Ornament, Designing, Encyclopædias, Engineering, and Mechanics, Manufactures and Trades, General Science, Patents of Inventions of Great Britain, the United States and Canada, &c. &c. &c. Other works of the same character, and also works of authority on Agriculture, Horticulture, and the applied Sciences connected therewith, will from time to time be added; rendering the whole of great value for practical purposes.

Specimens for the Museum are specially invited.

TORONTO, *February*, 1868.