

PROF. JAMES HALL.

BY CUYLER REYNOLDS.

Few men of this country were better or more widely known abroad than the late Prof. James Hall, one of America's most prominent scientists and the State geologist of New York since 1837, whose funeral took place on Monday, August 15, at Albany. Death resulted from cerebral apoplexy, on Sunday afternoon, August 7, at Echo Hill, in the White Mountains, near Bethlehem, N. H., where he was enjoying a rest, and the funeral was delayed that his daughter might arrive from San Francisco. So active was his mind, although he was 87 years old, that during the last ten years he was able to write 250 papers on scientific subjects which are regarded as valuable acquisitions to knowledge relating to geology. His experience was called upon by statesmen almost continually when seeking to develop certain resources of the State and the country. His name will stand for a long time as that of a scientific worker who has contributed an unusual share of data on subjects in which the world shares an interest. Wherever there are scientists on the face of the globe the name of Prof. Hall is familiar, and not long ago a list of the honors and decorations bestowed upon him was printed, not to his liking, but which showed that over seventy times had various nations recognized his worth by awarding him special recognition. At one time he was a close associate of Louis Agassiz, and they labored together in 1850.

Prof. Hall was born in Hingham, Mass., September 12, 1811, and was graduated with the class of 1832 at what is now the Rensselaer Polytechnic Institute at Troy, N. Y. He remained there until 1836 as assistant professor of chemistry and natural science, at which date he was made professor of geology. When the geological survey of the State was organized in 1836, he received the appointment of assistant geologist of the second district, and the following year he was made State geologist. In 1838 he commenced the annual reports, which can still be procured and are valued highly. Recently the policy of the State rendered it difficult to obtain money to print the reports, and the work has been held back to an incomprehensible extent. Volumes, with their drawings, which have caused much labor in careful preparation, are awaiting funds to allow them to be issued, so that the value of the research can become a benefit to scientists throughout the world.

He was of portly build, of medium height, and with the appearance of a rugged constitution. His flowing gray beard made him a character always remembered after being once seen, and his disposition was the kindest. Many an impetuous inquisitor has been treated with rare consideration at his hands, and all who have known him will remember how willing he ever was to aid those who were bent upon scientific research. To him it seemed that they were of his own kind and deserving of all the assistance he could give, and he was abundantly able, to continue others in the field in which he was so fond of laboring.

Prof. Hall was the president of the American Association for the Advancement of Science. It was at a meeting of this society that he made the famous address on the formation of mountains by sedimentation, an idea which later developed into the accepted theory of mountain formation.

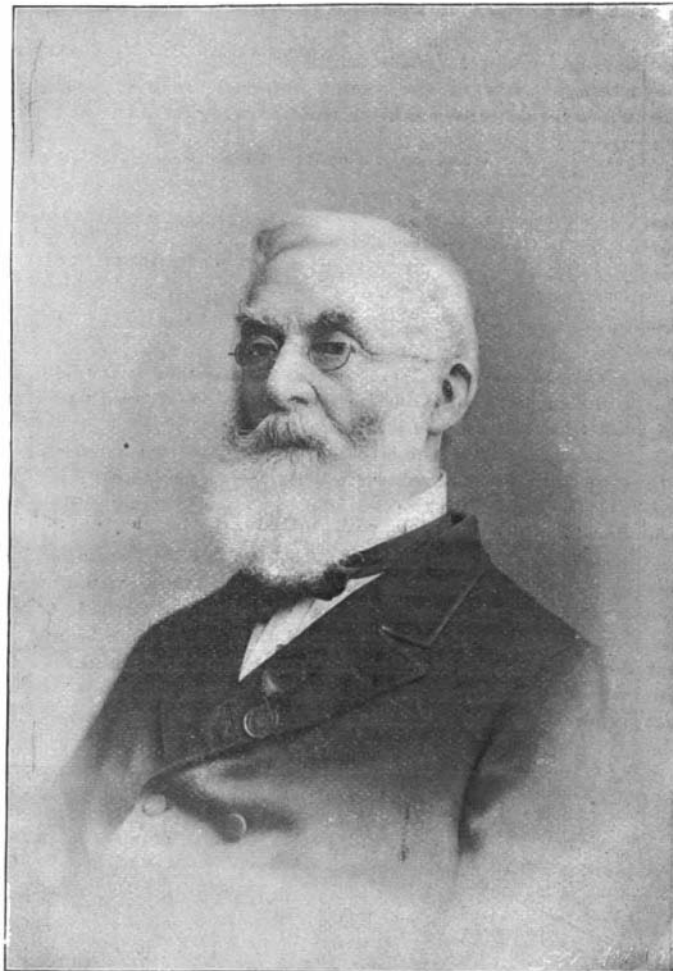
His life work was paleontological study, and he found spare time in which to complete a revision of the Paleozoic brachiopoda of North America. This took his field beyond the State, and he explored the region westward to the Rocky Mountains in order to secure a perfect work on the Paleozoic fauna of New York. These researches have ever since served as a basis of all subsequent knowledge of the geology of the Mississippi Basin. Although offered the office of director of the geological survey of Canada, with a promise of succeeding the director-in-chief, he declined, but contributed an elaborate monograph on the "Graptolites of the Quebec Group." Prof. Hall, while continuing to hold his position in this State, also served as State geologist for Iowa in 1855, and of Wisconsin in 1857. From him came the paleontological portions of Fremont's exploring expedition which was published by the government in 1845. For a time, from 1866 until a few years ago, he was director of the State Museum. Union College in 1842 conferred the degree of A.M., Hamilton in 1863 gave him the degree of LL.D., and McGill followed this in 1884. In 1884 he won the \$1,000 quinquennial grand prize of the Boston Society of Natural History. He promoted the International Congress of Geologists in 1876, and was one of its vice-presidents in 1878 at Paris, as well as in Bologna in 1881, and in Berlin in 1885. He was elected one of fifty foreign members of the Geological Society of London in 1848, and in 1858 was awarded the Wollaston medal. He was elected a correspondent of the Academy of Sciences in Paris.

His name appears among the founders of the American Association of Geologists and Naturalists. A year ago he returned from a trip to St. Petersburg, where he met the leading scientists of the world, and he returned much invigorated.

M. Amélineau's Story of His Find at Abydos, in Egypt.

M. E. Amélineau, the French Egyptologist who announced recently the discovery of the tomb of Osiris at Abydos, in Egypt, has sent to the Journal Egyptien the following account of his find:

"Everybody who has had a little education, or has read a little, knows, or at least has heard of, the legend of Osiris. The benevolent god, benignant and charming, to whom is generally attributed the progress of civilization in the Nile Valley, who taught his contemporaries how to cultivate the earth, to enjoy the rural pleasures, to charm their leisure and to forget their fatigues with the help of simple and touching songs, has been considered up to the present time more as a creation of the imagination than as a real, mortal being. The part which in the succession of centuries the religious traditions of humanity made him play some ten thousand years ago, was not calculated to increase the belief in his reality. But hereafter it will be difficult to doubt that Osiris, Isis, his sister-wife, and Horus, their son, lived in reality, and played at least partially the parts with which legends and traditions have credited them.



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"The Egyptian texts speak very often of Osiris's tomb, which is designated under the name of 'staircase of the great god.' They add that the high officials that lived a short time after that epoch desired greatly to be buried near Osiris, who had preceded them in life and in death. I discovered on the first of January of this year this famous staircase, and the next day I struck a monument which cannot leave any doubt as to the destination of the tomb which my excavations brought to light.

"Two years ago I had already begun a very important work, if we consider only the number of cubic meters of sand removed, and my diggings on one side had stopped at a point three or four meters from a large tomb. During my previous excavation I had found a great number of traces of Osiris worship, but they could be explained by the general devotion that people of Abydos as well as other parts of Egypt had for the god of the dead, who was also called sometimes the Universal Lord, because men are all submitted to death's law. During the whole of last year my time was devoted to works which I did not expect would last so long, and it was only this year that I was able to resume what was left uncompleted.

"The hill under which was hidden Osiris's tomb is about 180 meters in length by 160 meters in width, and is here and there seven or eight meters high. It was composed of millions upon millions of small jars and earthen vases, also some large ones mixed up with sand and few rare pieces of stone. From the first days of the excavations, in December last, pieces of pottery of all shapes, entire or broken, were found, bearing

inscriptions written in hieroglyphic or hieratic signs. Large numbers of pieces mentioned the name of Osiris and were due to the priests, while a smaller number of pieces bore the name of Amou-Ra. A few of these inscriptions mention the house of Osiris. Among Egyptians a term generally used to designate tombs was 'eternal houses.' These discoveries impressed me so strongly that as far back as December 2, I recorded in the diary which I keep of my excavations the belief that I was going to come across Osiris's tomb. If my discoveries had only related to a general worship, I would not have found the double (Ka) name of King Menes among the debris; I would not have found that the worship of the dead buried under the hill had lasted until the end of the Egyptian empire. In spite of all these proofs I lacked yet the details given in the Egyptian texts.

"The tomb was in shape a large rectangle, and on the four sides of it were series of tombs which would number about 200. Moreover, the necropolis, known in the country under the name of Om-el-Gaab-el-Gharby, contained the sepulchers of persons of very high rank, among them kings, the steles of which I discovered two years ago. So this first point was settled. On January 1 appeared this fortunate staircase mentioned by the texts. The next day I discovered a unique monument. It was a granite monolith in the shape of a bed decorated with the head and legs of a lion. On this bed was lying a mummy bearing what is known as the white crown, holding in his hands, which came out of the case, a flagellum and a pastoral cane. Near the head were two hawks, and two more were at the feet. The dead was designated by the inscription: 'Osiris the Good being.' The hawks were labeled, 'Horus, avenger of his father,' and the goddess Isis is also designated by her name.

"This monument is 1.70 meters in length and about a meter in width and height. The tomb itself has the shape of a dwelling, with a court yard in front. It contained fourteen rooms, and the staircase five rooms to the north, five to the south, and four to the east. The western face was open. The two extremities, south and north, were closed by a wall on the east side. The tomb was about 13 meters in length, 12 meters in width, and $\frac{1}{2}$ meter in depth. There were evidences of fire in it. I found at the bottom of the rooms indisputable proof of the work of spoliators. This fact of the tomb having been destroyed by fire has rendered sterile a great part of my labor. This is to be lamented, and the case is hopeless, for what is lost is lost forever.

"It is not without a deep emotion on my part that this holy sepulcher of Egypt was brought to light by my workmen, who did not even suspect the importance of the discovery. The emotion I felt at the thought that I was touching soil sacred for thousands of generations was rendered more intense when I considered that my discovery came just in time to prove that what have been called my theories, my theses, were not pure, unsupported theories and sensational theses, but unquestionably realities proved by facts. Such are in a nutshell the main points of my discoveries."

The Journal Egyptien, in printing M. Amélineau's letter, makes these comments:

"We give the facts such as they are stated by M. Amélineau. We must remember that Mariette spent much time and money at Abydos in his researches for the tomb of Osiris. The discovery of M. Amélineau, astonishing as it may appear, is a possibility and in accordance with the records of all the ancient authors and the belief of most Egyptologists, unless this tomb is proved after more complete investigations of the epigraphic documents exhumed to be a sanctuary erected at a later date to Osiris. If it is the tomb of Osiris, it must be still more archaic than the tomb of Negadah discovered last year by Mr. J. A. Morgan, and also much older in style than all the tombs explored so far by Mr. Amélineau himself at Abydos. On these points more details are needed."

Vapor of Metals.

Dr. W. J. Russell finds that certain metals, at ordinary temperatures, appear to give off vapor which affects a sensitive photographic plate. This vapor can be carried along by a current of air, and even after passing through thin sheets of gelatin, celluloid, etc., is able to produce clear pictures of the surface of the metal from which it came. Nickel is very active in this respect, cobalt only very slightly so, copper and iron are practically inactive.—Chemical News.

THE bottom of the Pacific, between Hawaii and California, is said to be so level that a railroad could be laid for 500 miles without grading anywhere. This fact was discovered by the United States surveying vessel engaged in making soundings with a view of laying a cable.