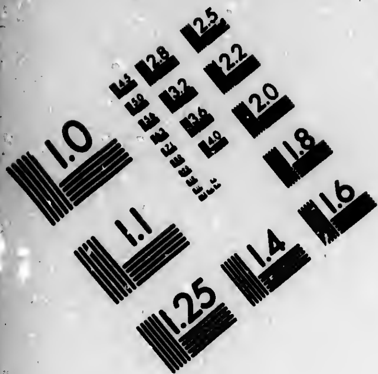
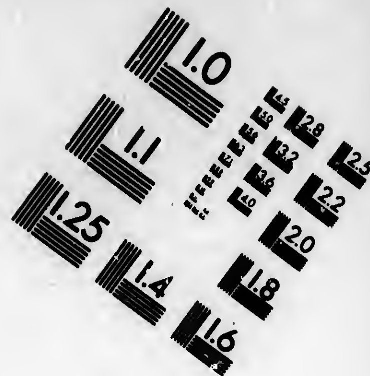
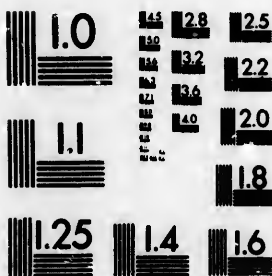
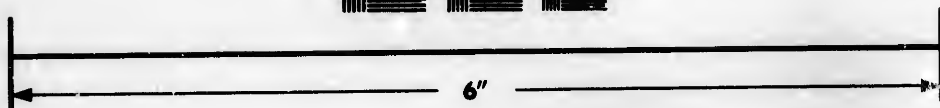
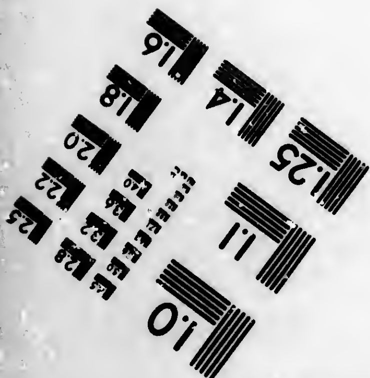



IMAGE EVALUATION
TEST TARGET (MT-3)



Photographic
Sciences
Corporation

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

CIHM/ICMH
Microfiche
Series.

CIHM/ICMH
Collection de
microfiches.

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1985

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- [ ] Coloured covers/ Couverture de couleur
- [ ] Covers damaged/ Couverture endommagée
- [ ] Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- [ ] Cover title missing/ Le titre de couverture manque
- [ ] Coloured maps/ Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- [ ] Bound with other material/ Relié avec d'autres documents
- [ ] Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- [ ] Additional comments:/ Commentaires supplémentaires:

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [x] Showthrough/ Transparence
- [ ] Quality of print varies/ Qualité inégale de l'impression
- [ ] Includes supplementary material/ Comprend du matériel supplémentaire
- [ ] Only edition available/ Seule édition disponible
- [ ] Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
				✓							

The copy filmed here has been reproduced thanks to the generosity of:

Seminary of Quebec
Library

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol —► (meaning "CONTINUED"), or the symbol ▼ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

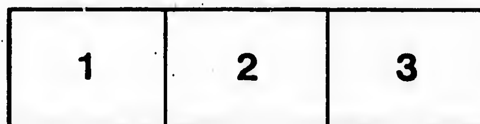
Séminaire de Québec
Bibliothèque

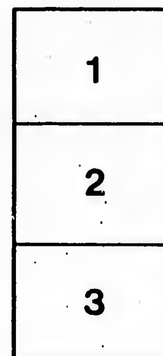
Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

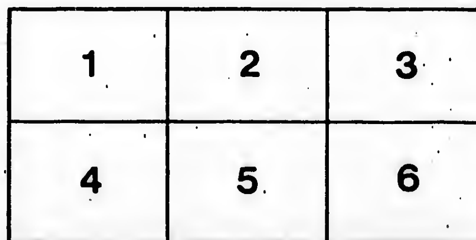
Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole —► signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.







2 1 | arts et Métiers No 6.

1800 AND 1850.

A LECTURE,

DELIVERED BEFORE THE

MONTREAL MECHANICS' INSTITUTE,

ON

TUESDAY EVENING, JANUARY 8, 1850.

BY

REV. J. M. CRAMP, D.D.

Bibliothèque,
Le Séminaire de Québec,
3, rue de l'Université,
Québec 4, QUE.

Montreal:
PRINTED BY ROLLO CAMPBELL.

1850.

1800 AND 1850

A LECTURE

DELIVERED BEFORE THE

MONTREAL MECHANICS' INSTITUTE

ON

TUESDAY EVENING, JANUARY 8 1850

BY

REV. J. M. CRAMP, D.D.

Montreal:

PRINTED BY ROLLO CAMPBELL.

1850.

1800 and 1850.

A LECTURE,

(Delivered before the Mechanics' Institute, January 8, 1850.)

BY THE REV. J. M. CRAMP, D.D.

In reviewing events, men are singularly affected by their various temperaments. The melancholic see every thing in a dull and dusky medium. They are ever looking back with ill-suppressed murmuring. The times, they say, are getting worse and worse :—mankind are sinking into degeneracy—manners are depraved, and crimes increase. Present evils are magnified by them, and existing advantages disparaged. In vain do you labour to rectify their judgments. To your opinions, they oppose their own experience. They have long observed the gradual decline, and they can see nothing else in any direction. This is not new :—it is a mental disease of old standing. Nearly three thousand years ago it was said, "Say not thou, What is the cause that the former times were better than these? For thou dost not enquire wisely concerning this."

The sanguine contemplate the same events, but not with similar emotions. With them, all is sunshine. Where others see nothing but declension, they behold progress. While all around are penetrated with apprehension and alarm, hope tells to them her "flattering tale," and gives buoyancy to their spirits, and vigour to their efforts. The prospect is always bright. They love to talk of progress and improvement, and are skilful in devising schemes by which society may be benefited. Their interpretation of events is sure to be favourable. Every degree of success is viewed as a triumph, and failures are regarded as only temporary checks, soon to be removed out of the way, and but slightly interfering with the grand result. In a word, the melancholic and the sanguine are very common varieties of human character, and individual specimens are continually presenting themselves to notice. We are not called upon now to judge between them, and will therefore only remark, that whatever cause may exist for the

gloom which encircles the former, and however justly a thoughtful man may sometimes conclude that the times are out of joint, it is wiser and more conducive to happiness to adopt a charitable construction, and indulge in the visions of hope; and it may be fairly argued that, all things considered, the melancholic is less likely to be a useful member of society than his sanguine neighbour;—for the sad musings of the one are apt to lull him into slumber, while the enthusiasm of the other impels him to "expect great things, and attempt great things,"—and the success of the attempt is often found to be strikingly proportioned to the extent and boldness of the expectation.

It may be serviceable to both classes to take a survey of events at distant periods, in order that, contrasting the state of society at the commencement of a given era, with its state at the close, a more correct estimate may be formed. A suitable opportunity is now furnished for such an exercise. We have entered on the closing year of the first half of the nineteenth century. A review of the fifty years will be appropriate and instructive.

It must not be supposed, however, that it will be possible on this occasion to present anything like a complete survey—for the field is too extensive, and the multitude of objects too great. In some respects, too, I might be in danger of trenching on the limits prudently set to your discussions:—such an error I should be most scrupulously anxious to avoid. It will be proper, therefore, to observe that I shall only take a very cursory notice of the general history of the period, purposing to direct your attention, especially, to matters connected with science, literature, and social progress.

At the opening of the year 1800, Buonaparte was First Consul of France. Four years after he became Emperor, and for ten years nearly all Europe was swayed by him, its respective kingdoms being subjected to his influence, or made to feel the power of his arms. It might be said of him, as of Nebuchadnezzar, the proud King of Babylon, "Whom he would he set up, and whom he would he put down—whom he would he slew, and whom he would he kept alive." Fearful were the ravages he committted, and terrific the waste of human life occasioned by his insatiable ambition. The fairest portions of the old continent were desolated by his armies. The forced conscription, deluging France with misery—and the battle-fields of Marengo, Austerlitz, Jena, and Waterloo—together with the blood-soaked plains of Russia, attested his implacable fierceness, and the reckless determination with which he pursued the object in view, *coute qu'il coute.* His abdication restored peace to Europe, and that peace was undisturbed, with slight variations, till 1848, when the third French revolution, (the second took place in 1830, when Charles X. was expelled, and Louis Philippe

substituted in his place,) was followed by kindred movements in Germany and Italy, the issues of which are not yet developed.

The actual and relative position of the European States is much the same now as in 1800. The principal differences are—the division of the Netherlands into two kingdoms—the separation of Hanover from the British Crown, which took place on the accession of Victoria, the laws of that kingdom not allowing female sovereignty—some unimportant changes in the territories of the Italian States—and the loss, by Spain and Portugal, of their possessions on the American Continent, the result of which was the establishment of the Empire of Brazil, and of numerous Republics. Greece, also, has been separated from Turkey, and erected into an independent kingdom.

The British Empire, since 1800, has received considerable accessions. Malta was conquered in 1800; British Guiana and St. Lucia in 1803; the Cape of Good Hope in 1806; and the Mauritius in 1810. Our Australasian dominions have been enlarged by settlements in Van Diemen's Land, New Zealand, and South and West Australia. In India, extensive territories have been added, chiefly in the North-western portion of that country; while China, humbled by our power, has opened five ports to free commerce, and consented to permit the settlement of Europeans and Americans in those parts, whence the science, arts, and religion of the Western world will be diffused throughout that vast Empire.

On this Continent, also, great changes have taken place, mostly occasioned by emigration from Europe. Reserving all notice of Canada for another part of this Lecture, it may be mentioned that in 1800 the population of the United States was under 5½ millions: it is now more than 21 millions. The following States have been admitted into the Union within that time, viz.: Ohio, Indiana, Louisiana, Mississippi, Illinois, Alabama, Missouri, Florida, Michigan, Arkansas, Texas, Iowa, and Wisconsin. From the recent addition of territory ceded by Mexico, including California, important results may be expected, embracing in their range all maritime countries, since the Atlantic and Pacific Oceans will ere long be united, and a new route will be opened to China and the East, which will effect a complete revolution in the commerce of the world.

Of the crowned heads and princes of Europe, there is but one now surviving who had begun to rule in 1800—the Prince of Lippe Schaumburg, one of the Princes of the German Confederation, whose dominions are so small that the number of his subjects is considerably less than that of the present population of this city. He succeeded to the Principality in 1787, being then little more than two years old. The senior in point of age is the king of Hanover, who is in

his 79th year;—the junior is the prince of Waldeck, who is in his 19th. There are fifty chief rulers of the European States, twenty-six of whom have been born since January 1, 1800. Four of them are females—the Queens of Great Britain, Spain, and Portugal, and the Duchess of Anhalt-Cothen. Between 1800 and 1850, ten sovereigns were deposed or induced to abdicate, either under the influence of a superior power, as in the cases of those who were displaced by Buonaparte,—or in consequence of misrule, goading the people to resistance, and issuing in revolution—of which Charles X. and Louis Philippe were the most striking examples.

It is impossible to give a full catalogue of the many individuals from whose writings, actions, or influence, the countries in which they lived, and in some instances the world at large, derived benefit, and who were living in 1800, but have since died. Selection, too, may seem invidious; yet it may be proper to mention some of the most illustrious names. Since the commencement of the period now under review, the following persons, eminent in their respective departments, have finished their course, viz.: *Statesmen,*—William Pitt, Charles James Fox, Edward Burke, Sheridan, Lord Erskine, Grattan, Curran, Whitbread, Sir Samuel Romily, Lord Holland, Canning, Huskisson, Sir James Macintosh, Lord Sydenham, and the Earl of Durham. *Naval and Military Warriors:*—Sir Ralph Abercrombie, Lord Nelson, Earl St. Vincent, Lord Duncan, Lord Collingwood, Sir John Moore, Lord Hill, and Lord Exmouth. *Scientific men and Artists:*—Sir William Herschell, La Place, and Lalande, all first-rate astronomers—Dr. Priestley, celebrated for his researches in Electricity and Chemistry—Lavater, Sir Joseph Bankes, Cuvier, famed for his skill in comparative Anatomy and Palæontology—Cavendish, Sir Astley Cooper—the Chemists, Sir Humphrey Davy, Woollaston, and Berzelius—the travellers, Mungo Park, Belzoni, and Dr. Edward Clark—Watt, the great improver of the steam engine—Canova, Benjamin West, Sir F. Chartrey, Sir Thomas Lawrence, Wilkie, Rennie, and Stephenson. *Authors:*—the Poets Cowper, Henry Kirke White, Bloomfield, Byron, Pollock, and Keats—Sir Walter Scott and Robert Southey, distinguished both in prose and verse—the historians, Roscoe, Niebuhr, Sismondi, and Sharon Turner—the critics, Porson and Parr—Lindley Murray, the grammarian—Coleridge, Schlegel, Charles Lamb, Dr. Arnold—among the divines, Bishops Horsley, Porteous, Heber, and Middleton, Doctors Paley, Adam Clarke, Burton, Dwight, and Chalmers, and Messers. Andrew Fuller, Robert Hall, John Foster, John Newton, and Richard Cecil—and the female writers, Madame DeStael, Mrs. Trimmer, Hannah More, and Mrs. Hemans. *Philanthropists:*—Granville Sharpe, Zachary Macaulay,

William Allen, Oberlin, William Wilberforce, Thomas Clarkson, and Sir Thomas Fowell Buxton. *Missionaries:*—Henry Martyn, Dr. Carey, Dr. Vanderkemp, Dr. Morrison, the martyr Williams, and William Knibb.

I proceed now to glance at the discoveries, improvements, and social progress, by which the last half century has been distinguished.

1. DISCOVERIES.—It has been an age of bold and untiring inquiry. Taking full advantage of the investigations and conclusions of their predecessors, the philosophers of the nineteenth century have pushed forward their researches with a persevering ardour which has been richly rewarded.

Adverting, in the first place, to *Astronomy*, it is obvious to remark, that the brilliant discoveries of Sir Isaac Newton and others, in the seventeenth century, and of Sir William Herschell towards the close of the eighteenth, seemed to leave little room for further developments. But it is as yet too soon to define the limits within which the human mind may be circumscribed. Astronomers have soared higher and higher, and penetrated deeper and deeper into the arcana of space. In the early part of the period we are now reviewing, four smaller, or ultra-zodiacal planets were brought to light, which received the name of Ceres, Juno, Pallas, and Vesta; and in the latter part, the number was increased by the addition of five more, named respectively Flora, Iris, Metis, Hebe, and Astræa. The observations of Sir John Herschell in the Southern Hemisphere have added largely to astronomical knowledge; and the employment of improved instruments has enabled him and other astronomers to discern heavenly bodies hitherto unknown—to detect clustres of stars where nothing but cloudiness, apparently unresolvable, had been observed before—to discover, and accurately register the motions of orbs which has been regarded as fixed—and to introduce to notice additional comets, as well as to ascertain with greater precision the laws by which they are controlled, and the times of their respective revolutions. Besides these particulars, the discovery of a new planet, since termed *Neptune*, far beyond the limits of our system, as previously known, is of itself sufficient to dignify our age, and to immortalize the men, to whose calculating skill and sublime generalisations this discovery is due.

Geology may be next mentioned. William Smith, the father of modern geology, belongs to this period, and in fact, within this time the science itself may be said to have been reduced to a system. The formation of the Geological Society, in 1807, materially contributed to that result. It would be foreign to the present purpose to enter into details: I can only observe that the proceedings of geologists have been marked by a most praiseworthy regard to the laws of induction, and by an assiduous zeal that cannot be too highly

commended. They have not hastily rushed to conclusions, nor evinced anxiety to sustain any particular theory. On the contrary, they have been laudably careful to abstain from systematising till the abundance of facts justified the attempt, and in some sort made it necessary. They have met with extraordinary success; and the student of geology, in the year 1850, finds himself already in possession of an accumulation of *data*, the results of the united labors of his predecessors, which place him immeasurably in advance, in point of actual knowledge, of those who commenced the study fifty years ago. Sir Charles Lyell very justly remarks—

"When we compare the result of observations in the last fifty years with those of the three preceding centuries, we cannot but look forward with the most sanguine expectations to the degree of excellence to which geology may be carried, even by the labours of the present generation. Never, perhaps, did any science, with the exception of astronomy, unfold, in any equally brief period, so many novel and unexpected truths, and overturn so many preconceived opinions. The senses had for ages declared the earth to be at rest, until the astronomer taught that it was carried through space with inconceivable rapidity. In like manner was the surface of this planet regarded as having remained unaltered since its creation, until the geologist proved that it had been the theatre of reiterated change, and was still the subject of slow but never-ending fluctuations. The discovery of other systems in the boundless regions of space was the triumph of astronomy; to trace the same system through various transformations—to behold it at successive eras adorned with different hills and valleys, lakes and seas, and peopled with new inhabitants, was the delightful meed of geological research. By the geometer were measured the regions of space, and the relative distances of the heavenly bodies;—by the geologist myriads of ages were reckoned, not by arithmetical computation, but by a train of physical events—a succession of phenomena in the animate and inanimate worlds—signs which convey to our minds more definite ideas than figures can do of the immensity of time. * * * * * * The practical advantages already derived from it have not been inconsiderable; but our generalizations are yet imperfect, and they who come after us may be expected to reap the most valuable fruits of our labour. Meanwhile the claim of first discovery is our own; and, as we explore this magnificent field of inquiry, the sentiment of a great historian of our times may continually be present to our minds, that 'he who calls what has vanished back again into being, enjoys a bliss like that of creating.'"

Here, also, it may be proper to introduce a reference to the progress made since 1800 in our knowledge of the surface and divisions of our globe, its climates and productions. Adventurous travellers by land and sea, have explored coasts and territories which were before but imperfectly known or not known at all—plunging into pathless deserts—exposing themselves to the scorching heat of a vertical sun—braving

he horrors of the Polar regions—enduring toils and privations unexampled, with a view to unfold more clearly the principles and laws which pervade inanimate nature—to facilitate intercourse and extend commerce—and to solve difficult problems in natural science.

We have reason to be proud, if it be allowable, of the share which British enterprise has had in these endeavors. The investigations that have been carried on in Africa—in the Pacific Ocean—in India—and in the territories verging to the poles, have issued in considerable enlargement of our information, and opened advantageous channels for commercial activity. It is deeply to be regretted that such expeditions often involve much suffering and peril. At the present moment, the eyes of the civilized world are turned with intense interest to the northern climes, tremblingly anxious, as all are, respecting the fate of Sir John Franklin and his brave companions. We shudder at the thought of the fearful agonies they must have endured; we scarcely venture to hope for their preservation; we sympathise with that affectionate and noble-minded lady, whose efforts for the deliverance of her husband will be recorded by the future historian with admiration; and we cannot but unite in offering up our petitions to the great Protector, for the safe return of our long lost countrymen.

Justice to others require me to mention, while treating on this part of the subject, that for the complete knowledge we now possess of that most interesting portion of the world,—Palestine,—and which has only been acquired within these few years, we are mainly indebted to our neighbors in the United States. Other travellers have visited and explored that country, but none so carefully as Professor Robinson of New York, who was excellently qualified, by his habits of close and discriminating observation, combined with literary acquisitions of no common order, for the task which he undertook. Lieut. Lynch, of the United States Navy, has since accomplished a work which Professor Robinson had not the means of attempting. He has traversed the Jordan from the Lake of Tiberias to the Dead Sea, and thoroughly surveyed the latter. The journey has afforded striking illustration of the truth of the Old Testament History. It has also removed a difficulty which had long perplexed the learned, by explaining the causes of the depression of the Dead Sea below the Mediterranean. It appears that in a tortuous course of 200 miles there are no fewer than 27 rapids, some of them long and dangerous of navigation. We are not surprised, therefore, to hear that the Dead Sea, into which the Jordan falls, is 984 feet below the Lake of Tiberias, and 1300 feet below the Mediterranean.

Chemistry next claims our notice; but it is unnecessary to expatiate at any length on the wonderful advancement of

that science since the year 1800. Every year has furnished its quota of discoveries, often of a peculiarly interesting and remarkable charactor. Among these, the additions made to the list of metals by the experiments of Sir Humphrey Davy —the atomic theory, as propounded by Dr. Dalton—and the curious and varied researches of Professors Brande and Faraday, embracing the different gases and the multiform compounds of acids with alkalies, or with the newly discovered metallic bases, deserve to be particularly mentioned. Enumeration is impossible. The progress of chemistry during the fifty years has been a continued triumph.

Astronomy, geology, and chemistry have been selected as specimens. In every other department of science there has been similar progress, placing the sojourner of 1850 on an elevated vantage ground, and supplying him with extraordinary facilities in pursuing his investigations. So remarkable has been the progress, that the professor of the latter end of the last century, could he appear now among us, would scarcely understand many of the text-books of the present period, on account of the difference of nomenclature, and the novelty of the principles and facts.

In reference to the present state of science it may be further remarked, that the number of enquirers and experimentalists is much greater than at any former period, and that the results of their investigations, though not of that striking character which is observable in the days of great discoveries, are highly interesting and important. The leading principles and laws of all the phenomena having long ago been satisfactorily ascertained, the consequence is that modern investigators have rather to do with minute resemblances or differences, the internal relations and diversified effects of the smaller particles of bodies, delicate and accurate analysis, and those wondrous influences which pervade all nature, but are as yet very imperfectly understood. On these accounts the annals of science may not be perused with much pleasure by the uninitiated, while nevertheless from time to time fresh discoveries are made, the amount of ascertained knowledge is daily increasing, and fresh insight is gained into the wise and benevolent arrangements of that Great Being who has constituted what are called, though not very reverently, the "laws of nature," and who is "wonderful in counsel and excellent in working."

2. Let me now refer to *Improvements*, or the applications of the results of science to practical purposes.

In this utilitarian age, theory, however correct or bold (and on this latter account, perhaps, the more welcome to many) is not likely to get much credit unless it can be reduced to practice.

It is the glory of modern science that theory and practice have been combined.

Men have not been content with sagacious generalisations. They have continually enquired how their race might be benefitted by their labours, and persevered in the exercise of ingenuity, till the new developements have issued in contrivances adapted to lessen toil or contribute to the pleasure and comfort of mankind. The proofs are all around us, and in every one's dwelling. Not a day passes without giving us the opportunity of reflecting on the improved position we occupy, and the favorable circumstances in which we are found, as contrasted even with those of the immediate predecessors of the majority of this assembly. Some few illustrations may be adduced.

In 1800, a journey of 100 miles was a serious affair. It occupied, even in England, a long day, in some parts of the country double that time, imposing great inconvenience and fatigue on the traveller. In 1850, that distance can be accomplished without difficulty in three hours, sitting entirely at one's ease and reading or conversing at pleasure.

In 1800 a voyage to India occupied from four to six months; in 1850, India can be reached in a month, and China in less than another.

In 1800, the merchant could not pass from England to Canada, or back again, with any certainty of reaching the port of destination in a specific time—it might be one month, it might be three. In 1850 he can cross the Atlantic in 10 days, and visit the old country twice a year as regularly as the mercantile traveller used to take his accustomed rounds.

In 1800, the streets of our towns and cities were lighted, if lighted at all, with miserable oil lamps, which did little more than make darkness visible, but rendered small service to the passenger. In 1850 the brilliancy of gas gives the splendour of an illumination within doors as well as without.

In 1800, if a calamity occurred, requiring to be announced to a friend at a distance, the Post Office presented the quickest mode of transmission, and in innumerable instances sad and fatal consequences ensued, and most poignant distress was inflicted from the impossibility of conveying intelligence by any swifter medium. In 1850, a message can be sent 500 miles in five minutes, and next morning the friend to whom you sent may be at your door.

In 1800, the amputation of a limb being necessarily accompanied with excruciating pain, the patient often shuddered at the endurance, and refused to submit to the operation, or lingered so long that it was too late, in either case to save his life. In 1850 the sufferer inhales a pleasant odour, falls into a sweet slumber, it may be into delightful dreams, and when he comes out of his reverie, finds himself *minus* a leg or an arm, without feeling a pang, or knowing how the separation has taken place.

In 1800, the miner received no warning of the approach of the destructive gas which deals death to all who come within its influence. In 1850 he goes fearlessly, safety lamp in hand, into the lowest depths and murkiest passages, and knows when to retreat from the advancing danger, and how to secure his escape.

In 1800, the deaf could only sit and see the speaker, faintly guessing at the terms of his address. In 1850, by applying the elastic tube to the ear, the lost sense is, as it were, restored, and communion of mind with mind is again enjoyed.

These illustrations might be multiplied almost *ad infinitum*. Even the match with which we now so easily procure instantaneous light, reminds us of the flint and steel and tinder box of our early days, and of many vain attempts to dispel the midnight darkness, when sickness or other necessity supervened; and numerous other conveniences and comforts are there, the loss of which would be deemed calamitous, and for which we stand indebted to profound and varied scientific research.

Then who can enumerate the endless inventions of mechanical genius and the appliances of chemical skill, in various manufactures, by which, in conjunction with the marvellous adaptations of steam, processes are performed with such facility, and on so extensive a scale, that articles which fifty years ago could only be purchased by the wealthy, are now produced at so small a cost as to be procurable by all classes? And who that desires the progress of society will fail to rejoice at the creation of a refined taste, a perception of the elegant and beautiful, among those who were formerly obliged to content themselves with the roughest specimens of the mechanic's handiwork, because their scanty means prevented them from obtaining any other? Nor will the rightly instructed member of the higher orders envy his fellow creatures the possession of these new sources of enjoyment, or be dissatisfied with the revolution that has placed in the tradesman's dwelling a product of art which, 50 years ago, could only be found in the palace, or enabled the peasant to purchase a dress which at that period a princess would not have disdained to wear.

3. I propose to address you, in the third place, on *Social Progress*.

To begin with *Education*. At the commencement of the nineteenth century but little comparatively had been done for the instruction of the masses, in Great Britain or in Europe. In England, the Colleges were chiefly resorted to by the rich, and the endowed schools, besides being totally inadequate to the wants of the population, were too commonly abused to purposes for which they were not designed, whereby the poor were defrauded of the benefits intended for

them. In Scotland, the population was fast outgrowing the parochial system. There was no general provision for schools in Ireland. On the Continent the arrangements were meagre and insufficient.

What is the present state of the Educational movement? It indicates deep interest, zeal, and activity—pervading all classes and denominations. There is a universal conviction of the importance and necessity of enlightened education, and strenuous efforts are made to secure it, both by voluntary contribution and legislative enactment. The results are cheering. The patriotic wish of George III., "That every poor child in his dominions might be able to read the Bible," is not yet realized, but the country is fast tending to that consummation. This remark is also applicable to Denmark, Holland, Belgium, France, Prussia, and other countries of Central Europe. Without vouching for the fitness of all the measures employed, or expressing an opinion on the nature and tendency of all the instruction communicated, we may contemplate with pleasure the fact, that the inhabitants of so large a portion of Europe have now the opportunity of giving their children a useful education, at little cost; and to this may be added another fact, no less gratifying, that in every part of the world where British influence prevails, liberal arrangements of a similar kind are in hopeful progress.

In the United States, as is well known, this cause has made rapid advance. The school systems of New England and New York are perhaps as near perfection as anything of the kind can be. In all the new States, too, large tracts of land are reserved for school purposes. Seminaries of a higher order are also to be found in every part of the country, and are continually increasing in number. Of the one hundred and twenty colleges now existing in the United States, ninety-six have been established since the year 1800, and sixty-five within the last twenty-five years. Education is justly appreciated in the United States.

There is another consideration which must not be overlooked—the improved methods of education which have been contrived and introduced since the year 1800.

Formerly, the end was thought to be gained, if the child had learned to read; and the daily exercises largely consisted in committing to memory heaps of words, and the monotonous reading of prescribed portions, without any endeavour to communicate information, elicit inquiry, or discipline their mind. Now, the range of instruction is much more extensive, embracing, even in common schools, a general acquaintance with Geography and History, and a knowledge of the principles of science; while by frequent examinations the teacher labours to excite interest, engage attention, and educate the intellect of the pupil. There are many establishments, it is true, to which these remarks may

not apply, but it is encouraging to reflect that the improvements which have been brought into use within the last few years are making rapid progress in every direction, and the assurance may be indulged, that ere long they will be universally adopted.

The *Diffusion of Knowledge* next claims attention.

The spread of education has awakened a desire which must be satisfied. If there are schools for all, there must be books for all. In both respects the year 1850 may be most advantageously contrasted with 1800. The demand has immensely increased, but the supply has kept pace with it. Solomon, could he return to the earth, would lift up his hands in astonishment, and again exclaim, but with greater reason, "Of making many books there is no end." Books of every size, of all descriptions, and of varying characters, good, bad, and indifferent, are daily issuing from the press. All countries are described. All history is re-written. All great and good men, and many who were neither great nor good, live again in their memoirs. All science is popularised. Every department of literature is cultivated, and made subservient to the general gratification. All tastes are consulted, and for every age and class there is distinct provision. If the books of the time are less profound, they are more useful. Authors used to write for the learned and refined; they now write for the people, as learnedly, indeed, as the subjects require, but in a style and manner adapted to secure circulation for their volumes, far beyond the limits of the merely literary coteries. Exceptionable and even pernicious as many modern books are, the popularity of truly useful books, betokens on the whole, a healthy taste, and prevents us from finding fault with the "liberty of unlicensed printing." And it must be regarded as an encouraging sign of the times, that while the most richly endowed and best informed minds are continually employed in providing mental aliment for the public, their exertions are duly appreciated and well rewarded. Scott, Hallam, Macaulay, Prescott, Irving, and many others whose names cannot be mentioned, write for the world, and for posterity.

The half century has been further signalised by the extension, the creation in many respects, of Periodical Literature. With the exception of the *Monthly Review* and the *Gentleman's Magazine*, there was little deserving that name, in England, in the year 1800. Since that time, the *Edinburgh* and *Quarterly Reviews*, with several others of similar character, but more honorable pretensions—monthly magazines, literary, philosophical and religious, in great numbers—weekly journals, and hosts of newspapers, have started into existence, and continually pour forth copious floods of reading matter, in Great Britain, on the continent of Europe, and in North America. The influence of these publications is

amazingly powerful. They correct the public taste, and shape public opinion. They supply information—suggest inquiry—aid in forming plans, and control their operation. They stimulate the dull and languid, check the forward, and confirm the hesitating. They are welcomed by the upright, and feared by the base. They are found in all places, from the drawing-room of the peer to the work-shop of the mechanic,—and they sway all minds, not excepting those who boast of their independence. How desirable is it that the current of Periodical Literature should be clear and deep, as well as strong!

But, knowledge is not merely diffused by schools and books. The social principles which God has implanted in our nature has been very properly pressed into service. What cannot be done, or not so well done, by an individual, can be accomplished by a society;—and by a society the division of labour, which is essential to success, can be fully carried into effect, securing the due employment of every kind of talent and qualification, and allotting to each his appropriate share in the general effort. Since the year 1800, societies have been multiplied beyond all former example. It has been truly an age of combinations and unions, and the utility of their formation is universally acknowledged. To the Royal Society, the first of the kind, established in the reign of Charles II, have been added, in our own time, the Astronomical, Geographical, Ethnographical, Geological, Meteorological, Chemical, Arcæological, Zoological, and other societies, undertaking different departments of investigation, and placing before the public, from time to time, the results of their enquiries. Last, but not least in worth and importance, come Mechanics' Institutes, which have been eminently successful in diffusing knowledge, training and directing the minds of thousands, and contributing to their happiness.

Permit me to speak briefly of *Government.*

Great progress has been made in the science of legislation since the year 1800. But little was done during the first half of that period; the great European War, and the new arrangements consequent on its termination, having occupied the whole time and attention of statesmen. But misrule produced discontent and agitation; and from the French revolution in 1830, till the present time, there has been a steady advance in the right direction, in the struggle between despotism and freedom.

Without offering an opinion here on the merits of the various questions in dispute between the Governments and the people, I may observe, that to the concession of free constitutions in countries in which they did not exist at the commencement of the period, has been added a much greater amount of regard, on the part of those in power, to the wants

and wishes of the communities over which they respectively preside. Public opinion is too powerful to be resisted; and public opinion demands that Government should be a benefit rather than a burden,—that it should be carried on in harmony with the feelings as well as the interests of the governed,—fully recognizing the important principle of ultimate responsibility to the people, and that it should adjust itself to the varying developments of the times.

These views prevail, not only in Great Britain, where political freedom has made good progress, and the elective franchise has been widely extended, but also in France, Holland, Belgium, and many of the German States,—in fact, wherever knowledge is diffused, and in proportion to the extent of enlightened education. They are destined to prevail universally, because they are consonant to truth and equity. Interested and obstinate men will continue to oppose them; and long established despotisms, such as that of Russia, will resist their introduction; but opposition will be in vain, for the nations will assuredly persevere in their efforts to obtain freedom and self-government, and will not rest till their purposes are accomplished.

Although I am addressing an audience composed of persons of different denominations, and under the auspices of an institution which abjures all interference with religious peculiarities, I trust that it will not be considered out of order, to advert for one moment, to the encouraging aspect of the times, in reference to religious liberty and the rights of conscience. Who, on this continent, will stand up in defence of the exploded dogma, that man is responsible to his fellow-man for his religious opinions? Who, in the nineteenth century, will venture to plead for their repression, restriction, or even discouragement? Who will dispute the position that civil government, being constituted for the protection of life, liberty, and property, is bound to secure the benefit to all members of the commonwealth, recognizing the equal rights of all, and treating all as equal, in every respect, as long as they obey the laws? And who will refuse to admit that when the British Parliament, in the years 1828 and 1829, removed from the Statute-book certain prohibitory enactments, and opened the doors of office and employment to all competent persons, irrespective of their religious professions, it performed an act of strict justice, restoring a right which had been taken away, rather than bestowing a boon which might have been withheld? These questions can receive but one answer, and this meeting will allow me to affirm on their behalf, that they anticipate with high satisfaction the period, now fast approaching, when absolute religious equality shall be every where realized—when all bounties and all restrictions, in regard to religion, shall be abolished—and men cease to "hurt and destroy" one another, on account of those differences, for which,

we repeat, they are amenable, not to any human tribunal, but to God only, the "Father of Spirits," and sole Lord of conscience.

I now come to notice the *benevolent efforts* which have sprung into existence since the year 1800. But it is not possible to mention even a tithe of them, so great is the number. During the last fifty years, philanthropists have vied with each other in devising plans for the diminution of misery, the suppression of vice, and the moral and religious improvement of mankind.

How glorious has been their success! We have *hospitals* —general and particular—as well for all kinds of diseases, as especially for those of the eye and the ear—for fever, consumption, and other disorders;—*Asylums* for the deaf and dumb, the blind, and the lunatic—for widows and orphans—for the destitute, the decayed, and the disabled; and, as we have before observed, *Schools* for all.

We have *Charitable Institutions* of every description, and adapted to meet all possible forms of necessity;—and we have *Societies* in all parts of the world, for moral and religious objects, embracing the multiform views which are current in Christendom, and employing a vast number of agents for the promotion of those views, by means of the printing press, education, and oral teaching. If it be asked what has been done? we may reply, in the language of the inscription in St. Paul's Cathedral, in honor of Sir Christopher Wren, its architect, "*Si monumentum requiris, circumspice*," (If you ask for a monument, look around)—or we may adopt the words of the Saviour and say, "by their fruits ye shall know them."

But, instead of descending to particulars, let me only refer to two or three of the most interesting illustrations.

In the year 1800, the Temperance movement was unknown. Men brutalized themselves, almost without rebuke —killed their wives and beggared their children with impunity. They cannot do it now. The blighting scorn of society would be upon them. Drunkenness is at a lower discount than ever. It has been discovered that it is wise to abstain from that which can do no good, and may do much harm; and that it is right to deny oneself to save a fellow-creature from misery and ruin. The result is, that many a home has been made happy—many a wretched being restored to his proper place in society—and that a salutary impression has been produced favorable to the general principles of this great reform, even among those who have not enlisted in its ranks.

In the year 1800, modern missions had only commenced their career. In 1850, we review their progress with astonishment and thankfulness. Missionaries of every Christian denomination have braved all danger, and endured all priva-

tion and toil in the prosecution of their noble enterprise. They have planted Christianity in every clime, and in almost every country. They have laid the foundation of a magnificent building, to be reared in coming ages. They have carried with them knowledge and civilization—reduced barbarous languages to writing—introduced the conveniences and comforts of life among savages—taught them to think and to reason—raised them to the true dignity of human nature—opened to them new and diversified sources of enjoyment—and shown the heathen that the true religion has "the promise of this life" as well as of "that which is to come."

In 1800, Great Britain was a slave-holder. She stole men—and she bought them, and sold them. She was the principal partner of the great slavery firm. But she has abandoned the traffic. She has denounced it as a crime, and treated it, in the case of her own subjects, as piracy. At an immense cost she has sent her ships of war to watch the dealers in human flesh and blood, hunt them down, and snatch the prey from their grasp. She has done more—she has purged herself from the guilt. She paid a hundred millions of dollars to the planters, and then burst asunder the chains of the bondmen throughout her territories. There is now no British slave for the sun to shine upon. Pardon the egotism of the speaker—and allow him to say that it is among the most pleasant recollections of his life, that he took some part in this holy crusade;—that he had the honour to co-operate with the great and the good in rousing the people of England to that state of virtuous indignation before which slavery withered and fell;—that he heard the eloquent pleadings of George Thompson—the cutting sarcasms of Daniel O'Connell—and the thundering denunciations of Willian Knibb;—and that he saw the venerable Clarkson at the great Anti-Slavery Convention in Exeter Hall, bending under the weight of more than fourscore years, receiving the plaudits of congregated thousands—yet meekly enjoying his triumph, and expressing in terms of devout acknowledgment, his gratitude to Almighty God for being permitted to live to see that day! It was a British Poet who said—

> "I would not have a slave to till my ground,
> To carry me, to fan me while I sleep
> And tremble when I wake, for all the wealth
> That sinews bought and sold have ever earned."—

And it is in the dominions of Great Britain that all men are really born "free and equal."

In 1800, men revelled in war. It was the rage and the fashion. Englishmen had "natural enemies," as they were termed—and they *would* fight them. They have paid dearly for it, and they will smart for it for many years to come. But a great change has taken place in the public

opinion of the country. Englishmen have no "natural enemies" now. Thanks to the influence of Christianity, better understood, we may adapt the words of the poet to our purpose, and say—

> "War is a game, which, now that men are wise,
> Kings *must not* play at."

Not that the fighting is all over. There will be conflicts yet;—but men will not "play at" war, as they have done. It will be the last resort, and all other means of adjustment will be first and patiently tried.

Formerly, it was the *rule*, and it constituted the history of the nations; hereafter, it will be the *exception*, and counted as a blot on the record. Bleeding humanity exclaims, "Oh, that war would cease!" Commerce, science, philanthropy, plead for universal brotherhood. The voice of God declares that men shall "break their swords into ploughshares, and their spears into pruning hooks—that nation shall not lift up sword against nation," and that "men shall learn war no more." That time, we believe, is not very far distant.

Having thus endeavored, briefly and imperfectly, to sketch the progress of society, since the commencement of the present century, and to contrast 1850 with 1800, I presume that all present will admit the conclusion, that it is our happiness to live in a very extraordinary age,—an age which has been distinguished more than any that preceded it, by profound research, brilliant discovery, and far-ranging beneficence. The improving process is still going on, and it will now advance in a geometrical ratio. The second half of this century will be much more illustrious than the first, and ere the year 1900 dawns upon the world, mankind will have been blessed by such an unfolding of the true and the useful, in every department, as "eye hath not seen nor ear heard," nor the mind of man conceived.

Meanwhile, what is present duty? Faithfully to avail ourselves of the advantages thus lavishly bestowed upon us —to cherish a deep and serious sense of the responsibilities thence arising—in regard to intellectual training, to exercise a sound discrimination in the choice of authors, preferring the practical to the showy, the fanciful, and the romantic—to cultivate the spirit of the age, and prepare to advance with it—and especially to take part in promoting all well-digested plans and enterprises for the benefit of our fellow-creatures, our country, and the world at large. Ours is a noble vocation. Let us cheerfully respond to the calls which are addressed to us on every side.

In the progress to which your attention has been directed this evening, Canada has largely participated. Her advancement since the year 1800 has been steadily rapid. In that year, the population of Lower Canada was 250,000; it has increased more than three-fold, being now 780,000. The

population of Upper Canada was 70,000; it has increased more than ten-fold, being now 721,144. In 1800, sixty-four vessels arrived at the Port of Quebec: in 1849, one thousand and sixty-four. In 1800, the Provincial Revenue was less than £30,000: in 1849, the returns for two quarters exceeded £300,000. In 1800, a vessel might take as much time in getting from Quebec to Montreal as was occupied in crossing the Atlantic: now we leave one city at sunset and reach the other at sunrise. In 1800, there were no Common Schools, and in Upper Canada no Colleges: in 1850, our schools are frequented by 200,000 pupils, and in addition to the Colleges and Seminaries connected with the French Canadian population, we have M'Gill and Lennoxville Colleges in Lower Canada, and, in Upper Canada, Queen's, Regiopolis, and Victoria Colleges, and the University of Toronto, besides numerous private seminaries for education, well conducted and crowded with students. In 1800, there was no gas, no steamboats, nor railroads, nor plank roads—in many places scarcely any road at all. The changes in these respects need not be enlarged on; they are well known, and duly appreciated.

At that time, the country wore an aspect of rudeness and discomfort; the population was scattered, toilsomely pioneering its way through the forests. Settlements were few and far between, and towns were but here and there visible; but in 1850, wherever the traveller goes, he discovers symptoms of enjoyment, enterprise, and prosperity: well cultivated farms, flourishing manufactories, thriving villages, populous towns and cities, displaying the best style of modern elegance, together with abundant proofs of remunerating commerce, are presented to his view; while in all directions he observes with satisfaction the care which has been taken to provide the means of mental culture and religious improvement.

Before *us*, also, an exhilarating prospect is opened. What remains, but that we resolve to be wisely patriotic;—that whatever position we may individually choose to occupy, politically or religiously, we will encourage to the utmost extent all purposes tending to the advancement of the interests of the land;—that we will foster its institutions, and labour to bring them as near perfection as any thing human is capable of—that we will promote, as far as in us lies, the union of Canadians in furtherance of education, agriculture, manufactures, and all moral reforms;—and finally, that we will live for this country, and combine with all true patriots in the prosecution of such measures as shall render Canada as great and glorious as she is free!

ROLLO CAMPBELL, PRINTER.