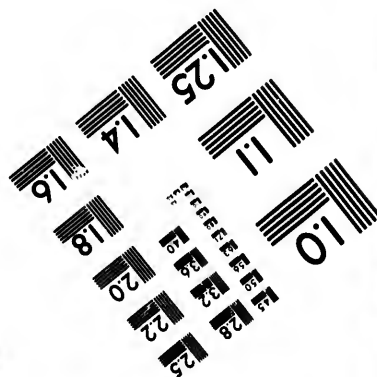
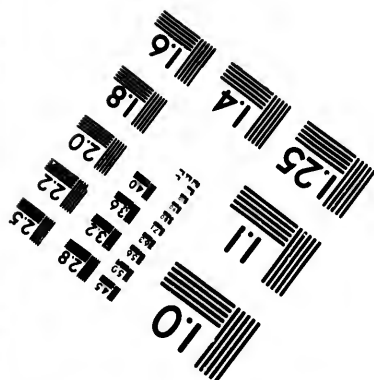
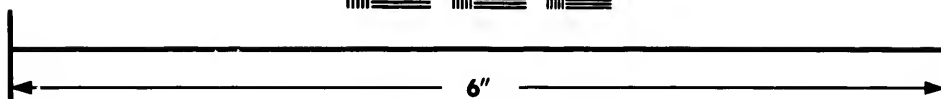
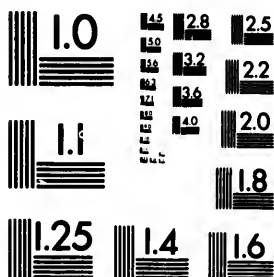


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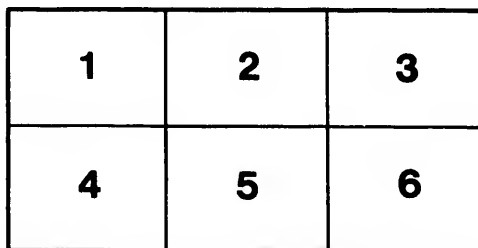
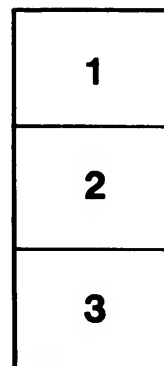
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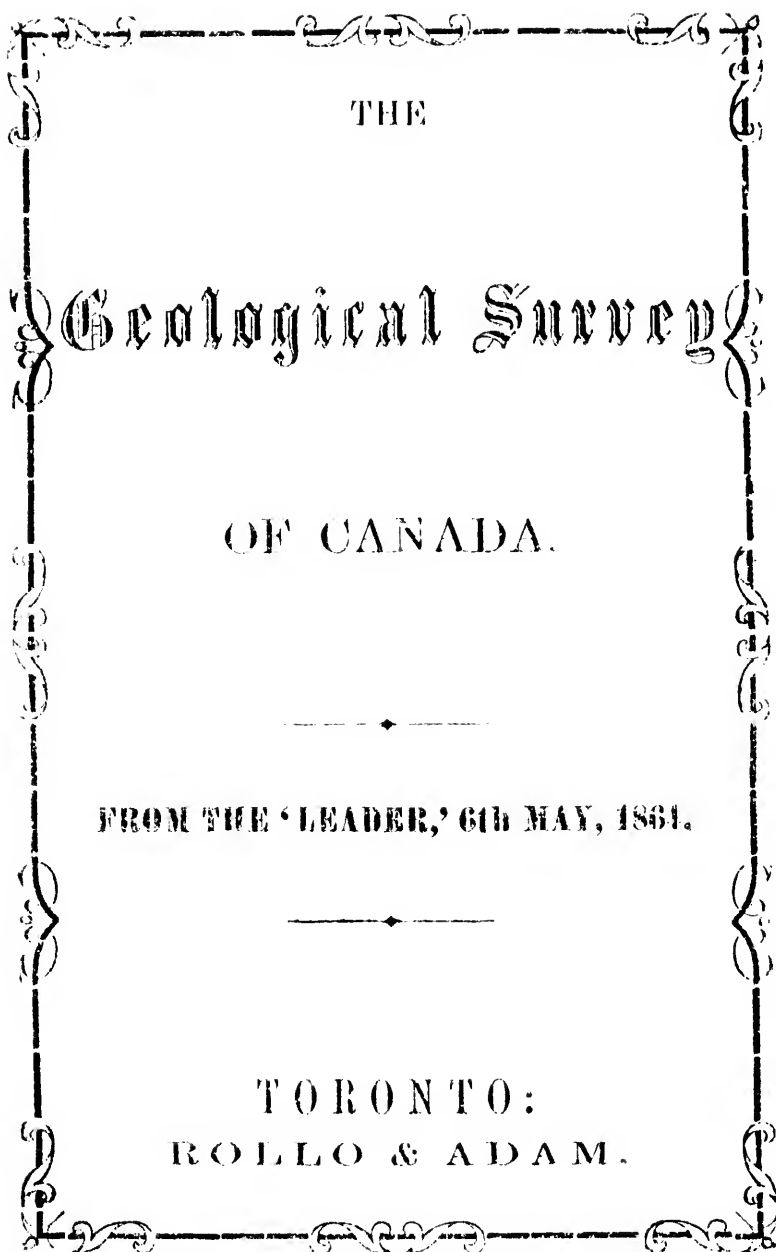
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THE

Geological Survey

OF CANADA.

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FROM THE 'LEADER,' 6th MAY, 1861.

— ♦ —
TORONTO:
ROLLO & ADAM.



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THE
Geological Survey
OF CANADA.

FROM THE 'LEADER,' 6th MAY, 1864.

TORONTO:
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Geological Survey of Canada.*

EVERY student of history remembers the emotion with which GIBBON has recorded the completion of his great work. He tells us, he wrote the last lines of the last page in the summer house of his garden, and with what emotion he took several turns in a *berceau*, or covered walk of acacias. Every one who has looked from the terrace at Lausanne, can sympathize with his homage to the beauty of the scenery. "The air was temperate, the sky was serene, the silver orb of the moon was reflected from the waters and all nature was silent. I will not dissemble the first emotions of joy on recovery of my freedom." And

*GEOLOGICAL SURVEY OF CANADA.—Report of progress from its commencement to 1863, illustrated by 693 wood cuts. Montreal: DAWSON BROTHERS. London, Paris and New York, BALLIERE, 1863.

then followed, as with every human happiness the *amari aliquid* when he considered "that whatsoever might be the future date of my History, the life of the historian must be short and precarious." Doubtless some feeling of this character passed through the mind of Sir WILLIAM LOGAN as he returned to the printer the last corrected proof sheet of the volume, which systematises the twenty years labor of his life, which establishes the geology of his native country, and which must be the text book to guide the future student as it is the manual of his own facts and theories, indeed it may be said almost the record of his daily life. We trust however that if this be the *magnum opus* of the illustrious geologist, that the work is by no means his last. If we have here the effort of his best years, it is not to be said that we are to know him no more, for there is still very much to be done in the extended field of observation in which Sir WILLIAM has toiled. We have however for the moment rather to examine what has been effected than speculate on the future.

To make this comparison we have to place before us the condition of the science as it is now, with what it was before the examinations were made, and we shall find that the physical condition of the Province was even with scientific men a mere matter of speculation. With the great mass of the population it was uncared for. There was no source of profit in its study, and the possibility of extensive mining operations in copper or iron, seems never to have found very many sanguine believers. Now and then doubtlessly, certain analogies were suggestive of future success; but the existence of such enthusiasm is traceable only to a limited extent. Equally some slight commotion was caused by the perusal of the proceedings of the scientific societies in England and in the United States, and mortification consequently arose that the field was so barren of exploits in this Province. The history of the various grades of effort in this direction shows how languid all operation really was; and certainly the quiet indifference with which politicians

listened to proposals for expenditure of money, in what many to this day publicly declare to be a folly, must have been depressing to a higher tone of sympathy than was then existent. We do not profess to be in the position of putting in certain limits the then condition of our geological knowledge. The subject is worthy enough of consideration; but with something of humiliation we must confess, that the want of works of reference in Toronto, is an impediment to the investigation. In a century or so—or at the close of some geological epoch—a public library may be established in Western Canada, one of the specialties of which will be the collection of books bearing on Provincial history. But for the moment such an institution is as little thought of, its requirements as little understood, or its elevating influences as little appreciated, as mental culture was fostered in ancient Bœotia. We may profitably trace the progress of this great work through its various stages. We find the first record of systematic effort in the Parliament of Upper Canada in January, 1832, when the petition of Dr. RAE

praying for pecuniary assistance to conduct a survey, was sent down with a favorable recommendation by the then Lieutenant-Governor Sir JOHN COLBORNE. The petition was formally referred to a committee, and there the matter ended. Dr. RAE described himself as a Fellow of the Medical Society of Edinburgh. His petition is given at length in the Journals of 1831-2, (page 100). He was tolerably cautious in his statements, for he contented himself with saying simply that it was his intention to describe the leading features in the geological structure of the Province; that the geological and mineralogical details of the region to the rear of the Midland district were very interesting, and that there was a probability of valuable minerals being found there. The same fate was reserved for a petition of the like character from the York Literary and Philosophical Society. Four years later, February, 1836, Mr. W. L. MACKENZIE moved for a committee to report upon the best means of prosecuting a geological survey. The report was ordered to be printed and was referred

to the Committee of Supply. But the five years dallying seems to have exhausted the patience of those who had taken the matter in hand. Accordingly in November of this year, Mr. DUNLOP, seconded by Col. PRINCE, moved the House into a committee of the whole to consider the expediency of commencing the survey, and it was resolved to address Sir F. B. HEAD to know what means were at his disposal to carry out the scheme. No real advance was made by these proceedings, and although Mr. DUNLOP in December of this year gave notice of an address to HIS MAJESTY for a grant of wild lands to defray the cost; no address was presented. The difficulties which arose from the heated condition of politics finally ending in the rebellion of 1837-38, postponed any definite practical measure until quieter times, and it was not until after the Union of the Canadas under the administration of Lord SYDENHAM, that the project of the long desired survey was entertained, when petitions from the scientific societies of Montreal led to the introduction into the estimates of the sum of £1,500.

The question now] arose who should be entrusted with the duty, and as the original investigation had mainly in view the examination whether or no Canada contained coal, it seemed to be a *sine qua non* that the conductor of the survey should possess especial attributes to decide that question. In Canada the science was unknown. It was not pretended that any one had any particular aptitude in this direction, so necessarily the Executive had to turn for aid to the mother country. We are let behind the scenes in the negotiations which ensued. Not that there is any particular mystery to explain; but, during the progress of the survey, some ignorant backwoodsman, whom chance had pitched into Parliament, made himself more than usually ridiculous by some absurd criticisms on geology in general, superadded with some special impertinences to Sir W. LOGAN in particular, the main point of which was that the latter was perfectly ignorant and incompetent. Mr. LOGAN (as he then was) at once applied to the Governor-General for copies of the correspond-

ence leading to his appointment, which in self-defence he published. We learn by these documents that early in 1842, the Governor-General addressed the Colonial Secretary regarding Mr. LOGAN's qualifications. That official at once put himself in communication with Sir H. DE LA BECHE, Director of the Ordnance Geological Survey Dean BUCKLAND, Sir RODERICK MURCHISON, and Professor SEDGWICK. Each of these eminent men vied in the readiness with which they bore testimony to Mr. LOGAN's capacity. For his reputation was then established. His operations in South Wales, in the examination of the coal beds in that part of the country, in all quarters had been recognized as highly important so much so that his work had been incorporated in the national survey. Accordingly Mr. LOGAN was selected for the duty, and in 1842 revisited his native country, where he passed four months in making a preliminary examination. Unfulfilled engagements, however, called him back to England, where he returned, remaining until May, 1843, at which date the survey

may be said to have commenced. When we consider the smallness of the first appropriation, it is a little bewildering to think what was really expected from it. The physical condition of the Province was perfectly unknown, although some inference might have been, and doubtless was drawn from the rocks of the neighboring State; but it was just as possible as not that the horizon of the formation which gives coal in Michigan, would be found equally in the north-western part of Canada, or that some deposits might be found in an outlying basin in the Eastern Townships. Theoretically many asserted the fact. Notawasaga Bay on one side from its bituminous shale was looked upon as peculiarly likely to produce it, few in that part of Canada understanding that the graptolite fossil, was in itself a proof, that the age of the rock established the impossibility of finding coal. The Statute Book records the existence of the *Gaspe Coal and Fishing Company*, so what was expected in that quarter is very evident. Indeed we will hereafter have to speak of more than

one fallacy and of some acts of rascality based on this popular delusion, but we are tracing for the moment the progress of the survey. In connection with Mr. LOGAN, Mr. MURRAY was appointed, and it is evident that only by the most pinching economy could the limited sum appropriated attain any result. During the first year their labors were accordingly divided, Mr. LOGAN visiting the Gaspé peninsula, Mr. MURRAY taking the country west of our meridian. In the year following the labors of the two were concentrated at Gaspé, and not only the £1,500 was all gone, but the Geologist had advanced £800 from his own means. The survey began now to be better understood, and Lord METCALFE particularly felt the necessity of its operations being widened, and a systematic impress given to it. Accordingly, in 1845, an act was introduced appropriating the annual sum of £2,000 for five years. This sum, not however fully sufficient, gave at least status and vitality to the occupation. It was possible now to obtain explorers who would take to their duties as a profes-

sion, for there was some tangible reward for their labors, and not the slightest of the difficulties was thus removed. Among those who joined the survey at this period honorable mention must be made of Mr. RICHARDSON, then settled in Beauharnois, and who is still engaged in the duties of exploration. Special mention is made in the preface of his valuable labors, which seem to have extended over the whole area of the Laurentian and Silurian Rocks, and it would appear that it was no little by the results of his careful investigations that the age of the Quebec group was established. From these more liberal appropriations it also became possible to increase the staff by an analytic chemist, in order that the mineral waters might be carefully subjected to a test, equally with minerals capable of useful application. Some slight difficulty occurred through the appointment of a gentleman who now rests in a quiet churchyard on the shores of Lake Geneva. But in 1847 Mr. STERRY HUNT was appointed to the duties which he has

since so brilliantly performed. There was nothing now to mar the operations of the survey. Accordingly on the expiration of the period for which the appropriation has been made, the act was continued for a further five years, so that an additional life of five years was given to it, prolonging the survey to July, 1855. It was in this interval that the great exhibition took place in London, when the admirable collection of minerals and fossils not only attracted the attention of the scientific, but set forth the true estimate of the resources of the Province. The arrangement was so admirable, that by aid of the maps on the walls of the Canada division, its physical condition could be mastered at a glance. The success of these efforts had no slight influence upon the committee of the Legislative Assembly, which met in 1855 to consider the best means of making public the information of the survey, and of completing it at an early period. The committee entered upon their duties with more than ordinary zeal, and examined some of the most eminent men of this continent—HALL

AGASSIZ, CHAPMAN—as to the utility and desirable extent of the geological investigation. The report was pretty generally distributed and commented on, and by a unanimous vote the sum of \$20,000 annually for ten years was granted, which date expires in July, 1865. By this increased vote Mr. BILLINGS, the eminent palæontologist, with additional explorers and surveyors, was added to the survey, whose labors have been bestowed without intermission on his various duties. And it was owing to the increased appropriation that we have the experience and work of the last years classified and generalised in its now satisfactory condition.

Although we are destitute of precise information of the state of geological knowledge regarding Canada when SIR WILLIAM commenced his survey, what we do find is sufficiently suggestive. The fact really is that nothing was known of it. Thus Sir H. DE LA BECHE in his letter concerning the qualifications of Mr. LOGAN, April, 1842, while anticipating the best results both to the science of geology and its applica-

tions from his appointment, adds "that his qualifications as miner and metallurgist would be of importance in Canada, the mineral wealth of which is now so little known." On the other hand Mr. BUCKLAND recommends Mr. LOGAN as "the most skilful geological surveyor of a coal field he has ever known," a sentence which, if it means anything, is suggestive that the writer thought coal might be discovered in Canada. Sir RODERICK MURCHISON speaks of our geologist as one who has chiefly studied "the older rocks including the *carboniferous deposits*," and adds, "Mr. LOGAN is admirably prepared to develop the subsoil of Canada." Mr. SEDGWICK dwells on Mr. LOGAN's knowledge of the coal fields of Pennsylvania. If these words at all represent the state of knowledge of the most scientific men of that day—men who are now most pre-eminent and of world-wide reputation, it is no wonder that the busy population of the province were uninformed on matters which require more than ordinary study and experience to master. Glimpses of light however had to some

extent penetrated this darkness. Admiral BAYFIELD, who was engaged in the survey of the St. Lawrence and the Lakes, made use of the opportunities he had, to form a collection of fossils, and forwarded to the Geological Society in London several papers connected with Canadian geology. Dr. BIRSEBY, Secretary to the Boundary Commission under the Treaty of Ghent, in 1815, collected and published a great many facts and observations which his position gave him an admirable opportunity of collecting, and accordingly he is not only quoted by LOGAN as an authority, but is honorably mentioned as one of the pioneers of the science. No few engineer officers were both zealous and active in the pursuit. It was General BADDELEY, when a young man who first discovered gold in the Chaudière Valley. But efforts of this order at best were but the work of amateurs. They were unconnected, without a common object, directed from different stand-points, and dissevered by divergences of character and modes of examination. One great advantage in the Canadian survey is that

it has been kept under one controlling head. Had it been otherwise, we could not have followed the unity of design, and the proper subordination of secondary to primary points which now mark it. In all sciences uniformity of plan is indispensable, and it is of importance that true and actual identity is not obscured by differences and discrepancies of description. There is so much to detail in operations of this character, that it is of importance not only that no omissions occur, but that the information is not weakened by departures from a settled plan. Further it is equally essential to avoid repetitions, which bewilder and repel the student. Three or four contemporary heads, each more or less jealous of his reputation, in order to advance claims to their discoveries, are generally liable to extend the nomenclature: in geology, of all sciences, the last thing to be admitted. And if the student does on initiation to the esoteric mysteries shrink somewhat aghast at the formidable array they present, he has at least the satisfaction of knowing that they have not been

carelessly, we were nearly writing, cruelly multiplied. But from the fact that one controlling mind has directed the operations, no unwise investigation has been frittered away on unimportant enquiries, and our oneness of system simplified while it generalized the results.

We may claim the result of the twenty years labors to be generally this, that for practical purposes we know, what mineral wealth we have, and what we have not. This information is no dubious, half credited belief. Like all results of well considered scientific operations, it has grown up as the information was disseminated, examined, weighed, and proved, to become a part of the national estimate of our resources. Mr. HALL, of New York, has borne testimony to the authority of the Reports of the Canadian Survey, not only with men of science, but with the more active class who seek information for the purpose of profitable investments: men who consider geology as the light by which they may safely operate in economic substances, and who need direction for the employment of capi-

tal. Canada has the satisfaction of knowing that no loss of capital, and waste of labor, with the misery consequent upon misdirected energy, has been a phase of provincial experience owing to the fruitless pursuits of what it was impossible to obtain. Mr. HALL gives his testimony that one million of dollars have been expended in abortive attempts to obtain "fossil fuel." Sir RODERICK MURCHISON computes that the money expended in England alone, before geology was understood would be sufficient to make a correct geological examination of the whole crust of the world. However, we have not been entirely without excitement on this matter. Six years ago, in June, 1858, Bowmanville coal was the latest thing, and no little excitement was kept up regarding it. One JOSEPH BALDSON discovered "a coal mine," on the property of Mr. BATES. A shaft was sunk for 60 or 65 feet, and borings were carried on 90 feet deeper. Enthusiastic public meetings were held. Everybody attended, and all made speeches who could, to have their fling at the "jargon of geology." The

Mayor of Bowmanville came specially to Toronto to hold an interview with the Governor-General. A Vigilance Committee was appointed—and there was a howl of delight that all the scientific world was to be proved wrong, and “the uneducated, “hard working mining laborer” was to turn out the enlightened instructor of the age. Dr. CHAPMAN, to whom some specimens were submitted, easily recognized a detached cube of coal among some pieces of bituminous matter, and this piece of coal was declared to be found *in situ*. But the advocates of the discovery, no doubt in all honesty, but without reflection, endeavored to prove a little too much, when they declared that a quantity of coal had been taken from the “mine,” and had been tested, and found excellent in the various blacksmiths’ shops in the neighborhood. The quick eye of Dr. CHAPMAN at once saw the absurdity of the assertion, and the letters which he published had no little influence in exposing the imposture. Taking the data of the “miner,” that the seam of coal was 6 ft. 5 in.,

and the bore hole was 3 inches, it was evident, that if the "coal" brought up had been in one solid mass it must have been less than the third of a cubic foot in bulk; therefore this actual coal, tested by the blacksmiths, must have been obtained elsewhere. But the fact is, as everybody acquainted with boring knows, that the matter brought up is a wet, pounded *detritus*, to which Dr. CHAPMAN gave the very emphatic word "slush," so that none of it could possibly have been consumed. A few days after, BALDSON, confessing his dishonesty, absconded.

The first attempt, however, of this character deserves a special record, not simply from the impudence of the effort, but from the inexorable logic of the reasoning by which the deception was exposed. The narrative is not to be found in the volume before us, but it is stated at length in the Report for 1849 (pp. 18 to 25). Two enterprising individuals, by name BOUCHARD and MENARD, living on the Bay of Saint Paul, some sixty miles east of Quebec, petitioned the Governor General to the effect

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that he would cause an examination to be made of their farms, as they had discovered coal, some specimens of which were forwarded with the petition. At the same time a pressure was put upon the government by the member for Saguenay, for an immediate examination. It was asserted that men entitled to credit had taken pieces of coal of good quality from a spring on the property of these persons, which it was inferred was brought up from a seam below. Mr. LOGAN accordingly proceeded to the spot. There cannot be a doubt but he penetrated the trick at a glance. It was at once evident that the spring had not a force sufficient to drive up a cube of coal of an inch or half an inch in size—and that even if it had the force, the ancient spring would have cast up, in common with the small masses, much of the coal pulverized, whereas there was none in that condition. Independently of this, the quantity of coal found, seemed in no way to accord with the theory of what would have been deposited had the amount found been explained by natural causes. Besides, no

instance existed of coal being so forced up by a spring of even greater power, and hence the inference would be that the deposit arose from an outcrop—which supposition was at variance with the sharply defined lines of the cubes. Further, on the coal found, iron pyrites was exposed intact, which would not have been the case had the coal been subjected to the atmosphere, as iron pyrites rapidly decompose, and hence it was evident that the specimens had been obtained from the deep part of a coal seam, and had only lately been exposed. The examination of the rocks adjoining gave no indications of carbonized fossil plants; while the formation itself was known to be older than the coal measures. Hence it followed that the specimens had been obtained from some imported cargo; that the whole thing was a swindle.

The days of Canada Coal mines may be said for ever to have passed away. Even at Quebec they have ceased to watch the shaft on Citadel Hill, the rude protection to which struck every visitor on his arrival. Perhaps all memory of it has passed away,

and if we here chronicle these forgotten fables, it is because we remember that we are in a busy age of mining, and that there are dupes still to listen to the cheat. As the market is inundated with speculations, it would be well for the tempted to think twice before they embark their means, and some knowledge of the efforts made in the direction of "Canada Coal," may be no bad preparation to consider no few of the schemes put into the market.

In turning to the thousand pages of the book itself, we are struck with the wonderful care with which it has been put through the press. The typography and the proof reading cannot be too highly commended. The *errata* are seven in number less than infinitesimal in this large sea of technicalities. To give here any idea more than a general *aperçu* of the whole work is not possible, but we may say that the work is written as inductively as possible. It commences with an admirable account of the physical geography of the Province---establishes the nomenclature, and runs through the various formations, beginning at

the lower Azoic rocks. Having established the chemical character of the rocks with the distinguishing fossils of each series, the minerals are specially described. Of course they are set forth in language which only men with some acquaintance with science understand, and necessarily a certain knowledge of chemistry and mineralogy is indispensable to the student, or the volume is sealed to him. It was precisely to supply this void that CHAPMAN published his "Minerals and Geology of Canada," which we believe he was led to do, no little at the suggestion of Sir WILLIAM. With this preliminary knowledge, the index directing the reader to any mineral—he can learn where any rock is found, the location generally of course, —its quantitative analysis, its general character and its rarity or abundance. From minerals we pass to the waters of mineral springs—which have been analyzed, with their chemical and geological history. Not the least interesting chapter in the book is that succeeding, the XIX. contributed by Mr. STERRY HUNT, which treats of the chemical

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and mineralogical condition of the altered
 rocks—now known by the term metamor-
 phic. It is admitted that generally, at least
 up to the tertiary inclusive, that sedimen-
 tary rocks however originally rich in
 fossil remains, may undergo such change
 as to lose all evidence of organic life, and to
 depart from their original lithological char-
 acter. What this action was, necessarily
 can only be inferred, but it is patent that
 the chemical force which effected it, is con-
 siderably greater than any now known to
 exist. For the moment there is no answer
 to the question whether these rocks, by
 sinking into the earth were subjected to
 so intense a temperature as to effect these
 revolutions—or whether the agency of che-
 mical solutions percolating through the rocks
 worked the change. If Sir WILLIAM has
 any opinion it inclines to the latter. We
 pass onward to an elaborate account of the
 various mines as they exist in different loca-
 lities, in connection with which, are careful-
 ly detailed the various economic substances
 such as Phospate of lime, Gypsum, Bi-
 tumens, Clays, Hydraulic Cement, &c.,

&c. The descriptions are carefully written, and enter minutely into the many different points embraced in this complex enquiry. The completeness with which, in particular, copper, iron, and gold are dealt with, literally exhaust the subject. With some remarks on superficial geology the book concludes.

Such is the distribution of the work. It is perhaps necessary specially to allude to the nomenclature, which SIR WILLIAM had literally to invent, and concerning which we would wish to offer a few remarks. That of Canada is based on the necessity of adhering to local designations, and on the principle of applying as much as possible, the well established names of strata known on the Continent. The chief object in this determination was to admit of comparisons between equivalent masses, and as SIR WILLIAM adds, "of rendering homage to those whose labors have aided us in understanding our rocks." Thus most of our terms are those of the Geological Survey of New York, which had been long prosecuted before the commencement of

the Canadian Survey. In the great plain south of Lake Ontario, between the Laurentides and Appalachian mountains extending to the Rocky mountains, there is generally a very undisturbed condition of the masses. The Laurentian series crosses the St. Lawrence at the Thousand Islands—at no great elevation, and runs to the Adirondack mountains, which rise 5000 feet above the sea on the west shores of Lake Champlain. Between this elevation and the terrace which forms the Falls of Niagara, there has been little disturbance, and the sequence being assured, it followed that a corresponding gradation might be looked for north of the lake. It therefore to some extent became a necessity to identify them. In the event, however, of the presence of a group not recognised in the rocks of New York, or “when a mass destitute of organic remains is replaced in Canada by one marked by fossils” in such instances a Canadian name is given. In the great divisions of fossiliferous rocks, we preserve the nomenclature of Great Britain, and hence our geology is divided into the

Silurian, and Devonian, while in the Azoic rocks in the Laurentian and the Huronian formations the names shew the etymology. They consist of a metamorphic sedimentary character, and underlie all the fossiliferous rocks. The former are now recognised by SIR RODERICK MURCHISON, as identical with the gneisoid rocks of the Western islands of Scotland, and the term Laurentian is accepted in British Geology.

It seems to us, however, that with propriety some little modification might now be made. Sir WILLIAM himself has led the way, by speaking of a part of the Lower Silurian as the Quebec group, calling the Chazy, or its equivalent, "Sillery," while the Calciferous sand rock is described as "Levis." Very correctly, it seems to us we speak of the "Guelph" formation. But there is one term which we think should be modified as soon as practicable, that is the term "Hamilton," which, from the geographical importance of the city of that name in Canada, is frequently applied to its locality instead of being identified with the counties Elgin, Kent, Middlesex

and Lambton, which approximately form the area of the formation, the term having been taken from Hamilton in New York. CHAPMAN suggests the term "Lambton" for this formation. Equally his idea of calling the Lower Helderberg. "Euryp-
"terus," after the crustacean of that name, which is the characteristic of the rock, seems to us worthy consideration.

It was but the other day that we put into as few words as possible the salient points of the geology of the Province. Accordingly we have now only to dwell on the truths we learn from it. We fear that this report somewhat narrows the area which had been generally considered as fit for settlement. Where the azoic rocks exist, there is so little decomposition from exposure to the weather, that the land is generally poor and unfruitful. It is only among the limestones and anorthosites that we obtain a rich soil. Accordingly north of the Ottawa, and over a considerable extent to the south of it, except in periodic oases, we may not hope for extended settlement. On the other hand, as a counter-

balancing source of wealth, it is in these rocks we find all the iron and much of the copper, which are so diligently worked. Further exploration may throw light over this area the condition of which, although geologically known, has been but partially explored—and it is to be hoped that bands of lime stone may be met with in sufficient extent, to promise a fertile soil. To speak of the labors of Sir WILLIAM LOGAN is barely necessary. His reports annually published have constantly kept his name before the public. The two exhibitions at London and Paris, set upon his merits the seal of approbation from the highest and most renowned of every civilized country. In no metaphorical language he has positively brought honor on his native land. Living only for the work he took in hand, careless of honors, indifferent to amusement, with an ample private fortune to pass his life in literary and scientific ease, his hopes, his fears, his existence have been merged in this one work. At the end of five years after its commencement he was offered a salary of \$10,000 to proceed

to India. Perhaps in this quarter there was a field for a greater reputation than he was certain he would achieve here. Undoubtedly the road lay open to accumulated wealth and untarnished honors. In Canada there was nothing assured. Ignorant members of Parliament had assailed him, and an unsympathetic Executive thought they were extravagant devotees to science, by doling out their limited appropriation. But faith is strong and enthusiasm is untiring. Canada was LOGAN's home. Here he was born; here he had passed his youth, and his duties as it were seemed to him to lie written out before him. He had but to be patient, to abnegate, to be earnest, and his hour would come. And come it did. In time his character literally extorted from Parliament the consideration to which he was entitled. The conductors of this Journal look back with pride to the part they took nine years ago in enforcing the claims of the survey—for at that moment, there was a knot of men trying to cut the ground from under his feet and to appropriate his honors. The peculiarity of

this illustrious man has been that everybody who has come within his influence has been carried away by personal devotion to him, and this feeling has told in the work he has to do. The very volume which leads to these remarks is proof of the fact. One of the pleasant duties of the newspaper writer is to have his heart in what he does. The exigency of his daily life is for him to bear and forbear. He has to estimate this man and that man, not objectively, not potentially, but relatively. He has to judge some particularity by the concrete. He has not to forget the standard by which we are all to be considered. He has to take men as they go; and his criticism is unfortunately not always to him such a labor of love, as when in his daily course he has to perform an act of justice, to a pure, able, lofty-minded, unselfish man, like WILLIAM EDMUND LOGAN.

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