"Description of a New Genus [*Stelidioseris*] of Madreporaria from the Sutton Stone of South Wales": Quart. Journ. Geol. Soc., vol. xlix (1893), pp. 574–578, and pl. xx.

"Observations on some British Cretaceous Madreporaria, with the Description of two New Species": GEOL. MAG., 1899, pp. 298–307.

"Description of a Species of *Heterastræa* from the Lower Rhætic of Gloucestershire": Quart. Journ. Geol. Soc., lix (1903), pp. 403–407, and figs. in text.

JOHN BELL HATCHER.[1]

BORN OCTOBER 11, 1861. DIED JULY 3, 1904.

THE Editor of the *Annals of the Carnegie Museum*, Pittsburgh, Pennsylvania, U.S., records with deep regret the death, on July 3rd, 1904, of his trusted associate, Mr. John Bell Hatcher.

Mr. Hatcher was born at Cooperstown, Brown County, Illinois, on October 11th, 1861. He was the son of John and Margaret C. Hatcher. The family is Virginian in extraction. In his boyhood his parents removed to Greene County, Iowa, where his father, who with his mother survive him, engaged in agricultural pursuits near the town of Cooper. He received his early education from his father, who in the winter months combined the work of teaching in the schools with labour upon his farm. He also attended the public schools of the neighbourhood. In 1880 he entered Grinnell College, Iowa, where he remained for a short time, and then went to Yale College, where he took the degree of Bachelor in Philosophy, in July, 1884. While a student at Yale his natural fondness for scientific pursuits asserted itself strongly, and he attracted the attention of the late Professor Othniel C. Marsh, the celebrated Naturalist, at that time palæontologist of the United States Geological Survey. Professor Marsh, as soon as the young man had received his diploma, commissioned him to undertake a palæontological investigation in south-western Nebraska. From the summer of 1884 until the year 1893 he was continuously in the employment of Professor Marsh. During these years he conducted explorations over a wide area in the States of Nebraska, the Dakotas, Montana, Utah, Wyoming, and Colorado. These expeditions to the western country, which usually began early in the spring, continued until late in the fall, or even into the early winter. He also collected in the winter months and early spring in Maryland and North Carolina. His success as a collector was phenomenal, and the scientific treasures which he unearthed greatly enriched the collections of the United States Geological Survey and of the Peabody Museum in New Haven. It was upon the collections of vertebrate fossils made by J. B. Hatcher that Professor Othniel C. Marsh based to a very large extent many of his most important papers, and to Hatcher more than to any other man is due the discovery and collection of the Ceratopsia, perhaps the most striking of all the extinct reptilia. Very little had been known about them, and before

[1] Reprinted, slightly abridged, from Dr. W. J. Holland's notice in *Annals of the Carnegie Museum*, vol. ii, No. 4 (1900), pp. 597–604.

Hatcher succeeded in discovering a large number of skulls and skeletons they were at best represented by a few fragments, the nature of which was hardly understood even by the most advanced students. At the time of his lamented death Professor Marsh was engaged in preparing a monograph upon this material, and it fell to his distinguished student, who had discovered these colossal creatures, to take up in 1902 the work which Marsh had left unfinished, and he was devoting himself to this work at the time of his death.

In 1890 Mr. Hatcher was made Assistant to the Chair of Geology in Yale University, and in 1893 he was elected Curator of Vertebrate Palæontology and Assistant to the Chair of Geology in the College of New Jersey at Princeton.

While at Princeton he continued his geological and palæontological explorations in the Western States with his usual enthusiasm and success. For many years he had cherished the wish to undertake the exploration of Patagonia and Tierra del Fuego from a geological and palæontological standpoint. He finally undertook the collection of a fund to enable him to carry out this object. Generous subscriptions were made by a number of the alumni and friends of Princeton University, and he himself out of his small savings contributed a large portion of what proved to be required to undertake the work. His plans were thoroughly approved and enthusiastically supported by Professor W. B. Scott, the Professor of Geology in Princeton. Three expeditions were made. The first extended from March 1st, 1896, to July 16th, 1897. On this expedition Mr. Hatcher was accompanied by his brother-in-law, Mr. O. A. Peterson, as an assistant. The second expedition extended from November 7th, 1897, to November 9th, 1898, when he was accompanied by Mr. A. E. Colburn as taxidermist. The third expedition was carried on from December 9th, 1898, to September 1st, 1899, when Mr. O. A. Peterson again accompanied Mr. Hatcher. The story of these expeditions has been published in the first volume of the Reports of the Princeton University Expeditions to Patagonia, which are being issued under the editorial supervision of Professor William B. Scott upon the J. Pierpont Morgan Publication Fund of Princeton University, the fund having been generously given by Mr. Morgan in order that the scientific information secured by Mr. Hatcher might be made known to the world. In the conduct of these expeditions J. B. Hatcher strikingly revealed not only his great scientific insight, but his undaunted courage and great tenacity of purpose. Twice he nearly lost his life, once as the result of a singular accident which befell him while taking a lonely road across the pampas, once while confined to his tent amidst the deep snows of winter by a violent attack of inflammatory rheumatism, from the ill effects of which he never quite recovered.

The results of Hatcher's explorations in Patagonia were of the most important character. The collections of vertebrate fossils made by him and his assistants, and now preserved at Princeton

University, are enormous in extent and of the very highest scientific value. Some of these collections were made by him at great personal risk, the strata in which they were found being only exposed for a few hours at low tide on the margin of the ocean. Working rapidly he and his assistant took up what they could, and then hurried back over the wide beach to the cliffs, to presently see the water from fifty to sixty feet deep rolling over the spot where they had been excavating. The explorers literally snatched their treasures from the hungry jaws of the ocean. In the fields of recent zoology and botany he made extensive collections. His geographical discoveries were of great importance. He added immensely to our knowledge of the interior of Patagonia, traversing vast territories upon which civilized man had never before planted foot. He discovered mountains and lakes, and traced the course of rivers which had never before been mapped. One of the great mountain ranges, by the consent of both the Argentine and Chilian Governments, bears his name. His decision that the crest of the Patagonian watershed in parts of its course lies far east of the crest of the southern Andean ranges, had an important bearing upon the question of the boundary-line between the Argentine Republic and Chile, and in the arbitration of this question, which has happily been settled without recourse to arms, as was at one time threatened, the discoveries of the young American explorer were brought into prominence in diplomatic circles.

On February 1st, 1900, J. B. Hatcher accepted the position of Curator of Palæontology and Osteology in the Museum of the Carnegie Institute in Pittsburgh, where his brother-in-law, Mr. O. A. Peterson, immediately after his return from Patagonia, had been employed as an assistant. Installed in his new post, with the assurance of the unqualified and generous support of the founder of the Institute in all wise efforts to make his work successful, he began to lay out in connection with the Director of the Museum plans to create one of the most important palæontological collections in America. For four summers in succession he carried on explorations in the Western States. In 1903 he was associated for a portion of the time with Mr. T. W. Stanton, of the United States Geological Survey, in an effort to ascertain the relative position and geological age of the Judith River beds, which had been for some time the subject of earnest discussion among geologists. His views in relation to this subject, which had been opposed by almost every other geologist in America, were finally ascertained to be correct, and it was a matter of great personal gratification to him, as the writer of these lines knows, that the accuracy of his observations and of his conclusions, which had been reached many years before, had been verified.

While Professor Hatcher wrote very little in relation to geology, he nevertheless was regarded as being one of the very ablest of American geologists, his great experience in the field and his close attention to the subject having given him a practical knowledge such as was possessed by few of his contemporaries. One of the

leading geologists in America, in speaking of him said to the writer, "I regard Professor Hatcher as one of the best informed geologists in the United States. He is pre-eminent in this field, though he sets comparatively small store by his attainments."

The last five years of his life, during which he was connected with the Carnegie Institute, were not only years in which he proved himself remarkably successful as a collector, but in which he revealed his ability as a scientific author. A number of important papers from his pen have appeared in the Annals and Memoirs of the Carnegie Museum. The first volume of the Reports of the Princeton University Expeditions was written by him during this time. He contributed numerous brief articles to various scientific journals, and in 1902 undertook for the United States Geological Survey the completion of the Monograph of the Ceratopsia which had been left unfinished by Professor Marsh at the time of his death. The writer believes that this great work had been brought so far that it will be possible to complete it with comparatively small effort on the part of some one reasonably familiar with the subject. Various other important papers of a monographic character had been begun. Unfortunately these for the most part are not in such condition that they can be published.

One of the great undertakings which had occupied much of his time and thought during the past eighteen months was the reproduction of the skeleton of *Diplodocus carnegiei*, a restoration of which had been ordered by Mr. Andrew Carnegie for the purpose of presentation to the British Museum of Natural History, the Trustees of which in February, 1903, had formally signified their acceptance of Mr. Carnegie's kind offer to have such a reproduction made for them. The superintendence of this work was a most congenial labour to him. On the 1st day of July, 1904, a small company of scientific men and women, together with the Trustees of the Carnegie Institute, had the pleasure of a private view of this restoration, which had been temporarily set up prior to its shipment to England. The absence of Professor Hatcher from the little company was feelingly alluded to by many. But none of the party dreamed, although he was known to be seriously ill, that he had reached the end of his life's work.

Mr. Hatcher's position as a palæontologist was unique. He is universally admitted by those who are most competent to pass judgment to have been the best and most successful palæontological collector whom America has ever produced. The larger proportion of the choicest vertebrate fossils now in the Peabody Museum at Yale University, in the collection of the United States Geological Survey, in the Museum of Princeton University, and in the Museum of the Carnegie Institute at Pittsburgh were collected by him. To a very large extent the American methods of collecting such remains, which are now universally admitted to be the best known, were the product of his experience in the field and of his careful thought. In a letter just received by the writer from Professor Henry Fairfield Osborn, the Palæontologist of the United

States Geological Survey, he says, alluding to the death of Professor Hatcher: "I can hardly tell you how shocked and grieved I am. I had often thought of the probability of Hatcher's death while in the field when taking great risks and entirely away from medical and surgical attendance, but of his death at home I had not thought a moment. In his intense enthusiasm for science, and the promotion of geology and palæontology, and the tremendous sacrifices he was prepared to make, and *had made*, he was a truly rare and noble spirit, the sort of man that is vastly appreciated in England and in Germany, but I fear very little appreciated in America. His work as a collector was magnificent, probably the greatest on record."

Professor W. B. Scott, in the columns of *Science*, says: "Hatcher may be said to have fairly revolutionized the methods of collecting vertebrate fossils, a work which before his time had been almost wholly in the hands of untrained and unskilful men, but which he converted into a fine art. The exquisitely preserved fossils in American museums, which awaken the admiring envy of European palæontologists, are, to a large extent, directly or indirectly due to Hatcher's energy and skill, and to the large-minded help and advice as to methods and localities which were always at the service of anyone who chose to ask for them." Testimony of like character as to the great achievements of Professor Hatcher has come from many other sources.

Hatcher was an indefatigable student and a very keen observer. He was fertile in resources. He had great mechanical aptitudes, and succeeded, sometimes when alone, by patient effort in accomplishing apparently impossible tasks in the removal of huge and weighty objects from difficult positions, which would not have been undertaken by others. The writer recalls one or two cases in which he dared great physical risks and even death, when alone, far from human companionship, in extracting large masses from their original position and moving them by a skilful arrangement of levers to points where they could afterwards be taken up. One such instance occurred in the autumn of 1903, and the writer could not refrain, while admiring the courage and skill displayed, from earnestly warning Mr. Hatcher against the repetition of such risks as he at that time assumed in attempting to handle a block of rock weighing nearly a ton without the assistance of other men.

While accomplishing a vast amount of most important work during the last five or six years of his life, there was hardly any time in which, as the result of the illness and exposure which he had undergone in Patagonia, he did not suffer pain, and at times of a most excruciating character, and yet he was patient and uncomplaining.

Perhaps the most striking characteristic of Mr. Hatcher was his extreme modesty. He was always reticent in speaking of what he had done, and shunned publicity other than that which came to him through his scientific writings.

Hatcher was a most charming companion, and when he could be prevailed upon to relate the story of his adventures in strange and distant places, the listener found his companionship fascinating.

Though living so much of his life in the wilderness, he was a man of strong domestic attachments. He loved his home, and to none of all the wide circle of his acquaintance does his untimely death bring deeper and more poignant grief than to his wife and four young children. To them the writer renews in these lines his expression of the deepest sympathy. W. J. Holland.

MISCELLANEOUS.

Deslongchamps' Types of Jurassic Brachiopoda.—The British Museum (Natural History) has received a valuable donation, one particularly interesting to students of British Jurassic Brachiopods. It consists of about 100 plaster casts of the types (holotypes, hypotypes), etc., of the Jurassic Brachiopoda figured by E. Deslongchamps in the Paléontologie Française Terr. Jurass., with a few other treasures of the Deslongchamps Collection figured elsewhere. Among the latter is a cast of the holotype of the very rare *Rhynchonella Deslongchampsi*, Davidson—the Museum already possesses the historic Tesson example of this species; also a cast of the holotype of *Terebr. biplicata* (Brocchi), which is not a Cretaceous fossil at all, but is a Jurassic *Ornithella*. Among the Pal. Franç. specimens the examples of *T. conglobata, T. Ferryi, T. Jauberti*, and others of Deslongchamps' species will be of especial interest. The Director, Professor E. Ray Lankester, F.R.S., has presented this fine series to the Museum.

Mr. C. Fox-Strangways, who joined the staff of the Geological Survey under Sir Roderick Murchison in 1867, has retired from the public service. During the course of his long, detailed, and invariably careful work in the field, he has surveyed large areas in Yorkshire, including portions of the great Coalfield, the country around Harrogate, and most of the moorlands and wolds of the North and East Ridings. Thence crossing the Humber he continued work in North Lincolnshire, and finally passed on to Leicester, from which town as a centre he has re-surveyed the Leicestershire Coalfield, Charnwood Forest, and a large area extending from the borders of the Warwickshire Coalfield across the Liassic vale east of Leicester. The results of this work have been published in numerous maps, sections, and memoirs, amongst which may be mentioned two volumes dealing particularly with the Jurassic rocks of Yorkshire. Apart from his official work Mr. Fox-Strangways has stirred up much local interest in geology in the localities where he has lived and laboured, especially at Leicester, where his services in conducting excursions have been frequently given, and have always been highly appreciated.

Cotteswold Naturalists' Field Club.—The President, Dr. C. Callaway, refers (Proc., vol. xv, part 1) to the loss sustained in the death of their old member Robert Etheridge. After