

have been exhausted, they may be renewed again. She will teach the farmer by draining to draw off the superfluous moisture from his fields, to supply those component parts to the soil which are needful for the sustentation of the vegetable productions. She will tell him at what season each different kind of seeds may with best effect be committed to the ground, and what kinds of grasses, grains, or plants will be found most productive. She will teach the use of various implements, which will greatly assist in lessening both his labour and expense, and in company with economy and diligence, will guide to a life of comparative comfort and independence.

6. If others delight more in contemplating animated nature, *Zoology* will go with them over the plains, the forests, and the mountains of earth, and describe them to them the forms, habits, and peculiarities of the different tribes of animals, which have their dwellings there: *Ichthyology* will conduct them to the rivers, lakes, and oceans, and gather forth from the watery element an exhaustless variety of fish, from the smallest trout that swarms in the brook, to the whale which sports in the frozen ocean, and the alligator which haunts the mighty streams of Egypt and Asia. *Conchology* will lead them along the ocean shore, and teach them to pick up a countless multitude of shells, exhibiting an astonishing variety of form, with an equally admirable diversity of beauty; while *Ornithology* will direct their attention to the heavens, and teach them to observe the birds of the air, to mark the rich variety of colours which decorate their plumage, and to listen to the equal variety of note which the feathered songsters emit, while they render the whole air melodious with their songs.

7. If others prefer studying the internal structure of the bodies either of men or of the lower animals, *Anatomy*, human and comparative, will take its knife, and uncover to his astonished eyes wonders of creative wisdom displayed in the mechanism of the bones, the actions of the muscles, the disposition of the veins and arteries, and the adaptation of the different parts of the body to the purposes for which they were intended, as well as in the singular conformation of the body of each distinct species of animal, suitable to its habits and mode of living.

8. If others again prefer to learn the means by which the injuries and diseases of which man's body is liable, may be healed *Chirurgery* will instruct them in the operations to be performed, and the applications to be made, while *Medicine* will teach them the various substances, animal, mineral, and vegetable, which are useful for alleviating pain, removing disease, and restoring to health and strength.

9. If others again feel a deeper interest in examining the component parts of matter, *Chemistry*, with its various agents and re-agents, will enable him to analyse compounds, and to resolve them into their elements. It will teach him the properties of each element apart, show him the diversified combinations into which each can enter, and enable him to distinguish the separate classes to which they belong, as gases, acids, alkalies, earths, metals, salts, &c., pointing out the way of obtaining each, and the use to which it may be applied.

10. If any prefer carrying their researches downwards into the bowels of the Earth, *Mineralogy* will conduct them thither, point out the various strata of materials which lie to some distance below the surface, lead them to the repositories, in which the metals, precious stones and other minerals lie concealed, and teach him how to bring them forth, and render them fit for use or ornament.

11. If others prefer speculating on the mode of the earth's formation and the different changes which it has undergone since the day that it came from its Creator's hand—one dark chaotic mass—*Geology* will open up to them a wide field for speculation, exhibit to them many striking and interesting facts, as foundations on which to build their theories, or starting points whence their imaginations may take its flight into the regions of boundless conjecture.

12. If others again would search into the reason which makes the magnetic needle point to a particular part of the heavens, or what is it that sends the lightning up to the clouds, how it is that light bursts forth from its flash, and what causes those tremendous peals, which shake the very earth, as the thunder cloud in its majesty rolls over our heads; or how that fluid, so powerful in its operations, and so quick in its movements, can be brought under the control of man, and made subservient to his purposes:—*Magnetism*, *Galvanism*, and *Electricity* will unite to bring him acquainted with the laws and facts, which the ingenuity of man has collected from observation and experiment.

13. If any prefer soaring upwards, and making the clouds or upper regions of the air the subject of their study, *Meteorology* will mount with them thither, teach them to observe the diversified forms of the clouds, the phenomena of the thunderstorm and tempest, the transitory flash of the meteor or falling star, and the changing colors and fitting aspects of the Aurora Borealis.

14. If any wish to take a yet higher flight, and rise above the clouds, and beyond the confines of this sublunary sphere, to the countless orbs which roll through boundless space, *Astronomy* will accompany him in his trackless journey to distant worlds; and if his feeble eyesight cannot follow her in her lofty range, she will call in the aid of *Optics* to assist the frail companion of her way, and by the aid of properly arranged glasses, and highly polished Mirrors, she will carry his

view to distances, which the mind of man labors feebly even to conceive. As he journeys in her train, she will point out to him the planets with their attendant satellites or moons, performing their incessant circles round their central suns, the comets in their erratic course, at one time approaching within a short distance from us, and than flying off into the void of space beyond the reach of the strongest instruments that human ingenuity has yet been able to contrive; and then she will exhibit to him a multitude of fixed stars, too great for man to number, each of them the centre of a system of worlds, and thus will fill his soul with admiration at the infinite extent of the Creator's dominion.

15. If others again would rather investigate the means by which human power may be increased, and the necessity of human labor diminished, *Mechanics*, with its levers and pulleys, its wheels and axes, its inclined planes, wedges and screws in endless diversities of combination, will furnish him with the aid he requires to any extent, and teach him how to construct machines capable of executing any kind of work, from the watch that marks the silent progress of time, to the mill which grinds his corn, or cuts his wood, or spins his cotton.

16. If any prefer investigating the sources from which power may be obtained for giving motion to this machinery, without the application of human strength, or the tiresome drudgery of inferior animals, *Pneumatics*, with its windmill sails, and *Hydraulics*, with its water-wheels and water-presses, will furnish him with abundance of power for giving motion to any machine; or *Steam*, with its expansive powers, will now wait on his orders, and execute with pleasure any commission. So diversified are the uses to which this last power can be applied, and so easily can its tremendous powers be regulated, that there is no work too fine for it to execute, no resistance too powerful for it to overcome. To use the words of Lord Jeffrey:—"The trunk of an elephant, that can pick up a pin or rend an oak, is nothing to it. It can engrave a seal, and crush masses of obdurate metal like wax before it; draw out, without breaking, a thread as fine as gossamer, and lift a ship of war like a bauble in the air. It can embroider muslins, and forge anchors; cut steel into ribbands, and impel loaded vessels against the fury of the winds and waves."

17. If others have a greater taste for building, and wish to know the best and neatest form of constructing edifices, either as dwellings for private families, as places of meeting for large assemblies, or as palaces or public monuments, on which wealth, grandeur, and magnificence may lavish all their decorations, *Architecture* will furnish them with a rich variety of models, from which Taste may make its selection. She will exhibit the chaste architecture of Greece, with its different orders; the Saracenic, with its profusion of sculptured ornaments, and its minarets, or small slender towers surmounted by a dome; or the Gothic, whose chief characteristics are its pointed arches, its pinnacles and spires, its large buttresses, its heavy, clustered pillars, and its vaulted roofs; from which he may obtain plans suitable for every purpose, and answerable to every diversity of taste; while *Statuary* will teach him how to draw forth from wood, or stone, or metal, the forms of the great and the good, and thus hand down their memorials to future generations.

18. If others are more pleased in beholding natural objects represented by means of judiciously-arranged colours, *Painting*, aided by *Perspective*, will teach him to convey to paper or canvass, the forms of what he sees around, so that the beautiful landscape, the gorgeous palace, the lofty temple, the crowded city, with all the varieties of animal life, and the diversities of human passion and action may be exhibited to the eye of the beholder, with all the freshness and the distinctness of seeming reality; so that the poet did not exaggerate when he spoke of

"The painter's magic art

Which shows us that which we shall never see,

Conveys a distant country into ours,

And throws Italian light on British walls."

19. If others again are more charmed with dulcet sounds, *Music*, with its harmony, will gratify his ear with every variety of note and cadence; and if it has now lost the power which it is fabled to have possessed in the days of Orpheus, who could lead the listening rocks and trees along to the sound of his flute, or

"When stones, at sweet Amphion's call,
Danced into form, and built the Theban wall,"

yet it still has power to soothe the mind, and communicate the richest enjoyment.

20. If others prefer the study of literature, *Grammar* will teach them the properties of language; *Logic* will instruct them in the art of reasoning correctly; *Rhetoric* will enable them, by the use of various figures of speech, to enrich their style, and adorn it with numberless graces; *Criticism* will teach them how to judge correctly of the productions of others; and *Poetry* will unfold the language of the passions, and teach to combine harmony of numbers with elegance of numbers, and thus show how to please as well as to instruct.

Thus you see the field that is presented to us is extensive, and from each department much useful information may be drawn. It is true the Lecturers who are to address you, may not have made these sciences the study of their life; we may have now amongst us no Professor Johnstone or Low to lecture on Agriculture, no Professor Airy, or Mons. Arago to direct our telescopes to the heavens,

and name to us each star as it rolls; no Sir David Brewster or Professor Playfair to unfold the laws of Natural Philosophy; no Dr Black or Sir Humphray Davy to explain the secrets of Chemistry; no Dr Fleming or Buffon to trace the Natural History of our Province, yet there was a time when Johnstone, Low, Airy, Arago, Brewster, Playfair, Black, Davy, Fleming, and Buffon, were as unknown to fame as any who are now before me. Only let the youth of New Brunswick give the same well-directed attention to different departments of Literature and Science as those honored names from the old world have done, and some of them may also fill as high a niche in the temple of Fame. But till these sons of science rise up amongst us, we will trust the humbler efforts of as willing though not so well qualified Lecturers will meet with your kind acceptance.

It is an important and useful object that this Institution has in view in the general diffusion of knowledge, and we trust therefore the Institution will meet with the support which it deserves. Nothing contributes more to the welfare of a country than the extent of intelligence and mental culture possessed by its inhabitants. When knowledge is diffused, a great advantage is obtained, both in regard to the physical and moral welfare of the people.

In regard to the physical advantages which an increase of knowledge gives, there can be little doubt. It is long since Bacon declared that knowledge was power; and surely it needs not now a mind so highly gifted as Bacon's was to be able to demonstrate the truth of such an aphorism. Who knows not that by a little knowledge of the mechanical powers, one man would be able to overturn, or even to raise up a heavy body, which ten savages, though possessed of superior strength, but destitute of mechanical skill, would not be able to move? Who knows not that by means of machinery lately introduced into the cotton spinning, the work of thirty men can now be done by one? Who knows not that by the introduction of steam power, our carriages can now be impelled over the land and our vessels over the sea, with a rapidity and regularity unequalled—unthought of, till it was exhibited in actual experiment? Who knows not what wonders have been wrought by Electro-magnetism, by which thought is now conveyed from land to land with the rapidity of the lightning's wing, so that in many places friend can sit down and converse with friend as if they were in the same room, though separated by thousands of miles, and I hope it will not be long ere the inhabitants of Chatham, Douglastown and Newcastle will be enabled to carry on correspondence with their friends in Halifax, St. John, Boston, or even California; and perhaps the day may not be far distant, when they can do the same with those in Britain, nay, throughout the world.

There are continual additions making to man's physical power in all the departments of Arts and Science. Almost every day new inventions are discovered for lessening labor, and thus enabling the products of industry to be obtained at a cheaper rate, and unless we seek to keep up with the acquisitions of the age, we shall be altogether unable to cope with our neighbors, and consequently must retrograde in the possession of the conveniences, comforts, and elegancies of life.

But improvement in Arts, Literature, and Science, has also a natural tendency to promote the moral welfare of mankind. A state of ignorance has always an adverse tendency in regard to man's moral state. It is in the rank soil of ignorance that pride and arrogance, selfishness, cruelty, and vice of every species flourish most luxuriantly. Science, on the contrary, has a tendency to humanize. It polishes the manners, promotes benevolence, leads to union and harmony, and thus contributes to social comfort, the stability of government, and the advancement of the best interests of man.

No nation has ever attained to eminence, where intellectual improvement has been neglected; while comparatively small states, where Science was cultivated, have risen to greatness, and assumed a superiority over far more extensive realms, which gave not the same attention to learning. What was it, for example, that enabled the petty states of Greece to contend with and vanquish the invulnerable squadrons of Persia's mighty empire? It was the intelligence of their inhabitants, fostering their patriotism, and directing its efforts. What was it that has rendered the history of Greece a subject of study in all civilized nations? It was just the light which was diffused through the inhabitants by those torches, which shone so bright in the Lyceum, the Porch, and the Academy.

To what is it that Britain owes her greatness, so that that small isle of the sea has been enabled to stretch forth her wings so wide, and establish her colonies on so many distant shores, and maintain such influence among the far more extensive governments of Europe, but to the industry, and intelligence, and learning of her inhabitants?

Hence wise Legislators have ever sought to promote the extension of Education, and the cultivation of Literature and Science among their subjects. Hence they have endowed Colleges, founded Libraries, and given encouragement to men of learning, as the best means of advancing the true interests of their subjects, and of promoting the glory of their reigns, and history has borne evidence that such means have been eminently successful; and hence in the present day men of the highest talent, and rank, and influence are giving their countenance to such Institutions as the present. In Halifax, in St. John, and in various parts of the British Provinces, there are now Mechanics' Institutes, countenanced and

supported by men of the highest talent and influence among us; and it is gratifying to find no less than three such Institutions begun so auspiciously on the banks of the Miramichi. It is my sincere desire that they may all flourish. They are not rival Institutions. They are sisters, and coadjutors, and the welfare of one depends on the continued welfare of the other. It will therefore afford me the greatest pleasure to see this, the eldest of the sisters, continuing to progress in strength and usefulness, and I hope that nothing may occur to break the bond of harmony which now unites the three Institutions together. Without mutual co-operation, neither of us can succeed, and as we have found the members of the Chatham Institute always willing to assist us, so I trust they will always find us, on our part, willing to reciprocate. I am only sorry our powers are yet so small; but if you will bear in mind that we are only amateurs, and that the subjects on which we have to lecture before you, do not properly belong to the professions of any of us; if you can pardon our deficiencies, and encourage our well-meant, though feeble efforts to please, we may gradually improve, or at least a succeeding race of Lecturers may afterwards arise, who will not need so strongly to plead for your kind indulgence.

Colonial News.

New Brunswick.

In a former number we adverted to the purchase by Messrs. Allison & Spurr, of this city, of the rich mine of Bitumen discovered in Albert County, by Mr. Duffy, for the sum of £5000. We have since been informed that Messrs. Allison & Spurr merely purchased Duffy's right in a Government Mining Licence to dig Coal, Gold, Silver, &c., but not Asphaltum, which the deposit proves to be, and of very rich quality. Subsequently, the owners of the soil have disposed of their right for a valuable consideration, to Dr. Gesner, for a Mining Company in New York, with a large capital, who purpose working the deposit on an extensive scale, so soon as the season will permit. They also intend opening a vein of soft Asphaltum in the spring, which has been recently discovered at Dover, in the County of Westmorland. The outlay of capital which this company will bring into the country cannot fail to be highly beneficial, and we wish the enterprise every success. It will be remembered that the beautiful Kerosene Gas, now attracting so much attention in the United States and elsewhere, is manufactured from Asphaltum, through the means of Dr. Gesner's patent Retort.—*New Brunswick.*

Important to New Brunswick.—A correspondence has just taken place between the Hon. Mr. Merritt and the Board of Trade in Canada, on the subject of public works. The President of the Board in the course of his remarks, observes—"that hardly any advantage would accrue to the construction of a Canal to connect the waters of the St. Lawrence with those of the St. John. Here then, is cold water thrown upon the up river scheme, from a very influential quarter, which will have the effect perhaps, of disturbing the men now at work in clearing out the stones, and damming up the river above. Our Legislators will learn from this, that the Canadians see no advantage to be gained" by connecting the Saint Lawrence and Saint John rivers.

The President of the Board of Trade, however, is warm for cutting the canal at the head of the Bay, to connect the Bay of Fundy with the Gulf. He says—"of the immense importance of the Canal to connect the Saint Lawrence with the Bay of Fundy, there are hardly two opinions, and certainly our government should lose no time in drawing the attention of the Government of New Brunswick to the matter."

Our Legislature has already voted, if we mistake not, £10,000, to be expended in five years, to render the St. John navigable above Fredericton; and if report speaks correctly, the work so far done, promises that the undertaking will be a most costly one—in fact it is throwing money away.

The following extract from the Board of Trade Report, will show the feeling in favor of the Canal at the head of the Bay—

"The trade of the Eastern coast of the United States and the West Indies, will render this communication mutually advantageous to St. John and Quebec, and and it is submitted for the consideration of the Board, whether an effort should not be made at this moment, to induce the trade in St. John to petition their Legislature to construct the work as soon as practicable."

What say the Chamber of Commerce in St. John? Suppose they originate a petition to the Legislature in furtherance of the Canadian wish? We believe that the Canadians would pay half the cost, inasmuch as they say that the opening of this Canal would be of greater benefit to the trade of Canada than to the trade of St. John. At present they have to go round Cape Canso, a thousand miles out of their way, to get to the United States and the West Indies. "As to the probable return in the shape of Tolls, the Council of the Board of Trade are persuaded that it would pay an ample on the expenditure required."—*Morning News.*

Canada.

There is now building in Quebec a ship which will be the largest merchant vessel afloat. Quebec has three newspapers published in English and three in French and