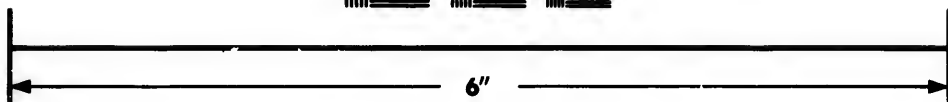
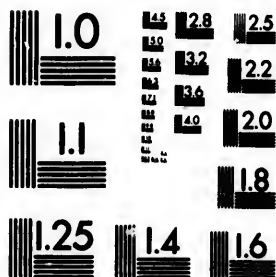


**IMAGE EVALUATION  
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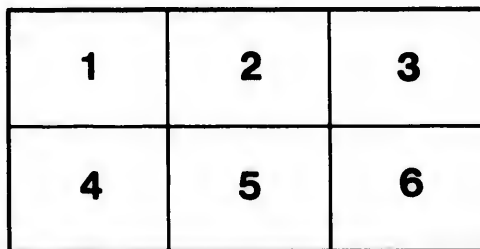
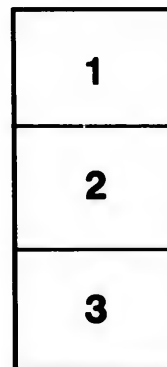
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**CONSTITUTION**  
**AND**  
**BY-LAWS**  
**OF THE**  
**ST. JOHN MECHANICS' INSTITUTE.**

**WITH THE**  
**INTRODUCTORY LECTURE**

**BY**  
**DOCTOR GESNER.**

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**PRINTED FOR THE INSTITUTE.**  
**1839.**

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# List of original Members of Mechanic Institute

## CONSTITUTION.

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1. This SOCIETY shall be denominated the 'THE MECHANICS' INSTITUTE OF SAINT JOHN.'

2. Its objects shall be the instruction of Mechanics and others in popular and useful Science, and its application to the Arts and Manufactures, by means of Lectures, Apparatus, Models of Machinery, a Museum, a Library and a School.

3. This Society shall consist of an unlimited number of members, who shall be divided into two classes, viz: Regular and Life Members; Honorary and Corresponding Members.

4. Any person paying *Ten Pounds* may become a Life Member, provided he is recommended and chosen in the same way as regular members; and such life members shall not be called upon for any annual payments.

5. The Officers of this Institute shall be a President, two Vice Presidents, a Recording Secretary, a Corresponding Secretary, a Treasurer and twelve Directors, to be elected annually by ballot—the persons having a majority of votes shall be declared duly elected; provided however, that no member whose dues shall remain unpaid for twelve months, (unless he shall have been exempted from payment by a vote of the Society) shall be allowed to vote at any such election.

6. The President, Vice Presidents, Secretaries, Treasurer, and Directors, shall constitute a Board of Directors, with full powers to appropriate funds (under the direction of the Society) and jointly to conduct the affairs of the Institute. Not less than two-thirds of this Board must be operative mechanics.

7. The Recording Secretary shall engross in a book, to be kept for that purpose, the minutes of all the transactions of the Society, the names of the members, of donors, and all other matters requiring to be recorded. He shall also receive all dues and donations in money, and pay the same over to the Treasurer, and take his receipt for the same; and shall also make out a Report quarterly, and exhibit it to the Society; and post up the names of all persons proposed as Candidates in the place designated for that purpose.



8. The Treasurer shall receive all dues and donations in money from the Secretary, and give a receipt therefor; pay all drafts on him when signed by the Secretary, and countersigned by the President; keep a regular account of the financial concerns of the Institute, an abstract of which, accompanied with satisfactory vouchers, he shall exhibit quarterly, and at such other times as shall be required.

9. Every person on becoming a member shall subscribe this Constitution, and pay the sum of *ten shillings*; and every member shall be subject to an annual payment of fifteen shillings, which shall be paid at the first meeting in October, or before he receives his ticket of admission to the lectures.

10. The initiation fee may be increased in proportion to the increased value of the property belonging to the Institute; but this cannot be done except by a resolution passed at a general meeting.

11. The Institute will gratefully receive donations of money, books, apparatus, models of machinery, drawings, or natural and artificial curiosities, which donations, together with the names of the donors, shall be registered in the books of the Society, kept for that purpose.

12. An annual meeting of this Society, shall be held on the second Monday in April, to audit accounts, elect officers, and transact other business connected with the Society.

13. The annual Tickets of regular and life members may be transferred; but persons to whom they are transferred shall not be admissible, to any office or vote; the management of the Institute being invested in the regular and life members, who are eligible to any office and entitled to vote on all questions connected with the Institute.

14. In order to preserve the harmony of the Society, nothing of a religious, irreligious, or political tendency shall be admissible on any account at any meeting of the Institute.

15. In order to make the Institution as generally useful as possible, any person shall be entitled to the privilege of reading from the library and attending the lectures, or any other course of instruction that may be given in the Institution, for one year, on paying such a sum as the Society shall determine; but such person shall not be entitled to any share in the management of the Society, can be eligible to no office, nor entitled to vote at any meeting whatever.

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16. This Society shall be permanent and its property unalienable, but each member shall possess the power to transfer his share, provided the person to whom he transfers is approved of by the Society in the same manner as admitting new members.

17. Any proposal to alter or amend this Constitution, must be made in writing, and subscribed by at least ten members; it must be delivered to the Secretary, who shall read it at the first regular meeting, after which it shall lie over to the next general meeting for discussion; and the proposed amendment finally adopted or rejected by a majority of the members present, the votes being taken by ballot.

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## BY-LAWS.

### MEETINGS.

1. The regular meetings of the Institute for the transaction of business shall be held on the last Monday of every month.

2 The dues of members shall be payable at the monthly meeting in October, or before any member receives his ticket of admission to the Lectures.

3. Extra meetings may be called by the President, or in his absence, by the presiding officer, and Secretary, whenever they may deem them necessary. It shall also be their duty to call meetings, when requested in writing by twenty members.

4. Twenty-five members shall constitute a Quorum for the transaction of business.

5. The Recording Secretary shall give public notice in one or more of the City News-papers seven days previous to every general meeting of the Institute.

### DIRECTION.

1. The Board of Directors shall keep full and accurate minutes of all their transactions, and at the monthly meeting in April and October, report their proceedings, together with a general statement of the affairs of the Institute.

2. Any vacancy which may occur in the Board of Directors, by death, resignation, or otherwise, shall be filled at the first general meeting thereafter.

### MEMBERS.

1. Persons wishing to become members, must be proposed at least one meeting previous to being balloted for: having been first recommended by two members of the Institute, in the following form. "We the undersigned members of the Saint John Mechanics' Institute from our personal knowledge of — do hereby recommend him as a fit and proper person to become a member of the same." And at the general meeting in April in each and every year, the President or Chairman for the

time being, shall appoint a Committee of thirteen members, who by a majority of their votes to be taken by ballot, shall decide upon the admission of all candidates so proposed during the current year; and in case any member of the committee be absent at any monthly or special meeting the President or Chairman shall fill up the vacancy for the evening from the members present, so that no delay may arise.

2. Every member on payment of the initiation fee shall receive a certificate of membership which he shall produce as proof of his membership when required; but no member shall be entitled to the privilege of the Institute whose dues shall be in arrear.

3. The Institute may expel any member whose dues have remained in arrear for a longer period than one year.

4. In case any member wish to withdraw from the Institute and transfer his membership he shall give notice thereof in writing to the meeting, and state the name of the person to whom the share is to be transferred.

5. Honorary members shall be proposed and elected in the same manner as regular and life members.

6. Candidates for honorary membership, shall have rendered some signal service in Science or in the Arts.

7. Corresponding members shall be such as do not reside in the city of Saint John, nor in its immediate vicinity.

8. Corresponding members shall be elected in the same manner as regular and honorary members, and shall be subject to no charge for initiation or yearly dues. It shall be their duty to communicate from time to time such information as may be in their possession relative to improvements and discoveries in the Arts, provided that such information does not interfere with their private interest.

9. All regular and life members on removing their residence from the City of Saint John, may become corresponding members, subject to the same regulations as regularly elected corresponding members.

10. Whenever a corresponding member removes his residence to the City of Saint John, he may become a regular member by paying the annual dues—commencing on the first meeting in October subsequently to his return.

#### ALTERATIONS.

1. No alteration shall be made in these By-laws, unless it shall be offered in writing to the Institute, signed by at least five members, one meeting previous to being acted upon.

2. It shall be the duty of the Secretary to place the proposed alteration in a conspicuous place in the room occupied by the Institute.

**RULES TO BE OBSERVED AT MEETINGS.**

1. Any member wishing to speak, must rise in his place and address the presiding officer; when two or more rise at the same time, the Chairman shall decide, who has the preference.

2. No motion shall be considered as before the meeting unless it has been seconded; when the Chairman shall declare whether it is in order.

3. A motion for adjournment shall be always in order.

4. An amendment is at all times in order; and if it is accepted by the mover of the resolution, the question shall be on the motion as amended: if not, the amendment shall be the question first under consideration.

5. No member shall speak more than twice on any question without permission from the chair.

6. When a question is under debate, no motion can be received unless to amend, to postpone, for the previous question, or to adjourn.

7. All questions shall be put in the order in which they were moved, except that, in filling up blanks, the largest sum and longest time shall be put first.

8. Questions of order shall be decided by the Chair without debate, after which any member has a right to appeal to the meeting.

9. Committees shall be appointed by the Chair unless otherwise directed by a majority of the meeting.

10. All motions, propositions, or resolutions offered by any member shall be delivered in writing and signed by the movers.

11. The following shall be the order of Business to be observed at meetings—

1. Reading Minutes.
2. Balloting for Members.
3. Proposal of Candidates.
4. Reports from Officers.
5. Reports from Board of Directors.
6. Reports from Committees.
7. Essays and Communications.
8. Resolutions.

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### LIST OF MEMBERS.

Adams, William  
Agnew, Francis  
Agnew, James  
Allan, Robert  
Allan, James  
Allan, John  
Allan, Thomas  
Allingham, John

Barlow, Thomas  
Barlow, Ezekiel  
Barlow, Joseph  
Barlow, William  
Barlow, Thomas Jun.  
Barbour, Matthew  
Bach, Richard  
Bartlett, James H.  
Bartoux, Edward J.  
Barr, Thomas G.  
Bayard, Doctor  
Bayard, Doctor William  
Batts, Azor W. T.  
Batts, Charles P.

Chipman, Hon. Ward  
Calkin, Charles  
Cameron, Ewen  
Cameron, Donald A.  
Campbell, John M.  
Campbell, Alexander  
Carlyle, William  
Carvill, William  
Cassie, George  
Chadwick, George  
Chipman, John C.  
Chalouet, Benjamin C.  
Chisholm, Hugh  
Curry, William  
Chubb, Henry

Daniel, Thomas  
Deveber, Richard S.  
Dimock, Charles H.  
Dishrow, James W.  
Dolby, Edward  
Duff, Peter

Anderson, Lionel  
Andrew, Rev. W.  
Ansley, Daniel  
Ansley, B.  
Ansley, Charles  
Ansley, John,  
Avery, W. L.

• Blakslee, Asa, Jun. +  
Botsford, George  
Boyd, Dr.  
Hourke, Christopher  
Bugbee, Samuel C.  
Britain, Robert  
Brown, William A.  
Brundage, William Jun.  
Bryant, Michael  
Budd, Edward J.  
Burnham, John W.  
Burns, John  
• Buros, George M. *written 29 Sep 88*  
Burtis, William

Chubb, Henry J.  
Church, Ephraim  
Clarke, Francis  
Clarke, John jr.  
Craig, George  
Crane, James R.  
Crane, Thomas P.  
Crawford, Samuel  
Croar, John  
Cross, Colin E.  
Couch, Thomas  
Cook, Henry  
Coleman, W. J.  
Coigley, John  
Cunningham, John

Duff, Charles  
Duff, Richard  
Duncan, John  
Duun, James  
Donaldson, L.  
Doherty, William

Drake, Peter  
Drover George  
Dunphy Rev. James

Eagles, Edward  
Elliott, James  
+ Evertt, Charles D.

Fairweather, E.  
Faulkner, Isaac  
Fitzgerald, E.  
/ Fleming, George O

Gale, Benjamin  
Gallagher, Charles  
+ Ganong, John E.  
Garrison, George A.  
Gesder, A.  
Gibbons, Charles R.  
Gilchrist, Thomas  
Gillespie, Thomas  
Gillespie, Samuel

Hazen, Robert F.  
Hackett, Edward  
Hamilton, Samuel G.  
Hammond, William  
Harbell, Cornelius  
Hallett, Samuel  
Hardenbrook, John  
Harris, James *dead June 88*  
Hastings, John  
Haws, John  
Hay, Thomas  
Hendricks, James  
Hennigar, Henry

Iochee, Charles

/ Jack, William  
Jarvis, R. M.  
Jarvis, Gustavus R.  
Jarvis, Edward L.  
Jardine, Alexander

Kinnear, W. B.  
Kay, Jacob  
Kay, Charles  
+ Kaye, Edmund  
+ Kaye, James J.  
Keltie, Robert  
Keohan, James

Langtry, Richard  
Lawrence, Alexander  
x Lawton, Charles +  
Lawton, James  
Lawton, William  
Leavitt, Thomas

Durant, Lewis W.  
Durant, William

Ewing, Robert  
Emery, Joseph D.

+ Foster, S. K. 05  
Foolie, Robert  
Frost, William

Gilbert, George G.  
Goldsmith, Oliver  
Gould, Samuel  
Gove, Jeremiah  
Gray, Rev. B. G.  
+ Gray, John H.  
Gray, John  
Greco, James

Henry, James  
Hinds, James  
Holman, Samuel  
+ Howard, William O  
Humbert, John  
Hume, Robert  
Humphreys, Charles x  
Hutchinson, George jr. x  
Hutchinson, G.  
Hutchinson, Robert S.  
Hutchison, V. B.  
Hynes, William

Johnston, Alexander  
Johnston, Charles  
Jones, Thomas  
Jordan, Samuel  
Jouett, C. H.

Ketchum, Edwin  
Kinnear, Harrison G.  
Kinnear, John  
Kinnear, Boyd  
Kirby, John  
Knollin, John  
• Knox, Richard P.

L'Epouse, George H.  
Lingley, Joseph  
Livingstone, William  
Lowden, J. W.  
Longmaid, John  
Lorimer, William

*Continued p. 11. dated 1839*

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M'Avity, Alexander  
 M'Avity, Thomas  
 M'Avity, William  
 M'Arthur, William  
 M'Cauley, William  
 M'Clenaghan, William  
 M'Connell, Hugh  
 M'Dermott, Francis  
 M'Dermott, William  
 M'Donald, James E.  
 M'Farish, Alexander  
 M'Larity, John  
 M'Lauchlan, John  
 M'Kay, John P.  
 M'Grath, John  
 MacGregor, Rev. John G.  
 MacGregor, James  
 Mackey, William  
 Mackay, James  
 M'Kenzie, R.  
 M'Lauchlan, Charles  
 M'Leod, George  
 M'Millian, David

Nelson, V. H.  
 Nevin, John  
 Nicholls, Henry  
 Nicholson, T. L.

Owens, John  
 Parker, Hon. Judge  
 Parker, Hon. N.  
 Partelow, John R.  
 Paddock, Dr. John  
 Paterson, Edw. G.  
 Paterson, John  
 Paterson, James  
 Paterson, David  
 Patton, J. W.  
 Payne, James P.  
 Payne, Robert  
 Peel, Benjamin

Quaintance, Thomas

Robertson, John (L. M.)  
 Robinson, Beverley  
 Robinson, George D.  
 Robinson, J. M.  
 Ramsey, W.  
 Rankine, David  
 Rankine, Thomas jr.  
 Rankine, William  
 Ratchford, E. D. W.  
 Ratchford, Charles E.  
 Ratchford, A. F.  
 Reid, William

M'Naughtan, John  
 M'Queen, Alexander  
 Melick, James G.  
 Millican, James  
 Millican, William  
 Millican, John  
 Millidge, Thos. E. +  
 Mills, William  
 Michael, John M.  
 Minnette, R. C.  
 Mitchell, W.  
 Moffitt, George  
 Moore, W. E.  
 Morris, J. W. jr.  
 Mosher, Ira  
 Munro, John  
 Mair, Alexander  
 Major, William  
 Marshall, J. R.  
 Marvin, Francis jr.  
 Mason, Samuel  
 Mason, James  
 Mather, Isaac B.

Nisbet, William  
 Nisbet, William jr.  
 Nisbet, Thomas  
 Nisbet, Thomas jr.

Pengilly, R.  
 Perkins, D. C. +  
 Perley, M. H.  
 Peters, James jr.  
 Peters, W. T. jr.  
 Pettingell, John  
 Pine, Jury  
 Pollok, John  
 Polly, Thomas  
 Price, Edmund A.  
 Purvis, John  
 Purvis, William

Reid, Thomas  
 Reid, Robert +  
 Reynolds, W.  
 Reynolds, B.  
 Rhodes, John  
 Ritchie, W. J. x  
 Ritchie, John  
 Robertson, Duncan  
 Robertson, W. A.  
 Robertson, George H.  
 Roberts, J.  
 Robinson, D. M.



Reed, Thomas  
Ray, Robert

Simonds, Hon. Charles,  
Sancton, Thomas A.  
Sancton, Henry P.  
Sancton, George P.  
Sancton, Edward  
Salter, George  
Sands, Richard jr.  
Scott, Andrew  
Scott, John W.  
Scott, James  
Scovil, Wm. H.  
Scovil, William jr.  
Scovil, S. J.  
Seeds, Samuel  
Sears, Edward  
Sears, John  
Sharp, John G.

Thomas, John  
Thomson, Charles  
Thorne, Richard  
Thorne, H. T.  
Tilton, Barnabas  
Tilley, Samuel L.

Umpbry, George  
Vernon, Gideon  
Vernon, James

White, James  
Wilmot, John M.  
Woodward, Isaac  
Wallop, N. W.  
Walker, John  
Waterberry, George jr.  
Waterberry, Charles J.  
Waterberry, Daniel  
Watts, Reuben  
Waterhouse, Levi H.  
Watson, G. B.  
Wales, James  
Wetmore, Robert H.  
Wesley, Thomas  
Whipple, Augustus W.  
Whitney, James  
Whittaker, Charles

Younger, George

*Honorary Member. Professor Gray, King's College, N. B.*

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**INTRODUCTORY LECTURE.**

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The progress of knowledge in all its various departments, has distinguished the present era from every other period in the history of mankind; and whether that knowledge be considered in reference to the great efforts performed by the human mind, or its influence upon the wants of society, it cannot fail to excite surprise. When we compare the condition of the inhabitants of Great Britain, or civilized Europe, with those of the Islands in the Pacific Ocean, and such as are still bound by the chains of an untamed barbarity, we perceive what a wide distance beings of the same race, are separated in their moral, civil, and intellectual conditions. Just in proportion as our enjoyments exceed those of the ferocious Arab, prowling over the burning desert, or the Indian hunter who seeks repose on a bed of snow, so are we indebted to the acquirement of knowledge for the comforts and luxuries we enjoy.

The difference which exists between a learned and accomplished man, and the untutored savage, is far greater than that which separates the barbarian from the brute. Notwithstanding the exalted powers conferred on man, unless his understanding is improved, by mental training, he remains a slave to passions, and instincts, but little more refined than those of the lower animals.

The Greeks and Romans were the first nations of Europe who arrived at civilization. They improved their minds, cultivated philosophy, and promoted the arts and sciences.— But their countries were sacrificed to a barbarous people, and the Roman Empire fell before ignorant and merciless marauders.— Well may they be called the dark ages, when the Roman poet no longer tuned his harp, the philosopher was silent, and the mysteries of the arts were forgotten. The remains of their cities are still seen lifting their massive columns towards the heavens, and their relics of exquisite workmanship still proclaim in most intelligible characters, the height their knowledge and taste had attained.

N. B.

The reason why the Latin and Greek languages have been so deeply studied, and form the principal part of what has been

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called a liberal education, is because it was necessary to rescue from oblivion the knowledge gained by the learned ancients; who, when they had departed, left behind them in manuscripts, information it required centuries to accumulate. It was not until the twelfth and thirteenth centuries that learning began to revive in Italy. Since then it has been gradually extending its influence, and will advance under the direction of Providence, until the darkness now covering the greater number of mankind, shall be dispelled, and the light of intelligence cover the earth.

Man in an uncivilized state is a savage, governed by the sudden impulse of a moment he rushes into acts of horrid brutality, and is more to be feared than the lion of the forest, or the venomous adder. He may behold and admire the beauties of external objects, and pay his adoration to a God made by his own hands, but he perceives not the proper use of any thing in creation, and is a stranger to intellectual enjoyment. On the other hand the man of an enlightened mind is constantly engaged in applying every thing to some definite purpose. To lessen his own and the miseries of others—to increase the comforts and enjoyments of life, are his aim, and so long as those objects are pursued under the direction of religion, they are deserving a share of his labor. He arrives at some knowledge of himself, and the material world, and if truly wise prepares for an unchangeable, and better state of existence.

Like the radiant light of the sun, the germs of knowledge are now extending into the most gloomy retreats of ignorance, and the European nations, are now vying with each other in efforts to remove the veil that has so long clouded the minds of the people. But century after century passed away, when learning was chiefly confined to monastic institutions and colleges, whose inmates were rather disposed to perplex each other by abstruse questions, than to bestow any of their knowledge where it was most required, and would have produced the best effects.

The invention of printing opened the great avenue of knowledge. "The wide diffusion of christianity, and the stupendous discoveries in sciences and arts" carried with them the elements of civilization. Up to the beginning of the present century there has been for a long period a steady increase of learning, and the poor are now taught to understand written ideas.

Nevertheless those usages which had so long confined the higher branches of learning to colleges, and formed a barrier against any intrusions of the lower ranks, withheld much useful matter from the people, and public institutions of learning, refused to cultivate those branches, which, by their practical influence up

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on the arts would have returned a hundredfold reward. Indeed it may be safely asserted that many colleges of the present day, exercise no salutary influence beyond the studies of divinity, physic, and law, and the poor farmer, and mechanic, are left to puzzle out, the little they may know without their aid.

Again, when any work fell from the hands of the learned of former days, their subjects were often dressed in terms derived from dead languages, and technicalities incomprehensible to the humble reader. Difficult subjects were treated with still more difficult words, and ideas were expressed far too great for an empty head to contain. But a new and better day has dawned upon mankind, and if it ever was the object of the learned to withhold their knowledge from the humble orders of society, it has now become the aim of many to impart the precious gift.

Let it not be supposed that I would attempt to throw a shadow upon the motives of those to whom we are so much indebted, and from whose labours we have received rich supplies of information. No, they acted in accordance with the prejudices of their times, and the monuments of learning they have erected for themselves will never decay. In England much talent and labor have been devoted to discover the best system of education for youth, and the names of Bell and Lancaster will long be remembered, as advocates for the general instruction of the poor.

The system of education in Scotland has been remarkably successful, and in the Edinburgh College, lectures are now delivered in all the physical sciences. Germany and Prussia have also plans by which general instruction is diffused among all ranks of society. Many of us can remember thirty years ago, when a boy was trained to be a scholar by the use of Dilworth's spelling book, and the catechism of the assembly of divines.— Now there is an abundance of books so admirably fitted to the infant mind, that the lesson is rendered playful, and pleasing.— Now young urchins not ten years old, dare to dispute on astronomical subjects, and the child is taught geography.

But the more immediate object before us this evening is to consider the means of transferring the useful and practical knowledge contained even in the highest branches of literature, and science, to mechanics and all those who by their daily avocations are capable of carrying into effect those principles which will improve the various productions of their industry. And certainly an object so benevolent, and important, is worthy the place it has found in the heart of every member of this Institute, and the largest and most respectable body ever associated for a similar purpose in British America. Here uninfluenced by those

political or party prejudices, ever too apt to find their way into large communities, only one motive is recognized, namely, that of exchanging our several stocks of knowledge one with another, for the purpose of aiding a most useful class of our fellow men. And in the effort we will not only be cheered by the purity of our intentions, but also receive instruction ourselves.

One of the first individuals who made an effort, to communicate a greater amount of knowledge to the people was Mr. John Anderson, Professor, of natural philosophy in the University of Glasgow. He died in 1796 and left his fortune for the foundation of an institution where the different branches of academical instruction should be taught to all orders of society.— In 1820 Mr. Henry (now Lord) Brougham, devoted much of his time and talents to the establishment of schools in England, where mechanics, and the labouring classes should receive instruction in the sciences and arts. His labors proved extremely successful, and however impolitic that gentleman may be in the course he has since pursued as a statesman, he deserves credit for having supported a mode of communicating instruction which has done much good.

When the system of improving the minds and productions of artizans was first introduced, it met with powerful opposition, for it was naturally feared that large associations of men would sometimes exercise an influence partaking more of a party than a scientific spirit. Time has discovered that such fears were groundless, although it may be remarked, that wherever mechanic's Institutes have failed, their overthrow has arisen from the introduction of religious, political, and party disputes.

A Mechanic's Institute was opened at Edinburgh in 1825 from 1825 to 1827 they were extended to London, Liverpool Birmingham and the principal towns of England and Scotland. They have since been established in the smaller towns and villages of Great Britain, and in the United States: but so far as I am acquainted, Halifax and St. John, now have the only institutions of the kind in British America.

In London there are many institutions for popular instruction. The London Mechanic's Institute is supported by 1200 members, lectures are delivered on scientific subjects, literature, and music. The talented Dr. Birkbeck is president of the People's Institution in the eastern suburbs of the city. The lectures are of the most scientific and accomplished classes, and the good effects produced, upon society in general by their labours, have exceeded the most sanguine expectations. At Liverpool the Mechanic's Institute has advanced rapidly since 1830. It not

possesses upwards of 1200 members, and an annual income of 750*l*. Meetings are held, and lectures are delivered two evenings in the week. It has been remarked of this Institution that among all the individuals composing its body, not one has ever been convicted of a criminal offence. Large sums of money have been expended, and responsibilities sustained, under the most discouraging circumstances: but a reward has followed of the most pleasing kind, and not only have the different articles of manufacture been improved, but the morals of all classes exhibit a gratifying renovation.

The Mechanic's Institute at Leeds possesses a library of 2000 volumes. At Hull a building has been erected at the expense of 2000*l*. and the library contains 2500 volumes. Most of these establishments have extensive collections of specimens in natural history, curiosities, and models.

At Halifax in the sister Province, the Mechanic's Institute at its commencement enrolled only six members. Its advantages were afterwards seen, and now many of the most respectable part of the community give it their care and patronage. Classes are taught in different branches of practical science, and lectures are delivered once a week during the winter months. Donations from the old country have been received, and a museum has been formed containing a variety of curiosities, minerals, and other objects of natural history. These are open for the inspection of members during the evening of each lecture.— So steadily has the museum increased, that it has become the favorite resort of ladies, and strangers. The influence produced by this Institute upon the different ranks of the community, has been of the most salutary kind. Several gentlemen who had never devoted their attention to scientific pursuits, urged forward by the wants of the establishment, have devoted themselves to the task, and by their own labors have won some admirable acquirements. Others have received a fund of curious and useful information, while a general taste for the study of the fine arts has prevailed. The prizes offered for models, and any improvements in architecture, ship-building, and machinery have excited the young. Many whose evenings were formerly spent at the alehouse and club, are now engaged in laudable pursuits. Even the most wealthy and influential citizens of Halifax hail the yearly opening of the Institute with pleasure, and acknowledge that they not only spend their time pleasantly within its walls, but always retire with increased knowledge. To these facts I am a witness, and if such have been the results there, what may we not expect in this city, where

almost the whole body of the talented, and affluent of the community have volunteered *en masse*, to further the advancement of knowledge, and to communicate to operative mechanics, such information as will guide them in their industry, and widen their intellectual capacities. Whoever contemplates the vast amount of information which has been given to the people of Great Britain by Mechanic's Institute's, upon the principle of mutual instruction, and views the results of enlightening mankind generally, cannot but rejoice that the barrier which formerly confined education to the rich, is broken down, and the pure streams of knowledge now roll downward even to the beggars offspring.— No longer concealed in the monastery and college, and confined to men of secluded habits, the fountain of learning is open, and all may drink of the unalloyed pleasure arising from illumination of mind. Until a system of national education is established which shall secure to all classes a certain degree of useful information, it is necessary that no effort should be spared, nor delayed, that can ameliorate the condition of the unlearned.— But there is an object of far higher importance than those to which I have already referred. It is the influence education holds upon the moral habits of man. It is certain that trades unions and other political associations of men, recently disturbing the peace of the mother country, and endeavouring to keep the price of wages far higher than the market will afford, thrive upon the ignorance of their blind votaries, who are ever liable to become the dupes of cunning and unprincipled men. It is there fore not only wise policy to grant information to the ignorant, but the duty of all who wish the safety and happiness of themselves and their country; and if the diffusion of science, and literature deter men from vice, what higher object can be offered as a reward for our benevolence, and philanthropy.

In contemplating the numerous branches of learning, and the wide circle of the natural sciences, we cannot but feel surprised at the powers of the human mind, and the perfection to which many studies have arrived. But no one human intellect could ever hold within its grasp but a small share of knowledge when it is generally considered, and it has only been by taking a single track in the wide field of nature, that any have arrived at celebrity. Knowledge is boundless and millions may march in its pursuit without the fear of interrupting each other by the way.

Nothing is more common than to hear of the great disparity in the capacities of different persons, and we are told that some are fitted for nothing. But the difference of talent in different individuals is far less than has ever been supposed. It is by

application, that one is exalted above another. Happily for mankind their different sorts of genius are nicely adapted to all kinds of enquiries. One becomes an astronomer, another acquires languages, a third becomes a celebrated mechanic, and so on. Each finds pleasure only in his favorite study, hence intellectual enquiries arise which assist each other, and expand observation to bounds unlimited. Volumes might be written on the mental management of children. How many are compelled to seek acquirements nature refuses to grant? Many in the humblest walks of life when left to their own choice have risen to great eminence, others with riches, good understanding, and every other advantage, have fallen into insignificance, merely because they applied themselves to the wrong pursuit.

To the science of mathematics we are indebted for the power to behold the great system of the universe, and by the aid of astronomy man is able to trace the courses of the heavenly bodies. doubtless the habitations of beings like ourselves. But the practical advantages of this science are more clearly demonstrated, in the mensuration of surfaces, solids, heights, and distances. By its vessels are conducted over the fathomless ocean, and the geography of countries is ascertained. It fixes the principles of perspective, and by the aid of drawing, the smiling landscape is placed upon the canvass, which when viewed carries us back to the scene whence it was taken. The beauty, comfort, and convenience of our dwellings depend upon the skill, of the architect, who is indebted to mathematics for all his fine proportions, and the symmetry his work displays.

The divisions of mechanical philosophy are too numerous to admit even of a cursory view, a few however may be mentioned, in reference to their great utility. Pneumatics treats of the air that invisible fluid which reanimates the body every time we breathe. By studying its laws the barometor was discovered, and an instrument has been supplied which not only foretels changes in the weather, but informs us of the height of mountains, by carrying it to their summits. As the pressure of the atmosphere was found to diminish as an ascent is made to any elevation, so the barometric column becomes lessened, and the height is immediately known. In conducting water to cities, pump-making, ascending in Balloons, curing diseases of the ear, and in music a knowledge of these laws is absolutely necessary.

Who is there that does not admire the mechanism of the human eye? The window of the soul, at which the thoughts and passions of the heart are constantly looking out. But perfect as this most important organ may appear, the study of optica has



vastly increased its power and enabled man to gaze upon distant planets. The telescope extends his vision among the remote heavenly orbs, and he seems to hold converse with other worlds. Again the microscope makes us acquainted with myriads of animals, not discernable by the naked eye, and opens a new creation to one of our senses. By its aid thousands of fish-like animals are seen sport ing in each drop of our blood, and the fluttering pulsations of the mosquito's heart may be distinctly recognised. Nor are the phenomena of magnetism and electricity less surprising. Who can explain the causes of that attraction which points the needle to the north, and faithfully directs the mariner amidst storms, and darkness, to his "desired haven?" By the use of the compass, the remotest continents and Islands have been visited, civilization and christianity have been carried to the savage—the nations of the earth have entered into intercourse, and commerce has spread its influence even to the polar seas. Of the recent discoveries in electro-magnetism it is impossible to estimate the result. Already a power has been obtained similar to that produced by steam, and the day may yet arrive when instead of Steamboats, vessels propelled by electro-magnetic force may traverse the wide atlantic.

Chemistry is the science which makes us acquainted with the natural bodies that surround us. Its objects are inexhaustible, and essential to our wants, and the very existence of civilization. Without its aid mankind would be deprived of most of their comforts and luxuries, and the mineral, vegetable, and animal kingdoms would remain unexplored. To the mechanic some knowledge of the sciences is indispensable. The success of the arts of metallurgy, glass-making, dyeing, bleaching. The processes of brewing, baking, distilling, and almost every domestic operation, depend upon some acquaintance with its mysteries. In the medical science it is of the first importance, and now forms a part of the physician's and surgeon's education. In the true meaning of the word, mechanics signifies the art of making machines capable of being put in motion, by natural or artificial means, and as such machines must ever be in common use, and are adopted to a great variety of purposes, it is evident that to understand the laws governing the matter acted upon, is absolutely necessary.

The Professor of Natural Philosophy in the University of Glasgow, sent a broken model of a steam engine to the chief mechanic of the establishment to be repaired. The model was that produced by Newcomen, and was extremely imperfect.—In the course of repair it fell into the hands of James Watt, a

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young mechanic, who to native ingenuity, had added a stock of scientific information. What was the result? The improvement may be called an original invention. From the broken model the mind of the mechanic brought forth an engine, which to use the language of his eulogist "is so regulated as to make it capable of being applied to the finest and most delicate manufacture, and its power so increased as to set weight and solidity at defiance. By his admirable contrivances it has become a thing stupendous alike for its force, and flexibility with which it can be varied, distributed and applied. The trunk of an elephant which can pick up a pin or rend an oak, is as nothing to it. It can engrave a seal, or crush masses of obdurate metal before it like wax—draw out without breaking, a thread as fine as gossamer, and lift a ship like a bubble into the air. It can embroider muslin, and forge anchors, cut steel into ribbons, and impel loaded vessels against the winds and waves." Now let us observe the effects of ignorance. I knew a young mechanic who discovered some improvement in the plan of chairs, and accordingly half a dozen were made for trial, and to present for the purpose of obtaining a patent. They were neatly made, finely painted, and altogether seemed very pretty, but there was one defect, when set upon their legs they would immediately tumble backwards. It is not upon the works of the hands alone we can depend, the mind must be employed and properly directed.

How often are the labors of some entirely lost, for the want of reflection and some fixed leading principles to guide them.—The hands can work and produce a piece of mechanism.—When a model has been followed this may be all that is necessary; but it is certain that no improvement in the model can ever take place, unless the mind by a due course of reasoning, first discover the imperfection, and then the remedy. A steam engine is capable of making a knife, but is not capable of making any improvement in that knife, because it is not possessed of intelligence. So it is with many men like the engine, they go forward in the same way as long as they live.

There is another class of persons who have heads, but no hands. They are ever inventing, planning, and amusing themselves with splendid discoveries. Their minds are always active, and they are called ingenious. But with all their deep thinking, and fine reasonings, they fail in producing any thing useful, and their time is lost in fanciful speculations. When the means of performing any important work is placed in their hands, they outreason common sense, and fail in the undertaking. In both these instances it is plain that

an acquaintance with mechanical philosophy would arouse the torpid, and restrain the over-excited. It must afford the practical mechanic much satisfaction to see the effects he often observes, explained by a reference to their causes, and to obtain a distinct apprehension of every thing connected with his art.— But we are often told that fine theories and mathematical calculations are useless, and that practical information, as it is called, only is necessary. Such is not the fact. They must be united before any work can be completed. Before the machine can be produced, there must be a model. That model may exist in a picture on the mind, or be made of solid materials.— Now the construction of the model requires a knowledge of science, while the mere labor is performed by the hands. Again. It is enquired by some what direct influence can science exercise upon the labor of the artist or mechanic? To answer the question, let it be supposed that you require a carriage for your comfort and convenience, and you apply to a workman to have one constructed. In the first place as you have never studied coach-making, you are unable to give a proper plan of the carriage you desire, and therefore the whole matter is confided to the person you employ. The mechanic measures accurately the carriage of some other gentleman (this is of every day occurrence,) and with some trifling alterations in the shape of the body, color of the trimming, &c. finishes the work, which from its appearance you are pleased with. Here nothing more has been than to imitate. Perhaps the model copied was very imperfect,—your axles may be so small that on your first excursion they will break down. They may be so large, and consequently the friction so much increased that your horses are jaded and you wonder at the cause. The springs may be so inflexible as to make the seats uneasy, they may be too yielding and break, and what is the cause of all these difficulties? why only this. Neither the employer, nor the employed, knew enough of gravitation, motion, friction, and elasticity to build a coach. Cases of this kind might be multiplied. And the object of this Institution is to impart the information which will afford a certain remedy for such evils.

To agriculture the sciences are of vast importance. The fertility of the soil does not depend upon the presence of any one substance, but upon an admixture of the different earths, alkalies, and acids. By chemical analysis connected with mineralogy, each ingredient is examined, defects discovered, and means supplied to promote the growth of plants. The farmer should be made acquainted with vegetable physiology, and carefully study the nature and peculiarities of the plants he cultivates. Otherwise, how can it be expected they will thrive under his culture? He may cast the seed upon the earth, and be comforted with the prospect of a crop. But unless his labors are directed by knowledge, he can never be cheered with a plentiful harvest.

When a view is taken of the disorders of natural philosophy, and

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we consider the discoveries and improvements daily advancing in their departments, it appears evident that just in proportion as the absolute wants of man increase so, the Creator of the Universe is pleased to reveal that knowledge which alone can supply them. When the population of a country becomes too great to be supported by its agriculture; discoveries are made in the arts, manufactories rise, and a due reward is given to industry. When a more ready communication is necessary to promote commerce, and the productions of art, the mighty powers of steam are developed, and a freer circulation is opened to meet the exigencies of the times.

It would be arrogant to attribute these improvements to the perfection of our education, or the strong efforts of our understanding. They are wisely introduced by an intelligent and benevolent Being, to whom we are indebted for all the blessings we enjoy.

When the attention is turned to Natural History, I trust I will be pardoned in affirming that by far the most important branches are mineralogy and geology. If the few departments of knowledge already referred to, are so productive of beneficial results, surely those which reveal the hidden treasures of the earth should not be overlooked. Transported with delight, the astronomer points his telescope to the new born planet, and wanders among the bright luminaries of the heavens; and well do his labors merit reward as he penetrates farther into the work of a boundless creation.

But that science which directs the geologist into the deepest recesses of the earth, abounds in facts still more remarkable, and of far greater importance to mankind. Far beneath the surface of the earth lie buried, myriads of once animated beings. In the lower strata the first dawning of animal life begins to appear; as we ascend these animals increase in proportion, and in the multiplicity of their organs. Family after family of these have become extinct, and more recent tribes are buried upon them. These were succeeded by enormous lizards forty feet in length, and flying reptiles of gigantic size. Forced from existence by changes ever going forward upon the earth, they also in their turn were doomed to perish without leaving a solitary living successor. Then the majestic Hippopotamus, Elephant and Rhinoceros stalked abroad, and droves of Hyenas, Bears, and Jackals, prowled amidst groves of palms and cedars far more lofty than the present growth. The bones and other remains of these animals, found sealed in the massive rock, clearly shew the mighty revolutions that have taken place upon this planet. Shaken by tremendous earthquakes, and overspread by torrents of liquid lava, the earth then offered no resting place for human beings. But a more calm and tranquil state succeeded, the sea had its level fixed, and continents rested above the bosom of the waters. Then man became its Lord, and, endowed with immortality, first bore the image of his Maker.

The practical advantages arising from a study of these sciences are incalculable. When coal is considered in reference to the production of steam, its importance to the safety and prosperity of nations can scarcely be estimated. The power now derived from steam and applied to move machinery in England alone, is estimated to be equivalent to the labor of four hundred millions of men, and Dr. Buckland justly remarks that "we are astounded at the influence of coal, and iron and steam, upon the fate and fortunes of the human race."

It is almost unnecessary to mention the value of lead, copper and other mineral substances. For the utility of those enquiries which discover and apply them must be apparent, especially in a Province where they are now known to exist, but are still imported from other countries.

The study of Provincial botany and conchology has been neglected, and a

wide field is open for the labors of those who have a taste for such pursuits.— Our forests abound in beautiful flowers, and indigenous plants, and it is a pleasing employment to gather them fresh from the bosom of the earth.

The ornithology of this country is extremely interesting. During the summer months birds of gay plumage, and delightful song, pay us their annual visit. From this department of natural history, none who enquire can fail to observe how nicely the organs of each species are adapted to the habits and character of each individual. Some of the diving tribes are furnished with diving bells. A strong membrane is suspended under the throat, and before a dive is made, inflated with air, which supplies the lungs after the bird has descended beneath the water. I have recently found that the guinet, or soland goose has its skin attached to the body only at a few points. Before the bird rises to fly, the skin is distended from the body by air drawn in through the mouth; and the animal like an inflated balloon is rendered buoyant, rises with facility, and flies away.

Without this remarkable apparatus he would with his narrow wings be unable to ascend. The duck is provided with paddles. The heron, and the whole family of waders have long legs, necks, and beaks, all admirably adapted for obtaining their food without wetting their bodies. The wood-pecker is armed with a bill of horn, and the barbed lance at the end of his tongue firmly secures the hidden fly. These things may seem extremely simple but they afford the most ample testimony of the power, wisdom, and goodness of that almighty Being, who has abundantly provided for the wants of all his creatures.

The advantages derived from any enquiry, are not confined to the immediate effects of that enquiry upon the mind. They extend much farther, and expand the intellectual powers to receive other supplies and enlarge the capacity beyond its ordinary limits. They rectify the understanding, and sharpen the appetite for light and truth. Happily the acquirement of knowledge is within the reach of all, and the precious boon will be denied to none, who industriously seek its attainments.

To disseminate useful knowledge among all classes of society, with a view to improve their moral habits, and excite every laudable feeling of emulation in the breasts of those into whose hands much of our property is often placed, and upon whose skill many of our comforts depend, is as important as the possession of knowledge among ourselves. A plan that will place within the reach of all that will receive them, the means of becoming wiser, better, and happier, calls loudly upon our benevolence, and the labor devoted for this purpose, should it be effective on mechanic's only, will return a great reward. Persons who from their greater advantages, have secured more than an ordinary share of literary or scientific knowledge, should here unlock their stores and exchange before the Institute those intellectual goods which are most valuable when given away.

No improvement, or invention is too simple to be denied admittance here.— Who can supply the best model of a ship, a cottage, or a coach, are questions often asked in this city? In future may the answers be given by our committees.

For the accomplishment of these objects have the most respectable, talented and influential individuals of this city been called upon, and the summons has not been sent in vain. Moved by a kindred impulse, they have applied themselves to the work, and St. John can now boast of a more powerful body, composing her Institute than ever assembled before for a similar purpose in any of the British Provinces.

And need we be reminded that much of the success of every benevolent enterprise, depends upon the support it receives from the fairer, and better half of all communities. Who are they that calm the troubles incident to life, and sooth the victim of distracting care. Who watch over childhood, and soften the pillow of the dying. They are our wives, our mothers, sisters, and daughters. Commenced under the most auspicious circumstances, and greeted like the dove bearing the olive branch to the ark: this Institute will flourish, and long after your names have faded from its records, will the philosopher and philanthropist rejoice over your works, while the humble artist will shed the tear of gratitude in commemoration of your benevolence.

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