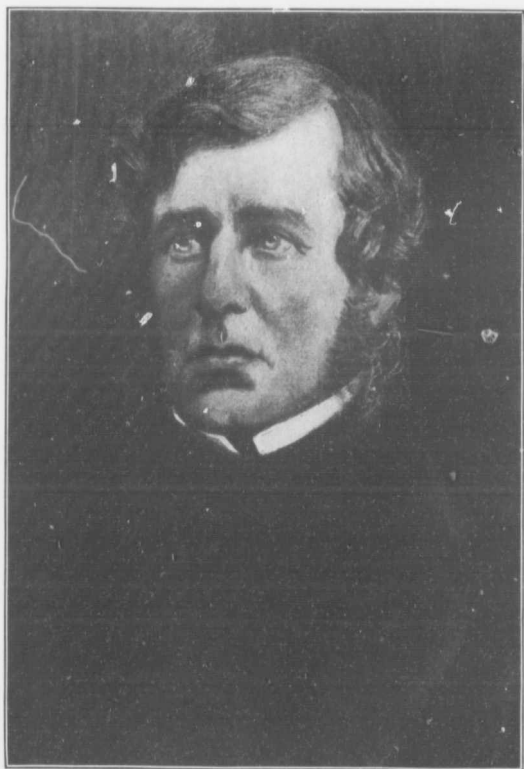


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BRIEF BIOGRAPHICAL SKETCH OF
ELKANAH BILLINGS.

BY HENRY M. AMI, OTTAWA, CANADA.

From the American Geologist, May, 1901.



E. Billings

[From *The American Geologist*, Vol. XXVII, May, 1901.]

BRIEF BIOGRAPHICAL SKETCH OF ELKANAH BILLINGS.

Palaeontologist to the Geological Survey of Canada from 1856 to 1876.

By HENRY M. AMI, Ottawa, Canada.

The late Elkanah Billings, who for twenty years was palaeontologist to the Geological Survey of Canada, and was the founder of the *Canadian Naturalist and Geologist*, was born in the township of Gloucester, along the right bank of the Rideau river in the old, and now demolished Billings homestead situated a few yards below the present bridge which spans that river at the little village of Billings' Bridge. He was the second son of Mr. Bradish Billings, whose ancestors came from England, while those on his mother's side came from Wales. His grandfather was a Brockville physician, Dr. Elkanah Billings, after whom the subject of this sketch was named. Both his parents, however, were born in the United States, his father in Massachusetts, and his mother in New York state.

From Dr. Whiteaves' obituary notice of Elkanah Billings the following extracts are made:

"Elkanah Billings, our esteemed associate for so many years, was born at the family homestead on the 5th of May, 1820. His first teacher was a governess (Miss Burrit), his next a family tutor named Maitland, and he afterwards went to three small schools in the neighborhood, kept respectively by Messrs. Colquhoun, Collins and Fairfield. In 1832 the youth was placed at Rev. D. Turner's school in Bytown, as a day pupil and after four years' interval, during which he remained at home on the farm, his parents sent him, in 1837, to

the St. Lawrence Academy at Potsdam, in the state of New York, of which the Rev. Asa Brainard was principal.

On leaving this institution Mr. Billings entered the Law Society of Upper Canada as a student in 1839, and was articulated to Mr. James McIntosh, a barrister in Bytown. Mr. McIntosh died in the same year and was succeeded by Mr. Augustus Keefer, with whom Mr. Billings remained for nearly four years; and it appears that he was for a short time also in the office of the late Mr. George Byron Lyon Fellowes in the same town. In 1843 he went to Toronto, and studied for a twelve-month longer with the legal firm of Baldwin & Wilson, and was admitted to practice as an attorney in the fall of 1844. Soon after this he returned to Bytown and entered into partnership with Mr. Christopher Armstrong, who was then one of the judges of the county court, but a law having been passed prohibiting judges from pleading, the partnership was dissolved after having lasted only six months."

In 1845 Mr. Billings married a Toronto lady, a sister of the Hon. Judge Adam Wilson. Between 1845 and 1848, he practiced law in Bytown, having been called to the bar in 1845; in 1849, however, he removed to Renfrew where he practiced his profession until June, 1852, when he returned to Bytown, where most of his time was engaged in journalistic and scientific pursuits. He occupied the editorial chair of *The Citizen* from the fall of 1852 until late in 1855. Many of Mr. Billings' leading articles in the *Citizen* of those days comprised popular disquisitions on geological topics and natural history subjects, which served to indicate the trend of thought of the man whose subsequent life led him into inquiries of the highest scientific type, whose writings are now held in highest esteem and well known the whole scientific world over. It was during these years of his residence in Bytown that he began the systematic study of the fossiliferous rocks which are so extensively developed along the banks of the Ottawa river in the vicinity of our city.

Probably at first entered upon more as a pastime and relaxation from his journalistic duties these researches culminated in his final adoption of geological studies, especially in the department of fossil organic remains, for the remainder of his life.



The magnificent collections of Crinoidea, Cystoidea and Asteroidea from the Trenton limestone of Ottawa, that are now exhibited in the museum of the Geological Survey of Canada, testify to his remarkable success and energies in these researches, for it must be remarked that these organisms are exceedingly rare and great diligence as well as patience must be exercised if satisfactory results are to be obtained.

Early in 1856 Mr. Billings issued the first number of the *Canadian Naturalist* of which, and the succeeding numbers of the first volume, he was practically the sole contributor. The production of this number marks an epoch in the history of the progress of scientific research and discussion in Canada. The articles contained in the first volume of the *Canadian Naturalist and Geologist* at once stamp Mr. Billings as a master in description both of fossil organic remains and of recent natural history objects.

Previous to the issue of this magazine, Mr. Billings had been brought into direct communication with Sir William Logan, then director of the Geological Survey of Canada, and it was not long, yea, but few months elapsed, until the latter with his usual clearheadedness engaged the services of Mr. Billings, his friend, as paleontologist to the Geological Survey of Canada. It was in August, 1856, that Mr. Billings entered upon his duties as government paleontologist and, until his death, which took place June 14, 1876, a period of nearly twenty years elapsed in which he worked ceaselessly in the domain of paleontology, and in assisting his chief and director in assigning geological outcrops to the various geological horizons of eastern Canada, involving numerous and difficult problems which made it a task of no mean importance.

His first geological paper was published in April, 1854, and was entitled "On Some New Genera and Species of Cystoidea from the Trenton Limestone." It was published in the *Canadian Journal*, Toronto, page 215. On removing to Montreal in 1856, Mr. Billings removed also the headquarters of his magazine. *The Canadian Naturalist and Geologist*, from that date on was published in Montreal under the same designation and under the name of *Canadian Naturalist and Q. J. So.*, until 1883, when it was superseded by the *Canadian Record of Science*, and became the recognized official

organ of the Natural History Society of Montreal. Of this society he was regularly elected a vice president for 14 years, having declined the office of president, proffered to him on many occasions.

In 1858 Mr. Billings made a visit to Europe, where he came in contact with leading geologists of the time and examined various collections in geology in Great Britain. There he studied most zealously and made a comparison of the Silurian (including both the lower and upper Silurian of Murchison) and Devonian fossils of western Europe, with those of Canada, and arrived at the conclusion that there were but few species identical with those of Canada. In April, 1858, when in London, he was elected a fellow of the Geological Society of London; Sir Roderick Murchison, Professor A. Ramsay and Professor T. H. Huxley, having nominated him. He visited Paris where he met a number of distinguished men, amongst others the great Bohemian paleontologist, the Abbe Joachim Barrande, with whom and in conjunction with Sir William Logan, a most interesting discussion arose regarding the age of several rock formations occurring in the province of Quebec, to which Sir William Logan gave the name "Quebec Group"—a controversy which included many difficult problems of which the "Taconic Question" was a conspicuous factor.

The term "Quebec Group" will invariably be associated with the excellent work performed by Sir William Logan and Mr. E. Billings.

In 1854, two years before his appointment on the Geological Survey staff, Mr. Billings accompanied Mr. James Richardson in an examination of the fossiliferous rocks of Point Levis, Que.; in the following year he also accompanied the same field geologist in his explorations at Point Levis, Que., and Thetford, in the township of Bosanquet, County of Lambton, Ontario.

Of Mr. Billings' work prior to 1863, Sir William Logan gives the following succinct account on page 7 of the "Preface" in his "Geology of Canada," published in 1863:

"Mr. Billings was appointed paleontologist to the survey in 1856 and since then his unremitting attention has been devoted to the study of the palaeozoic fossils of Canada, of

which very considerable collections have been made in our various explorations.

"Of these fossils he has described in the publications of the survey and in the scientific journals of the province, 526 species, of which 395 are Lower Silurian, 67 Middle and Upper Silurian, and 64 Devonian.

"He has thus greatly facilitated the means of determining with precision the limits and distribution of our geological formations, and of the economic substances which they contain. In order to insure uniformity in the paleontological part of this work, all the palaeozoic fossils mentioned in it have been submitted to the inspection of Mr. Billings, and the species are therefore all given on his authority. Of the described Lower Silurian species found in Canada, not including those of the Quebec group, he has prepared a catalogue, showing their vertical distribution, and referring to the publications in which the descriptions and figures will be found. This catalogue has been introduced into the appendix to this volume."

Then after a brief sketch of the early studies made by himself in the "Quebec Group" of rocks, Sir William points out what part Billings played in the unravelling of that interesting succession of palaeozoic sediment. He goes on to say: "But the discovery in May, 1860, of the Point Levis fossils at once enabled Mr. Billings to conclude that the rocks of the Quebec group must be placed near the base of the second fauna of Barrande or about the horizon of the Calciferous and Chazy formation. This opinion, our subsequent investigations in the neighborhood of Lake Champlain, and of the Strait of Belle Isle, have completely borne out, and there now remains little doubt that the attitude of the rocks in question in the vicinity of Quebec is due to a great overlap, which runs from southwest to northeast through the whole length of the eastern part of the province, and extends in both directions far beyond it."

The above serves to show clearly the remarkable work done by Billings in that most difficult field east of the great Champlain, St. Lawrence or Appalachian fault.

His critical eye detected differences where they had not been seen and by his knowledge the vertical range of fossil remains was firmly established.

Notwithstanding all the attacks that have been made upon the validity of the term "Quebec Group," and the discussions on its significance, it is as truly a natural group or division in the succession of paleozoic sediments in eastern Canada today as it was in the 50's and 60's, and the chapters devoted to this most important study in the "Geology of Canada" for 1863, are replete with wisdom and forethought.

On several occasions Mr. Billings made extensive collections in the Silurian as well as in the Devonian formations of Ontario and in the vicinity of Montreal, as can be seen from the collections now in the geological department, but the bulk of his time was devoted to the determination of geological horizons for mapping purposes and the description of new genera and species brought in to the department by the various field-geologists. Of genera new to science, Mr. Billings described no less than 61 and in all described 1,065 new species of fossil organic remains from various horizons in the paleozoic of Canada. He also contributed many papers on natural history and zoology.

He did much in assisting Sir William Logan to establish and build up the geological museum, for, besides the large number of new species which he described, he identified as many more, from Canada, with forms previously described by Conrad, Hall, Emmons, Vanuxem and Sowerby, and other paleontologists of America and Europe.

His writings indicate a clear and precise mind, coupled with a rare judgment; they are couched in a phraseology simple but to the point. He published upwards of 170 distinct papers, memoirs or reports, many of which are now very difficult to obtain or entirely out of print. The bulk of his writings are embodied in the reports of the Geological Survey of Canada, comprising the figures and descriptions of "Canadian Fossil Organic Remains," or Decades 1, 3 and 4; the "Paleozoic Fossils," Vol. 1, parts 1 to 5; Pal. fos., Vol. 2, part 1; part 2 of which last is still unpublished. While residing in Montreal he was a constant contributor to the Canadian Naturalist, he also wrote important papers for the *American Journal of Science and Arts*, New Haven, the *Geological Magazine*, London, and the *Journal of the Canadian Institute*, Toronto.

He was an indefatigable worker; from early morning till

late at night he was at his desk, and later at home into the hours of night he carried on his studies, and thus accomplished much in those twenty years of official connection with the Geological Survey of Canada.

Billings left behind him a large amount of unfinished work, numerous and important lists of organic remains bearing upon the geology of the older provinces. Many of these lists would form most important contributions to Canadian geology, should they ever be published. As noted by Dr. Whitceaves in his obituary sketch and *In Memoriam* paper, Vol. 8, No. 5, *Canadian Naturalist and Quarterly Journal of Science*, p. 261, "Mr. Billings died before he could describe the whole of the material he had studied and carefully examined, including collections by Sir William E. Logan and Professor (now) Dr. Robert Bell, in Gaspé, by Mr. T. C. Weston, at Arisaig; T. Curry, at Port Daniel and Bay of Chaleurs. The whole of the material from these localities had been carefully examined, and it only remained to write the descriptions of the different species, but this, alas, he was not destined to accomplish." Those who had the pleasure and privilege to know Mr. Billings, state that he was characterized "by great firmness and decision and an unswerving love of truth and justice, and by an unaffected and winning modesty of demeanor."

During his lifetime Mr. Billings received many tokens of appreciation. In 1867 the Natural History Society voted him its silver medal for "his life-long efforts for the promotion of science in Canada." He was awarded a bronze medal (in Class I.) by the jurors of the International Exhibition of London in 1862, and a similar one at the Paris Exposition of 1867.

To do him honor and indicate to the world of science what Billings did for Canadian geology, many a paleontologist in America and Europe has described genera and species after him. The genera *Billingsia*, *Billingsite*, *Billingsella* and *Elkania* have been erected by Walcott, Hall, Ford and Hyatt, whilst upwards of thirty species of corals, crinoids, brachiopods, lamellibranchs, molluscs, cephalopods, ostracods, trilobites and other fossil organic remains bear his name.

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