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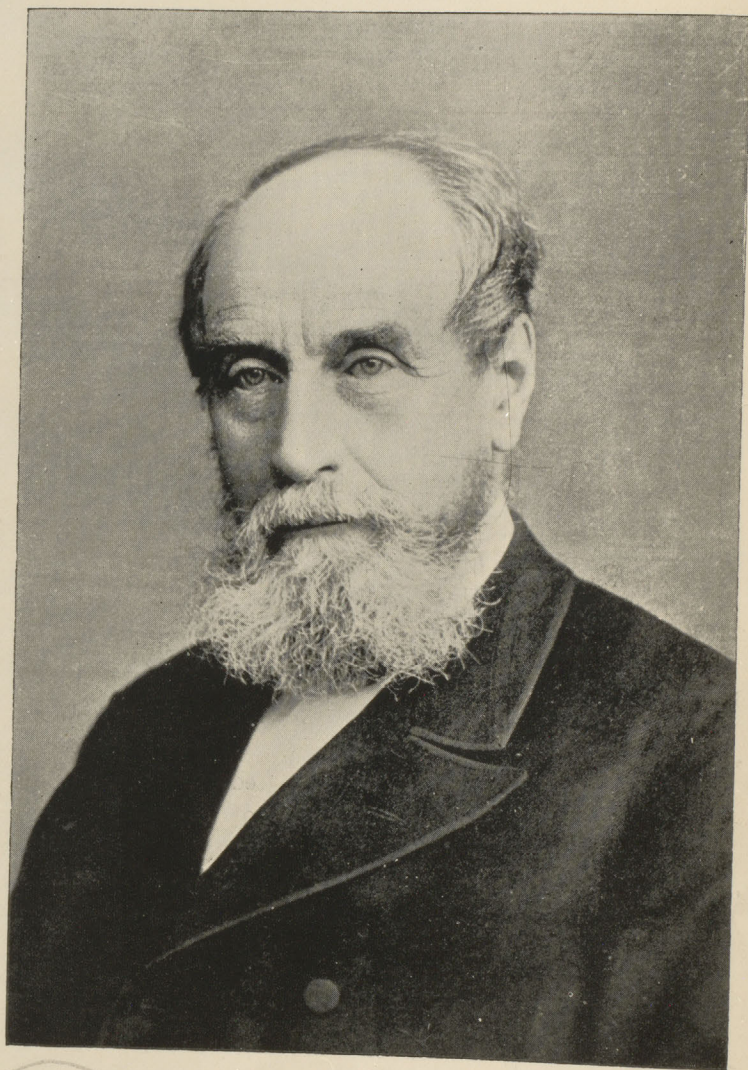
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THE LATE SIR JOHN WILLIAM DAWSON, C.M.G., F.R.S., LL.D., D.C.L.

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SIR JOHN WILLIAM DAWSON.

By PROF. FRANK D. ADAMS.

In Sir William Dawson there has passed away the last survivor of that distinguished group of naturalists which in the earlier part of this century achieved for science in America such brilliant results and such widespread recognition—men whose range of knowledge was almost encyclopædic, and many of whom made valuable contributions to science in widely separated fields. The environment of the man of science has now changed, and the older type of naturalist seems unfortunately about to disappear.

Sir John William Dawson was a native of Nova Scotia, a Province which has produced more than its share of the Canadians who have risen to eminence in the various walks of life, having been born at Pictou on October 13th, 1820. He died at Montreal on November 19th, 1899, at the age of 79.

His father, James Dawson, was a native of Aberdeen, Scotland, and came to Nova Scotia to fill a position in

a leading business house in Pictou, and on the termination of his engagement began business there on his own account.

While still at school in Pictou, at the age of 12, he developed a love for Natural Science, inherited from his father, and made large collections of fossil plants from the Nova Scotia coal measures, so well exposed about his native place. He speaks of himself at the time as being a "moderately diligent but not a specially brilliant pupil." On leaving school he studied at Pictou Academy, and subsequently at the University of Edinburgh. While at the former seat of learning, at the age of 16, he read before the local Natural History Society his first paper, having the somewhat ambitious title "On the Structure and History of the Earth." He returned to Nova Scotia in 1847, and two years later went to Halifax to give a course of lectures on Natural History subjects in connection with Dalhousie College, and organized classes for practical work in mineralogy and palaeontology. These were attended by students, citizens and pupils of higher schools, a foreshadowing of university extension. In 1850, at the age of 30, having already attracted some attention by the publication of a number of papers, reports and lectures, he was appointed Superintendent of Education for Nova Scotia. From this time he became known in his native province as an indefatigable promoter of educational progress and a founder of educational institutions. His work in connection with this position obliged him to travel continually through all parts of the Province, and on these journeys he accumulated that immense mass of information concerning the geology and mineral resources of Nova Scotia, which are incorporated in his largest work, that entitled *Acadian Geology*.

Sir Charles Lyell, in 1841, on his first visit to America, met Sir William, and was by him conducted to many

places of geological interest in Nova Scotia, and on his subsequent visit in 1852 they together continued their studies in Nova Scotian Geology.

About this time the governing body of McGill College at Montreal were looking about for some one fitted to assume the Principalship of the Institution, and to re-organize it.

The College, founded by Royal Charter in 1821, had made but slow progress in its earlier years, and was at this time, through litigation and other causes, almost in a state of collapse. Sir William—then Mr. Dawson—was pointed out to the Governors of the College by Sir Edmund Head, then Governor-General of Canada, as a man who, if his services could be secured, was eminently fitted to undertake the task of reconstructing the University. In the meantime, ignorant of all this, he was prosecuting a candidature for the chair of Natural History in his Alma Mater, the University of Edinburgh rendered vacant by the death of Professor Edward Forbes, and in which he was strongly supported by the leading geologists of the time. By a strange coincidence, just as he was about to leave Halifax for England in connection with this candidature, intelligence arrived that the Edinburgh chair had been filled at an earlier date than his friends had anticipated, and at the same time a letter was received offering him the Principalship of McGill.

The services of Mr. Dawson were accordingly secured, and in 1855 he assumed the Principalship of McGill College, stipulating at the same time that the chair of Natural History should be assigned to him.

Sir William Logan, in a letter to his brother, James Logan, dated November 29th, 1855, writes as follows:—
“I see by the newspapers that my friend, Mr. Dawson, has been regularly installed as Principal of McGill College. He will be a support to the Survey, for he is really a man of science.”

Nearly forty years later, Sir William, in reviewing the progress of the University in one of the Annual University Lectures, spoke as follows:—

“When I accepted the Principalship of McGill I had not been in Montreal, and knew the College and men connected with it only by reputation. Materially, it was represented by two blocks of unfinished and partly ruinous buildings standing amid a wilderness of excavators’ and masons’ rubbish, overgrown with weeds and bushes. The grounds were unfenced and pastured at will by herds of cattle, which not only cropped the grass but browsed on the shrubs, leaving unhurt only one great elm, which stands as the “founder’s tree,” and a few old oaks and butternuts, most of which had to give place to our new buildings. The only access from the town was by a circuitous and ungraded cart-track almost impassable at night. The buildings had been abandoned, and the classes of the Faculty of Arts were held in the upper story of a brick building in the town, the lower part of which was occupied by the High School. I had been promised a residence, and this I found was to be a portion of one of the detached buildings aforesaid, the present east wing. It had been very imperfectly finished, and was destitute of nearly every requisite of civilized life, and in front of it was a bank of rubbish and loose stones, with a swamp below, while the interior was in an indescribable state of dust and disrepair. Still we felt that the Governors had done the best they could under the circumstances, and we took possession as early as possible.

So far out of town were the College grounds at that time that the tradesmen in town frequently declined to send to the College goods purchased from them, stating that they “could not be expected to deliver goods in the country.”

The teaching staff of the University as he found it

consisted of three faculties, those of Law, Medicine and Arts. The Faculty of Law, then recently organized, had two professors and two lecturers. The Faculty of Medicine, the oldest and most prosperous of the three, had ten professors and a demonstrator. The Faculty of Arts had four professors and a lecturer, and all of these except one gave only a part of their time to College work.

When it is remembered that the University has now one hundred and twenty professors and instructors of various grades and an equipment which is in all departments fairly good, and in some of them unsurpassed, some idea may be gained of the progress which the institution made under Sir William Dawson's care and guidance.

As Professor of Natural Science Sir William at this time delivered courses in Chemistry, Botany, Zoology and Geology, and Natural Science became a very favorite study among the students, for he was an excellent lecturer, and his enthusiasm for these studies was communicated to all who heard him. As years went on the instruction in the first three of these subjects was undertaken by others, and a special chair of Geology and Palæontology was endowed by his old friend and co-worker, Sir William Logan, a chair which he held until his final retirement. His teaching work, however, formed but a small part of his daily labors. In addition to administering the affairs of the University, he was first and foremost in every movement to further education in the province, and no educational board was complete without him. He was the Honorary President of the Natural History Society, and not only never missed a meeting or a field day, but also contributed a very large number of very valuable papers to the *Canadian Naturalist* and the *Record of Science*. He also identified himself closely with many other societies in Montreal, and spared neither time nor labor on their behalf.

Over and above all this he found time to carry out

original work along several lines, achieving most valuable results—as well as to write many popular works on science, more especially in its relation to religion. Original investigation he always considered to be one of the chief duties and pleasures of a man of science. Most of his work along these lines was done during his summer vacations; in fact, he was led to accept the position of Principal in McGill chiefly by the fact that the vacations gave him leisure and opportunity for work of this kind.

He was always very progressive in his ideas relative to the scope and development of University teaching, and was continually urging the endowment of new chairs and the broadening of University work, so that all young men wishing to train themselves for the higher walks of life might in the University find their need supplied. As an instance of this it may be mentioned that so far back as 1858 he succeeded in establishing a school of Civil Engineering, which after a severe struggle for five years succumbed to some unfriendly legislation.

“Some men may regard these efforts as failures which should not be referred to,” said Sir William in an address delivered in 1870. “For my own part, I am not ashamed of them; there is not one of them which is not important to the material progress of this country, and there is not one of them which by us or by others will not at length be successfully carried out. I do not despair of any of them, and I am prepared should I remain in this University to watch for the opportunity to revive them when favorable circumstances shall occur. We wait for some Canadian Lawrence or Sheffield to endow for us a Scientific School like those of Harvard or Yale, which have contributed so greatly to the wealth and progress of New England.” Before many years the great benefactor appeared, and, through Sir William Macdonald’s princely gifts, it became possible to revive the old Civil Engineering

and Chemistry Schools and develop them into the present Faculty of Applied Science with its numerous departments, its full staff of instructors and excellent equipment.

Sir William Dawson, furthermore, never hesitated, if funds were not forthcoming in sufficient amount for those purposes, to subscribe large sums out of his own limited private means, and he was also the continual helper of needy students desiring to avail themselves of the University's teaching.

The Peter Redpath Museum may be said to owe its existence to his untiring labors and to the very considerable amounts of money which he spent upon its collection.

Sir William's attainments and the value of his contributions to science were widely recognized, and he was elected an honorary or corresponding member of many learned societies on both sides of the Atlantic. He was made a Fellow of the Geological Society of London in 1854 and the Royal Society in 1862. He was the first President of the Royal Society of Canada, and has occupied the same position in the Geological Society of America and in both the British and American Associations for the Advancement of Science. He was made a C.M.G. in 1883 and a Knight Bachelor in the following year.

After a long life of continuous labor, Sir William's health in 1893 became seriously impaired, and it became necessary for him to lay aside his work for a time and go abroad. Failing to recover his strength, however, he resigned his position as Principal in June, 1893, and retired from active work. During the later years of his life his strength gradually ebbed away, and what little work he could undertake consisted in arranging his collections and working up some unfinished papers. Several of these were published in 1894 and 1895, but the years of quiet labor in his favorite pursuits to which he looked forward at this time were cut short by a series of

sharp attacks culminating in partial paralysis, which forbade further effort. During the past few years from time to time his strength rallied somewhat, and he attempted to resume his work. Only a few days before his death he penned a short essay on the Gold of Ophir. He passed away on the 19th of last month, very peacefully and without pain. We may say, in the words of Dr. Peterson, his successor in the Principalship of the University: "For such a painless passing out of life no note of sorrow need be struck. There is no sting in a death like his; the grave is not his conqueror. Rather has death been swallowed up in victory—the victory of a full and complete life, marked by earnest endeavor, untiring industry, continuous devotion and self-sacrifice, together with an abiding and ever-present sense of dependence on the will of Heaven. His work was done, to quote the great Puritan's noble line, 'As ever in his great Taskmaster's eye.'"

Lady Dawson, with three sons and two daughters, survive him, of whom the eldest, Dr. George M. Dawson, the present Director of the Geological Survey of Canada, has inherited his father's love for geological studies, and has achieved wide distinction in the world of science.

Sir William's first original contribution to science was a paper read before the Wernerian Society of Edinburgh in 1841, on a species of field mouse found in Nova Scotia. From that time onward he was a continuous contributor to scientific journals and to the publications of various learned societies. His papers were very numerous, and covered a wide range of subjects in the domain of Natural History. No less than 128 titles are recorded under his name in the Royal Society's Catalogue. The most important work of his earlier years was an extended study of the geology of the Maritime Provinces of the Dominion of Canada. His results are embodied in his *Acadian Geology*, already mentioned, a volume of nearly 1,000

pages, accompanied by a colored geological map of Nova Scotia, which has passed through four editions. In writing to Sir William in 1868, Sir Charles Lyell says of this work, "I have been reading it steadily and with increased pleasure and profit. It is so full of original observation and sound theoretical views that it must, I think, make its way, and will certainly be highly prized by the more advanced scientific readers." It is the most complete account which we have of the geology of Nova Scotia, New Brunswick and Prince Edward Island, although since it appeared large portions of these provinces have been mapped in detail by the Geological Survey of Canada, and Sir William's conclusions modified in some particulars. In carrying out this work Sir William paid especial attention to the Palæontology of the Carboniferous system and to the whole question of the nature and mode of accumulation of coal. He subsequently studied the Palæontology of the Devonian and Upper Silurian Systems of Canada, discovering many new and important forms of plant life, as well as that of the Tertiary of Southern British Columbia, the results of these studies appearing in the publications of the Canadian Geological Survey. He also contributed a volume entitled "The Geological History of Plants" to "Appleton's International Scientific Series." In 1863 he published his *Air Breathers of the Coal Period*, in which were collected the results of many years' study in the fossil batrachians and the land animals of the coal measures of Nova Scotia. The earliest known remains of microsauria were then discovered by him in the interior of decayed tree stumps in the coal measures of South Joggins. The results of his later studies in these creatures were embodied in a series of subsequent papers which appeared from time to time.

On taking up his residence in Montreal his attention was attracted to the remarkable development of pleisto-

cene deposits exposed in the vicinity of the city, and he undertook a detailed study of them, and especially of the remarkably rich fossil fauna which they contain. He also studied subsequently the pleistocene deposits of the Lower St. Lawrence, and instituted comparisons between them and the present fauna of the Gulf of St. Lawrence and of the Labrador coast. The results of these studies appeared in a series of papers as the work progressed, and were finally embodied in a volume entitled "The Canadian Ice Age," which was issued in 1893 as one of the publications of the Peter Redpath Museum of McGill University. This is one of the most important contributions to the palaeontology of the pleistocene which has hitherto appeared.

Sir William's name is also associated with the renowned Eozoon Canadense, discovered by the Geological Survey of Canada in the Grenville limestones of the Canadian Laurentian, and described by him in 1864 as a gigantic foraminifer. Concerning this remarkable object there has been a widespread controversy and a great divergence of opinion. Some of the most experienced observers in the lower forms of life, such as Carpenter, accepted it as of organic origin, while others considered it to be inorganic. And, while the balance of opinion now probably favors the latter view, its resemblance microscopically to certain organic forms is certainly most remarkable. The literature of this subject, which includes many papers by Sir William, is quite voluminous, but the chief facts are summed up in his book, entitled "The Dawn of Life," which appeared in 1875.

Sir William was also a prolific writer of popular works on various geological topics. Among these may be mentioned his "Story of the Earth and Man," his "Fossil Men and their Modern Representatives," his "Meeting Place of Geology and History," and his "Modern Science and Bible Lands." These books, all written in a very enter-

taining style, had a wide circle of readers, and many of them passed through several editions.

Other volumes from his pen, as well as many papers contributed to various religious publications, treated of the relation of science and religion. One of the earliest of these was entitled "Archaia," and dealt with the relations of historical geology to the Mosaic account of the Creation. In others he considered the relation of the evolutionary hypothesis to religious thought. He was always, but especially in his earlier years, a strong opponent of the Theory of Evolution, and vigorously combated it. Being above all things deeply religious and considering the evolutionary explanation of the origin of the universe to be contrary to the teachings of Scripture, he refused to accept it. This was, after all, but the weakness of a strong man. It did not, however, tend to enhance his reputation among men of science, who are commonly willing to let truth work out its own results, knowing that apparent contradictions are merely indications that the whole truth has not been discovered.

These works on the relation of science and religion met a popular need, and were of great comfort to many a pious soul who feared that the whole framework of faith was being swept away by the advancement of science. Their value, however, was not permanent, and they are not the works by which Sir William Dawson will be remembered. His reputation is founded on the great contributions to our permanent stock of knowledge which he has made, and which are embodied in his works on pure science, representing achievements of which any man might well be proud.

Sir William had a courteous or rather a courtly manner, based on a genuine consideration for all. He was respected and beloved by all who knew him, and especially endeared himself to all who studied under him. The pre-eminent note of his character was simplicity and

singleness of purpose. His loss will be felt especially in the Institution with which he was long connected, but his name has been perpetuated in connection with the geological department of his University by the establishment of a second chair in geology, to be known as the Dawson Chair, which has just been endowed in his memory by Sir William Macdonald.

The following letter will be read with interest, as the last communication to the Natural History Society of Montreal, made by the late Sir William Dawson. It shows the high regard in which he held the Society and the value he attached to its work. It may be counted his dying testimony to the importance to Montreal of such an institution and a call to the citizens to rally around it and secure its prosperity. Sir William's last spoken word to the friends of the Society, on the occasion of the conversazione held under the auspices of the late Governor-General, the Earl of Aberdeen, was by way of advocating the creation of a small endowment fund for the Society, a beginning of which has since been made and which it will be the continued aim of the Society to raise:—

LITTLE METIS, June 17, 1899.

“MY DEAR SIR,—I beg to thank you, and through you the Natural History Society, for your kind communication of the 9th, and for the honor the Society has again conferred on me. I deeply regret that illness prevented me from taking an active part in the work of the Society, and from enjoying the pleasure of personal association with its members. Should it please God to restore my strength sufficiently it will give me much pleasure to contribute what I can to its work. I have, however, at present little expectation of this.

“I rejoice to see from the report of the annual meeting that the Society continues to grow in public estimation

and trust that the increasing appreciation of the value of natural history studies to the industrial interests of the Dominion may tend still further in this direction, and may cause our Government more fully to emulate that of the United States in the practical cultivation of natural history, at least for its industrial uses.

“I shall be pleased if you will kindly present this note to the Society at an early meeting.

“Yours, very sincerely,

“J. WM. DAWSON.

“J. S. Buchan, Esq., Corresponding Secretary, N. H. S.”

