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QUARTERLY REPORT

OF THE

SUB-COMMITTEE

OF THE

Board of Arts & Manufactures

FOR

LOWER CANADA,

SUBMITTED AT QUARTERLY MEETING HELD IN MONTREAL,
6TH APRIL, 1858.

WITH AN APPENDIX.

PRINTED BY ORDER OF THE BOARD.

MONTREAL:

OWLER & STEVENSON, PRINTERS, 17 HOSPITAL STREET.

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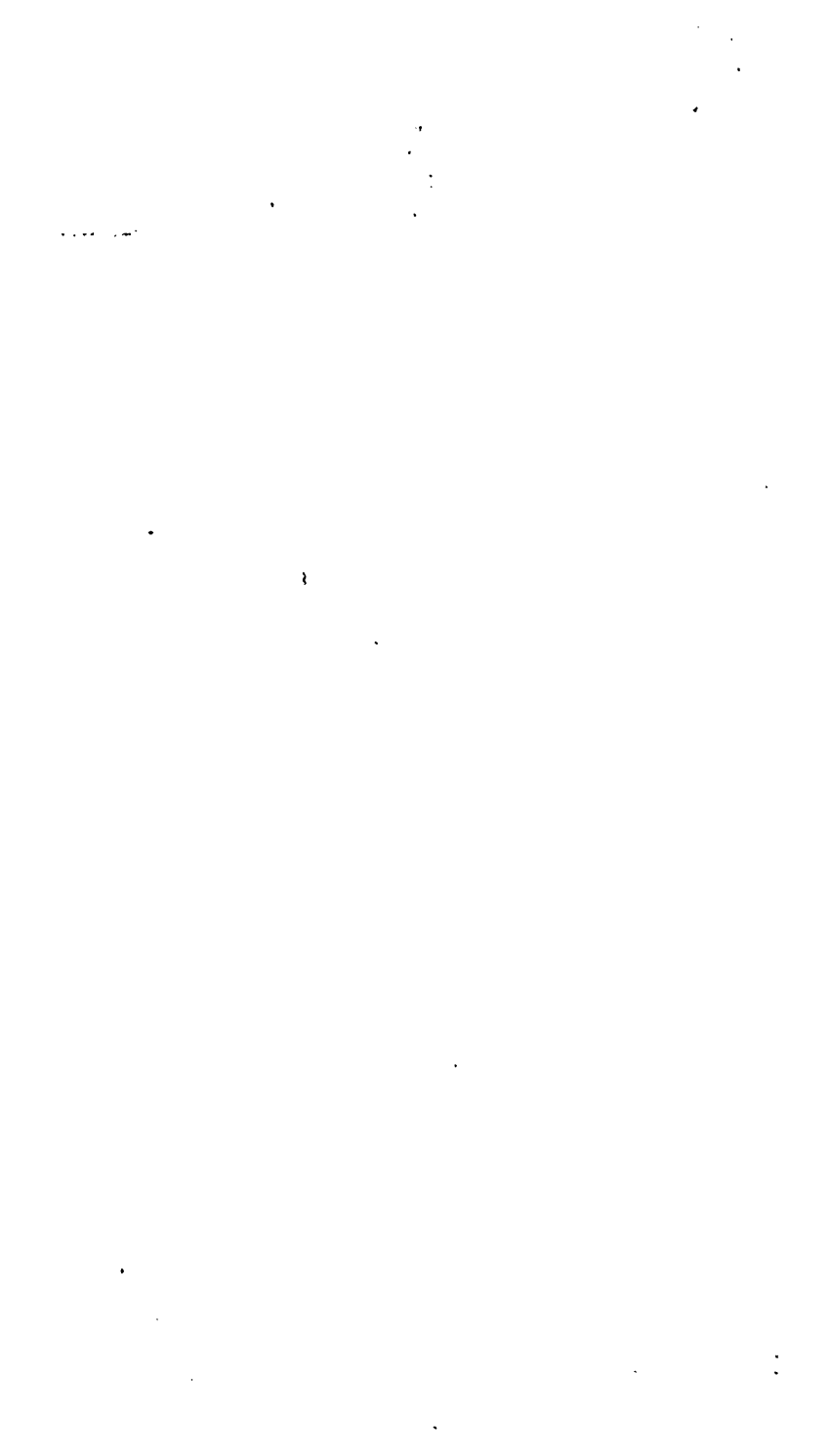
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Board of Arts and Manufactures for Lower Canada.

BOARD ROOMS, MECHANICS' HALL,
Montreal, 1st May, 1858.

The Board met to-day, pursuant to adjournment from the last quarterly meeting, held on the 6th April, when were present the Hon. P. J. O. Chauveau, L. L. D., Vice President, in the chair, Messrs. Weaver, Garth, Bartley, Stevenson, Milln, Spiers, Bulmer, Rodden, Richer and Durocher, and the Secretary.

The minutes of the last meeting were read and approved.

The design proposed for the Prize Medal was submitted, and a letter addressed to the Upper Canada Board on the subject was read.

After some discussion, Mr. Stevenson moved, seconded by Mr. Bartley, and it was resolved, that the Medal Committee be instructed to procure the medals and seals in Canada, and to cause the legend to be inscribed in both the English and French languages; and that before causing the medals and seals to be executed, the design be submitted to a meeting of the Board for approval.

Mr. Garth moved, seconded by Mr. Bartley, and it was resolved, that the Hon. Mr. Chauveau and Messrs. Murphy and Stevenson be added to the Medal Committee.

The Quarterly Report was then taken up and read, and after discussion, during which the President, David Brown, Esq. entered, it was moved by Mr. Milln, seconded by Mr. Stevenson, that the Report be adopted, and, with the Appendix, printed in both languages, for general circulation; five hundred copies in English and five hundred in French.

Mr. Bulmer moved, seconded by Mr. Stevenson, that Mr. Weaver, Mr. Garth and Mr. Rodden be the Special Committee to take charge

of the Department of Arts and Manufactures in the approaching Provincial Exhibition, with power to add to their number.

Mr. Garth moved in amendment, seconded by Mr. Milln, that the Special Committee for this purpose be not appointed until after the Local Committee meet and it is determined in what manner the funds for the Exhibition are to be apportioned, which was lost on a division.

The main motion being then put, was also lost, after which it was resolved that further action in the premises be left to the Sub-Committee.

On motion of Mr. Rodden it was resolved that the By-Laws and clauses of the Act constituting the Board now printed therewith in English, be translated and printed in French, with the French copies of the Quarterly Report and Appendix.

After which the meeting adjourned.

B. CHAMBERLIN,
Secretary.

REPORT.

} BOARD ROOMS,
MECHANICS HALL,
Montreal, April 3, 1858.

YOUR SUB-COMMITTEE HAVE THE HONOR TO REPORT,

That the following matters have been taken up by them during the quarter :—

A printed copy of the amended By-Laws, with as much of the Act (20 Vic. cap. 32) appended as authorised the formation of the Board, and regulates its operations, has been transmitted to each Mechanics' Institute in Lower Canada, together with a Circular, drawing the attention of the several Institutes, generally, to the Sections of the Act of incorporation, regulating their relations with the Board ; explaining the advantages to be derived from affiliation ; pointing out that sums of money, which, if properly applied to the education of working men and their children, might have been productive of great good, had been used for furnishing professional and commercial men with well appointed News Rooms, contrary to the intentions of the Government and Legislature ; and explaining further that it is in part as a means of establishing the claims of Corporations to the title of Mechanics' Institutes, and to the grants awarded to them as such, that the terms of affiliation with your Board have been laid down in the Act ; while it was hoped that through the operation of the Board, means of more extended usefulness might be afforded to all Institutions worthy of the name.

The following is a list of the several Mechanics' Institutes to whom communications as above were sent by your Sub-Committee :—

Quebec, Drummondville, Rimouski, Huntingdon, Rivière-du-Loup, Hemmingford, St. Léon, Iberville, St. Vincent-de-Paul, Lachute, St. Césaire, Maskinonge, Sorel, Magog, Sherbrooke, Chicoutimi, New Ireland, St. Eustache, Ste. Scholastique, St. Félix-de-Valois, Berthier, St. Augustin-de-la Baie, Bagotsville, St. Ours, Chambly, St. George,

Chatham, Three Rivers, Notre Dame-de-la-Victoire, St. Ambroise-de-Kildare, Montmagny, Richmond, L'Avenir, Ste. Rose, Fraserville, Danville, L'Assomption, St. Michel-de-Lachine, Becancour, Stanstead, Yamachiche and Varennes : Montreal having already affiliated.

Your Sub-Committee have to report, that only five of the forty-seven Mechanics' Institutes in Lower Canada have yet taken advantage of the provisions for affiliation with this Board in terms of the Act of Incorporation, viz : Montreal, St. Hyacinthe, Chambly, St. Césaire and Sorel ; though several others have responded, expressing their readiness so to do, on the receipt of the Government Grant for the next year ; and craving to be excused, meantime, for their inadvertence in having exhausted their funds in providing for the necessary expenses incurred in their first establishment. Some institutions entered under that name in the Act for granting supplies, have written to inform us that they are not Mechanics' Institutes.

Your Sub-Committee believe it important, that after a reasonable time, the Government grants now made to Institutes not prepared to extend their usefulness by means of affiliation should be withdrawn or much reduced. The attention of your Sub-Committee having been drawn to several notices in the list of proceedings of the Legislative Assembly of intended applications by Institutes in Lower Canada for additional pecuniary grants, (although as above stated, many of them have not yet complied with the provisions of the act respecting affiliation,) the President was requested, when lately in Toronto, to communicate with the Executive Committee of the Board of Arts and Manufactures for Upper Canada, with the view of, jointly with this Board, urging on the Government the propriety of adopting the policy above indicated. The President reported, on his return, that he had consulted with the Sub-Committee of the Upper Canada Board on the subject ; but it was agreed to delay any definite action till after the receipt of the Auditors' Report, which ought to be forthcoming according to the provision of the Act of Incorporation during the present month of April.

The Lecture Committee appointed by your Sub-Committee, recommended (and the suggestion was submitted to the Board at the Quarterly Meeting on the 3d of January last) that a circular be addressed to the Universities and chartered Colleges of Upper and Lower

Canada respectively, suggesting and inviting each to contribute one lecture or more, either in English or French, to a preliminary course, on the application of science to the industrial and fine arts, to commence in February last, and to be considered as preparatory for regular courses to be commenced next winter, and that the particular subjects of such preparatory lectures be left to the discretion of the lecturers; their expenses to be defrayed by the Board. In obedience to these suggestions, communications were addressed by the Secretary to the Principals of the several institutions indicated.

Your Sub-Committee have been so fortunate as to secure the services of several learned Professors and others, who have kindly consented to contribute in carrying out the objects of your Sub-Committee. The preliminary course of lectures is now being delivered, four of them having already been given before large audiences; the first by Professor Howe of McGill College, on "The principles of Wheelwork," on the 22d February last; the second by Professor Robins of McGill Normal School, on "Artificial Light," on the 1st March; the third by Professor Hamilton of McGill College, on "Steam," on the 8th March; and the fourth by Wm. M. Milln, Esq., Engineer, on "Mechanical Engineering," on the 22d March. Arrangements have been made for the delivery of lectures continuously every Monday evening until the beginning of May.

A petition to the Legislature was also drafted by the Secretary, praying for a large Government grant in aid of the objects of the Board, and to enable it to carry out the intentions of the Legislature as expressed in the provisions of the Act of Incorporation, in which it was represented that your Board was incorporated not only to co-operate with the Provincial Agricultural Association, in stimulating Canadian industry, and promoting its excellence by annual Exhibitions, but also to promote the diffusion of useful knowledge among the manufacturing classes generally; and that, for the important duties thus confided to them, a large preliminary expenditure will be necessary to enable them to purchase a library of reference, and to procure models of machinery, apparatus, &c. and to fit up a model room, and a museum of economic materials. That besides this preliminary expenditure, a considerable annual grant in aid will be necessary to enable the Board to secure the services of compe-

tent lecturers, to give prizes for essays upon subjects connected with the application of science to manufactures, and to publish and circulate the lectures and essays thus procured. It was also stated as most desirable that the Board should be enabled to aid the education of the industrial classes, by founding and fostering schools, in connection with the several Mechanics' Institutes in Eastern Canada, and to stimulate their progress by rewarding industrious and successful students, in like manner as is done by the English Society of Arts; as well as to establish a higher School of Arts and Science at Montreal, similar, in its objects and constitution to the *Institution des Arts et Metiers*, at Paris.

This petition has not yet been presented to Parliament; but the President has received the assurance that an appropriation of \$4,000 will be placed in the estimates, towards the approaching demands on the Board in connection with the Provincial Exhibition, &c.

A Committee was also appointed by your Sub-Committee for the revision of the Act of Incorporation; but from unforeseen causes, they have not been able to make much progress, hitherto, in the work. A communication has been received from the Sub-Committee of the Board of Arts and Manufactures for Upper Canada, intimating that they had appointed a committee to revise the Act of Incorporation, and that they will be happy to co-operate with the Committee of your Board in procuring the desired amendments thereto, and to receive any suggestions your Committee may be prepared from time to time to make. After due consideration, however, it has determined to wait until another year's experience of the working of the Act is obtained, ere asking for its amendment.

A special committee having been appointed to prepare the prize-list for the approaching Provincial Exhibition, and to make the necessary arrangements to procure the same they have prepared a preliminary report which your Sub-Committee submit for your approval.

Your Sub-Committee having secured the permanent use of a room as a Board Room in the Mechanics' Hall, and procured such necessary furnishings for the same, have ordered attendance to be given there every day, by the Secretary or his assistant, for the transaction of business.

A Committee appointed by your Sub-Committee, to examine the classes of the Montreal Mechanics' Institute, and, if found satisfactory,

with power to order payment of the \$200 voted by the Sub-Committee, have reported verbally that the classes have been successfully carried on, and authorising the stipulated payment.

In reply to communications addressed to those institutions, your Sub-Committee have received from the Commissioner of the United States Patent Office, the presentation of six volumes of the Reports of the Patent Office for the years 1850-56 inclusive, with the Rules and Proceedings of that department; and from the Smithsonian Institution, Washington, a copy of their Report; accompanied in both cases by a favorable response to the proposal for an exchange of publications, assuring your Sub-Committee that they will cheerfully embrace every opportunity which may offer to co-operate in carrying out the objects of your Board.

Your Sub-Committee have also received a communication from the Society of Arts, London, offering its hearty co-operation and assistance. The journal of the Society is regularly sent to the Board, and will be found on the table.

The Sub-Committee would suggest, that inasmuch as the time remaining for preparation is already short, immediate steps be taken, by the appointment of a Special Committee, to co-operate with the Council of the Agricultural Association and the Local Exhibition Committee, to urge forward the arrangements for the Exhibition, and to take charge of the Department of Arts and Manufactures therein.

Your Sub-Committee regret that in the absence of any information from the Council of the Agricultural Association, respecting the amount of money to be placed at the disposal of this Board, as its share of the grant for the Exhibition, they are unable to determine what sums will remain at their disposal to be appropriated for the other objects which it is its duty to promote. Indeed, it will always be difficult, if not impossible, to ascertain the precise amount which Parliament will place at the disposal of the Board in each year, in time to submit annual appropriations to the April meeting. It is probable that in future years these general appropriations will require to be made at the July meeting, or a special meeting called for the purpose, after Parliament rises. Of the grant made by Parliament last session for the organization of the Board, but a small balance now remains, beyond the

sum required to meet claims already due. In view of the approaching visit of the Secretary to London and Paris, however, the Sub-Committee have thought it advisable to place £100 sterling at his disposal, to cover such expenses as he may incur in procuring books for the library, articles for the museum, and information respecting the working of similar institutions in Britain and France.

The Sub-Committee will use their best endeavors to make arrangements, during the approaching summer and early autumn, for a full course of lectures, to be delivered during the ensuing winter in Montreal, as well as to provide lecturers for the affiliated institutions.

They will also urge upon such institutions the benefits to be derived from the establishment of classes in connection with them, and will, if possible, reserve a considerable portion of the grant about to be made them for the purpose of aiding the efforts of the Institutes to establish and carry on such classes.

They trust that they will be enabled, at the autumn meeting, to submit, for your approval, a properly matured scheme for the examination of the pupils of such schools or classes, and the granting to them of certificates of merit.

In conclusion, the Sub-Committee would draw the attention of members to a paper upon the education of Mechanics. &c., which is submitted as an appendix, to be published with this Report, to which they deem it desirable to give publicity and a wide circulation. In it is set forth, in general terms, the nature of the educational work which the Boards of Arts in Canada have undertaken—the wants which it will be their duty to endeavor to supply.

B. CHAMBERLIN,
Secretary.

D. BROWN,
President.

APPENDIX.

Education and the Progress of Manufactures.

The development of the Industrial resources of any country should be one of the highest aims of its statesmen and legislators. The duty of Governments to foster and promote, if not directly to regulate, the education of the people, is now almost universally recognized among civilized nations. In Canada both these patriotic objects are exciting attention in a greater degree than ever heretofore. It is desirable at present to call public attention to the best means of bringing educational efforts to bear directly upon the development of those resources of the country which fit it to become the seat of important manufactures.

Abundant water power, inexhaustible mines of iron and other metals and economic materials, almost limitless forests of valuable timber, fertile grain fields from which to feed operatives more cheaply than they can be fed elsewhere; districts densely settled with a population admirably adapted by its docility and ingenuity for factory hands, and (because almost altogether debarred during a long winter from agricultural pursuits), willing to work at a lower rate of wages than the usual standard upon this continent,—all constitute advantages for the establishment and growth of manufactures which have induced men to plant them here, and must conduce to their successful prosecution. But in a contest waged against the large manufacturing establishments of other countries, long established and supplied with abundant capital, these advantages are not alone sufficient to secure success. It behooves Canadians not only to take steps to secure a more abundant supply of capital, and as soon as possible, a larger market, but to make every necessary exertion to enable the classes desirous of embarking in manufacturing pursuits to become acquainted with the best processes now in use, and with all the improve-

ments of process and machinery hereafter made, and to furnish them with opportunities of obtaining an education specially fitting them for manufacturing pursuits.

It was, doubtless, with such an end in view that the Provincial Parliament at its last Session passed an Act for the establishment of Boards of Arts and Manufactures for both sections of the Province. Those Boards have been formed in conformity with the provisions of the Statute, but as yet have been necessarily little more than skeletons, unable, for lack of means, to enter upon operations likely to give them extended usefulness.

Heretofore, Parliament has divided its grants for Educational purposes into two classes, viz:—that for rudimentary education in Common Schools, and that for superior education in Grammar Schools, Colleges, and the Universities. Few of those destined to become mechanics or factory hands have enjoyed the benefit of any but the common school education; very many not even of that. As a sort of supplementary educational grant intended for those classes, sums have been annually voted for Mechanics' Institutes. But in very many—if not in the vast majority of those institutions, no attempt has been made to furnish any education specially adapted for the improvement of mechanics in the prosecution of their calling. In a few, evening classes have been established, at which lads have been able to make up for the loss of Common School education; Reading Rooms have been fitted up and stored with political, religious and literary newspapers, Libraries of miscellaneous literature gathered together, and lectures, *de omnibus rebus*, delivered; but in only a very few instances have studies been pursued, or educational efforts persistently directed into a course likely to be directly useful to the mechanics' or manufacturers' career. There can be no doubt that even the rudiments of education are useful *per se* to the mechanic as well as to all other men; that hearing lectures and reading books on history or *belles-lettres* will serve to render him a more intelligent man, will stimulate a spirit of inquiry and a love of reading which may perchance be attended with the happiest results. But it is not less certain that the usefulness of the sums granted to those institutions would be very much increased, if steps were taken to furnish mechanics with the means of such an education in science as would specially fit them for their calling, in the same manner as the members of the learned professions of the Law, Physic and Divinity, are trained at the Universities, and school teachers at the Normal Schools.

Hitherto science and the mechanic have been kept apart. The University man studies mechanics and the other sciences so necessary for

the working man's success in life, but the bounty of Parliament has not enabled the poor apprentice to receive the benefits of such instruction. It is time to remove this anomaly from the educational system of Canada. In England, where education is left so much to voluntary effort, the Society of Arts, with its numerous affiliated institutions,—Mechanics' Institutes and Working Men's Colleges,—is using strenuous and successful exertions to afford instruction in the sciences to the working classes. In Paris, for these many years, the Institution of *Arts et Metiers* has furnished such instruction free to the working classes of the French metropolis. It were a shame to us in this new country if we did not use like efforts, and, to the extent of our means, like instruments for the attainment of similar ends.

In Norway, too, and Sweden, provision has been made for the education of the artizan. Brace, in his "Norse-Folk," tells us that attached to the Latin Schools, which prepare students for the University, are, in eleven Norwegian towns, what are called real schools, from which the pupils are sent out to practical life or to the technical and military schools. In these, beside the usual instruction of the best schools book-keeping, commercial correspondence, the properties of goods, &c., are sometimes among the branches. There are eight "Drawing Schools" in Norway. "To these, of an evening, the mechanics and laborers come together and receive instruction in modelling, drawing, mathematics and natural philosophy." The artizans of several trades are required to take out licenses, which are made dependent on the certificates of these schools. "The effect of the instruction is found to be excellent on the taste of this class in their various trades." Brace speaks of these as conferring a superiority on the Norwegian system of education over the American, to which, in other respects, it is so very much inferior. Of such schools in Sweden, coupled with a like eulogy, he says:—"In a small Swedish town, not larger than Bridgeport, for instance, you find an evening school, where mechanics can learn drawing, modelling, or the practical application of the natural sciences, without any expense. I visited one in Stockholm, which was truly a 'School of Art.' There were in it beautiful plaster models of Greek sculpture, and bas-reliefs of Italian statuary, and of the best Danish bas-relief, than which modern art has nothing more pure and classical, besides plaster casts of heads, fragments of limbs, mathematical blocks, and architectural ornaments from which to draw and model. An original device struck me here of natural forest leaves arranged to draw or mould from. All this with lessons and teachers in the arts, lectures on chemistry, and the sciences is open every evening for laboring men and

women. The consequence is, as in France, you have a class in Sweden which America has not, of artizans of taste, artistic mechanics, men and women, who show ingenuity and a tasteful originality in the manufacture of furniture, the decoration, painting and preserving of rooms, the making of common wares and implements. Whatever you are obliged to buy for a house in the shops, without ordering, has not that hard, awkward, angular look, which such articles have with us. Then these schools provide women with a new and beautiful means of livelihood, the arts of designing, painting, drawing, and the applying of science to manufactures. Such schools for laborers exist all through Sweden."

The population of Norway is about $1\frac{1}{2}$ million, and that of Sweden about $3\frac{1}{2}$ millions. In all the elements of wealth they enjoy no superiority over Canada. Their system of popular education is, as a whole, far behind ours. There is no reason why we should be behind them in this regard.

It were a disgrace if, after taking the initiative in a scheme of improvement such as this, by the establishment of the Boards of Arts and Manufactures, the Government and Parliament of the Province were to turn back from pursuing so good a work, and allow these institutions to linger in a state of inefficiency, or to perish for lack of sufficient pecuniary aid to make them really useful.

It is hardly possible that any one can fail to see the great need of a scientific education more or less extended to all who seek to prosecute manufactures successfully. Really useful education for the several branches of manufactures must include instruction with respect to the laws of nature, and those properties of bodies which are the subject of scientific generalizations. The manufacturing system of a country should be made gradually to extend to, and to render available for use, all the vast assemblage of substances in nature which constitute its natural resources, till all are made to add to its developed wealth. Its metals, clays, slates, marbles, granite, flint, and its other useful and precious stones; the bones, skins, tendons, horns, hoofs, and intestines of its animals; the wood, bark, roots, foliage, flowers, fruits, gums, sap, resins, and aromas of its trees and plants, all furnish matters of scientific research and industrial and skilled manipulation. The Manufactories and Workshops where the laboring classes are employed, are oft-times vast scientific laboratories, where industrial art is applying on a large scale to the production of the conveniences of life and of wealth, the processes discovered or improved by scientific research. Here, too, in the prosecution of his labors, the intelligent handicraftsman is day by day discovering new truths to be added to the domain of science. Here-

tofore philosophers have been indebted, in rather larger degree, to the shrewd and patient observers of the workshop for the hints on which they have proceeded to the discovery of scientific truths, than manufacturers to the pains-taking researches of the experimental philosopher for improvements in processes of manufacture. It is time that the savans should repay this debt—and they are endeavouring to do so. It remained for statesmanship to furnish them the proper means and instruments, through which to confer this benefit upon the manufacturing classes and the country. The Boards of Arts and Manufactures, if furnished with means of making their organization useful in the manner contemplated by their founders, will furnish common ground where the learned man and the practical man or worker can carry on most usefully this interchange of ideas, deriving thence mutual profit—a profit sure to benefit the country. While on the one hand the working man would be taught in the schools or colleges founded for him under the auspices of the Boards the great truths of Mathematical, Physical and Applied Science, and, it is to be hoped, the important truths of Political Economy bearing on the condition of the laboring man as well;* the man of science would have brought under his notice from day to day, in the Museum and Model Rooms of the Boards, the various efforts of the inventive faculties of practical men to bring into use improved mechanical appliances and better processes of manipulation, and would be enabled to note the real progress made, and the blunders committed. While the prime object of the bounty of Parliament should be to promote the education of the industrial classes, this secondary and indirect benefit conferred upon science should neither be disregarded nor looked upon as of trifling importance.

Doubtless, for a time at least, considerable numbers of the operative class will be unable or unwilling to avail themselves of the opportunities offered them to obtain a scientific education, or at most will only acquire an acquaintance with the merest rudimentary elements. Yet even to these evening schools will be opened to teach them what they can and care to learn. To the more intelligent among them, and the class immediately above them, an education could and should be afforded which should be

* What could be more important in promoting contentment and tranquillity among the masses than presenting to them the golden truths comprised in a comprehensive view of the philosophy of industry, teaching them the dignity of labor; the enjoyment springing from purity of life, from well arranged domestic economy and sanitary regulations; explaining all that relates to the employment of capital, and the fair remuneration of labor; together with just views of the aims and uses of public education,—laying before them in familiar terms those practically valuable parts of political economy bearing on their local and class interests.

In a genuine sense scientific, and at the same time decidedly practical. That there should be a well educated, well informed class of men to act as foremen and superintendents of all large establishments, is almost a *sine qua non* of manufacturing success. Having to contend with the larger capital and more firmly established factories of other countries, we cannot hope to compete with them satisfactorily, if, because of our tardiness in this respect, their workmen are also much better educated, better fitted, better trained for their work. The knowledge of the best processes of manufacture, the best machinery, and the best mode of its application tends to an immense reduction of expense. Ignorance breeds waste of time, labor and capital which must prove fatal to success. Take but one department of skilled labor, the care of steam engines, and how frightfully long is the catalogue of known losses of life and of property resulting from the unhappy ignorance of those who have had engines confided to their charge.

The education of the laboring man for the proper exercise of his craft is second in importance to no question of political economy or practical philanthropy which engages the attention of statesmen. And it is much to be desired that Parliament will see fit to substitute for or add to the numerous grants usually made in aid of Mechanics' Institutes, (some of which are frittered away to serve the purposes of others than the class intended to be benefitted, and others used in a manner not calculated especially to promote the education of the artizan for his business,) a large grant to the Boards of Arts and Manufactures to enable them to promote such education. Properly furnished with means and appliances for their work, they can and are prepared to perform the labor which is necessary to secure the great objects contemplated in their formation. Without those means and appliances they are powerless for good.