

The fossils are dwarfed and starved-looking, but from their perfect preservation they have evidently lived on the spot where now found, and occur with a few indistinguishable plant-remains. The following are the species I collected:—*Productus semireticulatus*, var., largest one  $\frac{1}{2}$  inch, but generally much smaller; common. *Athyris ambigua*, largest  $\frac{3}{8}$  inch; scarce. *Lingula mytiloides*, rare, and very small. The late R. W. Skipsey many years ago found marine shells in the Coal-measures near Coatbridge, but the specimens were of fair size.<sup>1</sup>

The marine shells I obtained on the 23rd April appear to be pretty high up in the coal strata; and in the stream and on the side of the glen may be seen the Gillyhole Coal, at this part converted into columnar carbonite four feet thick by a small Trap sill; it is one of the finest examples of a 'burnt coal' bed in the west of Scotland. In the same glen there is also a small sill which has assumed a spheroidal structure. I saw no specimens of *Carbonicola* or any other Coal-measure shells in the marine band. I am sending some specimens to the British Museum.

MONKRIDDING, KILWINNING.  
25th April, 1904.

J. SMITH.

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OBITUARY.

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PROFESSOR CHARLES EMERSON BEECHER, PH.D.

BORN OCTOBER 9, 1856.

DIED FEBRUARY 14, 1904.

(WITH A PORTRAIT: PLATE X.<sup>2</sup>)

By the death of Professor Beecher, American palæontology and geology have sustained a great loss, and one which is also sincerely felt by many friends and fellow-workers in England and on the Continent. Although only 47 years of age, he had attained to a high degree of eminence in his University as a teacher and lecturer, whilst his published researches, especially on Trilobites, the Merostomata, and Phyllocarida, entitled him to the first rank as an original investigator in palæozoology; nor had he neglected the higher forms of extinct life, as is shown by his reconstruction of Dinosaurs in the Peabody Museum at Yale.

Charles Emerson Beecher was born at Dunkirk, New York, Oct. 9th, 1856. He was educated in the High School at Warren, Pa., and graduated at the University of Michigan, taking his B.S. in 1878. During the ten succeeding years he was engaged as an assistant to the veteran geologist, Professor James Hall, upon the staff of the Geological Survey of the State of New York, and many specimens now exhibited in the State Museum at Albany testify to his ability as a collector and his skill in developing and mounting invertebrate fossils.

Professor Beecher was appointed in 1888 to the charge of the invertebrate fossils in the Peabody Museum, under the late Professor

<sup>1</sup> Trans. Geol. Soc. Glasgow, vol. ii, p. 52.

<sup>2</sup> For permission to reproduce Professor Beecher's portrait we are much indebted to Mr. J. McK. Cattell, of *The Popular Science Monthly* Garrison on Hudson, New York, U.S.A.—EDIT. GEOL. MAG.



**CHARLES EMERSON BEECHER, PH.D.,**  
**YALE UNIVERSITY.**

O. C. Marsh, and in 1889 he received the degree of Ph.D. from Yale University for his memoir on the Brachiospongidae, a remarkable group of Silurian sponges. In the July of this year he made his first geological trip to the far West, being sent by Professor Marsh to join a party of collectors in Converse County, Wyoming, where he remained till September. During this trip he obtained one of the largest complete skulls of *Triceratops*, now in the Yale Museum. Shortly after this Professor Marsh arranged for Dr. Beecher to visit England and make studies in the British Museum, accompanied by the late Dr. Baur. [Here he made the writer's acquaintance, and became an intimate friend and correspondent respecting their mutual studies upon the Arthropoda.—H. W.] He also, with Dr. Baur, visited France and Germany. During the preparation for his degree at Yale, Beecher had taken geology under the late Professor Dana, and in 1891–92, when the latter was ill, Professor Beecher conducted the classes in geology for him. In 1892 he was made Assistant-Professor of Historical Geology in the Scientific School, holding the post till 1897, when he was appointed Professor of Historical Geology and a member of the Governing Board in the Sheffield Scientific School. On March 10th, 1902, he was made University Professor of Palæontology at Yale.

Professor Charles Schuchert writes:—“In 1893 there was discovered in Lower Silurian shales near Rome, New York, a thin band not more than one-fourth of an inch thick, in which nearly all the Trilobites (*Triarthrus* and *Trinuclaus*) preserve antennæ and legs. Trilobite legs had been known before in a few isolated and very imperfectly preserved specimens, and from a series of about 250 sections cut from more than 3,000 enrolled individuals of a species found near Trenton Falls. Antennæ had not previously been seen. This important discovery by a local worker induced Professor Beecher to take out several tons of the shale, and later many hundred individuals were developed by mechanical means to show the ventral anatomy. But few can appreciate the great amount of time and the remarkable skill required to free these Trilobites from the adhering black shale, and to Beecher we owe our detailed knowledge of the ventral anatomy of *Triarthrus* and *Trinuclaus*. He published thirteen papers on these very primitive Crustacea, including a classification in which all Trilobites are arranged in three orders.” [Special mention should also be made of his enlarged models of the appendages of *Triarthrus*, and of the great *Stylonurus Lacoanus*, which are most valuable and instructive for Museums.—H. W.] “He was at work on an extensive treatise on these forms, in which he proposed to bring together all that is known regarding their anatomy. Unfortunately, this work had not progressed beyond the mechanical stage of preparation of material and the making of drawings.”

In 1899 Professor Beecher succeeded the late Professor O. C. Marsh as curator of the entire geological collections in the Peabody Museum at Yale, and became a member of the Board of Trustees of that Museum. He also held the position of Secretary to the Board,

and was a member of the Executive Committee. He was elected a member of the National Academy of Sciences, a Foreign Correspondent of the Geological Society of London, and a Fellow of the Geological Society of America. In 1900 he was elected President of the Connecticut Academy of Arts and Sciences, and filled the office for two years.

"In 1899 he presented his entire collection of fossils, containing upwards of 100,000 specimens, to Yale Museum. The gift was without conditions, and was given 'in grateful recognition of the honours and favours conferred upon me during my connection with the University.'

"Although Professor Beecher was interested in stratigraphic and descriptive palæontology, he published almost nothing in either branch of the science. Of stratigraphic and faunal papers he has five. Of new species apparently not more than thirty-one were described by him. Besides these he proposed seven new genera and seven new orders.

"His most philosophic paper, and the one which he himself thought best, is entitled 'The Origin and Significance of Spines. A study in evolution.' He states here that all spinose species when young are devoid of spines, and are derived from non-spinose ancestors. Forms attaining the limit of spine differentiation leave no descendants, and out of spinose types no new types are developed.

"Charles E. Beecher's scientific writings amount to about sixty-five in number. His standing among biologists and palæontologists was high, and he was the leader among the students of Brachiopoda and Trilobita. His palæontological work at Yale was essentially of a biological and philosophical character. As a preparator of fossils he had no equal, and as a collector was one of the best. He had the artistic temperament, and made most of the illustrations for his publications. He was a slow and very careful worker. Those who knew him well saw in him an enthusiast, but his exuberance was always held in check by his judicial qualities, which character made him also an excellent counsellor. He travelled extensively, read wisely, was a lover of the English masters and of Herbert Spencer's philosophy. He was orderly in his work, and, as he had the 'museum instinct' well developed, he made one of the best of museum curators."—*Professor Charles Schuchert*.

His past students bear the highest testimony to his worth as a teacher in science, both as a lecturer and as a demonstrator in the laboratory. As a friend, all who knew him appreciated his many excellent qualities and his sterling worth.

[Kindly favoured by Miss Lucy P. Bush from the *Yale Alumni Weekly*, New Haven, Conn., March 2nd, 1904.]

SIR CLEMENT LE NEVE FOSTER, D.Sc., F.R.S.

BORN MARCH 23, 1841.

DIED APRIL 19, 1904.

IN the death of Sir Clement Foster we mourn the loss of a geologist the most distinguished in this country for his scientific and practical knowledge of metalliferous mining, and of all matters relating to stone quarries and slate-mines.