July 5 he wrote to Hale saying that the Saint Gobain people had quoted a price of $1 per kilo on a 30-inch disc. "Hence a 30-inch disc, 4 inches thick will cost about $135. . . ." In September, 1892, Mr. Charles T. Yerkes agreed to finance the construction of a large telescope, and two forty-inch discs, originally made by Mantois for the University of Southern California, were purchased when it was learned that this institution would not require them. The mechanical parts of the telescope were completed by the Warner and Swasey Company of Cleveland in 1893. The great lens was tested in the optical shops of the makers—Alvan Clark and Company of Cambridgeport, Massachusetts—in October, 1895, and the first astronomical observations were made by Mr. Hale and his associates in the summer of 1897.

OBITUARY

WALTER GRANGER

ONE of the great paleontologists and one of the best-loved men of his generation was taken from us on September 6, 1941, when Dr. Walter Granger died suddenly at Lusk, Wyoming. As for several years past, he had gone to South Dakota to collect fossils with his old friend and colleague Albert Thomson. After attending a field conference of the Society of Vertebrate Paleontology, in the recent organization of which he was active, he was on his way back to the Big Badlands when stricken.

He was born in Middletown, Vermont, on November 7, 1872, the son of Charles H. and Ada Byron Haynes Granger. With little formal schooling, he came to New York as a boy in 1890 and obtained work as an assistant in taxidermy at the American Museum of Natural History, the institution to which he devoted all the rest of his life. His first duties, often graphically recalled, included cleaning the oil lamps along a pathway to the museum and similarly menial tasks. More interesting pursuits were bird and mammal collecting and preparation, in which he acquired permanent skill, occasionally making skins even in his last years.

In 1891 the late Henry Fairfield Osborn came to the museum to establish the Department of Vertebrate Palaeontology, and five years later, in 1896, Professor Osborn had the promising young Walter Granger transferred to this department. Here he worked as an assistant until 1909, then as an assistant curator, 1909–1911, and associate curator, 1911–1926, becoming curator of fossil mammals in 1927. In recent years and until the time of his death he was also curator of paleontology in the Department of Asiatic Exploration and Research. Without academic training, he acquired his knowledge the hard way, but so extensively and so thoroughly that he was a recognized scientific authority in his field as well as a great collector, a fact signalized not only by his rise on the scientific staff but also in 1932 by an honorary D.Sc. from Middlebury College in his native state.

Among his first expeditions was participation in the excavation of Bone Cabin Quarry, Wyoming, beginning in 1897, which resulted in the famous *Brontosaurus* skeleton and other important dinosaurian material. His first scientific publication, a joint paper with Osborn in 1901, was on this collection. In 1903 he was placed in charge of Eocene and Paleocene collecting, and he was in this field every summer from 1903 to 1906, from 1909 to 1914 and in 1916 and 1918. In these years he obtained large collections from almost every known early Tertiary formation of the West. Overshadowed in the public eye by later Asiatic collecting, this work nevertheless was and remains of the utmost importance. It laid the basis for new conceptions and more adequate knowledge of the beginning of the Age of Mammals and resulted in the most remarkable series of primitive mammal remains that has yet been assembled. From the first, and throughout his career, he was not only a collector successful in finding and skilful in preserving specimens, but also a stratigrapher of high rank. His careful observations have played an essential part in the faunal zoning and correlation of much of the Mesozoic and Cenozoic of two continents.

His first foreign expedition was to the Fayûm of Egypt under Professor Osborn in 1907. With the reorganization and expansion of the Museum's Asiatic program in 1921, he was made paleontologist of the Central Asiatic Expeditions and second in command with Roy Chapman Andrews. Aside from the main work in Mongolia, he also collected in Sze-chuan when the party was not in the Gobi. Most of his time was spent in Asia from 1921 through 1931. After 1931 he remained in charge of the preparation and study of the fossil collections of the expedition and in recent years was editor of its publications in all fields, one of the principal tasks in which he was engaged during his last months.

The superb central Asiatic collection resulted from the conjunction of an unparalleled opportunity and a man uniquely qualified to profit by it. Central Asia was the last major untouched storehouse of paleontological riches. Among the thousands of fossils collected, practically every one represented an animal hitherto unknown and vital new evidence of the pageant of ancient life. Some of these specimens are already among the most widely known of fossils: the

dinosaur eggs and the amazing series of skulls and skeletons of the dinosaurs that laid them, the tiny skulls of Mesozoic mammals, titanic *Baluchitherium*, largest of land mammals. Aside from these and other spectacular discoveries, there is case after case of teeth, jaws, skulls and skeletons, truly a whole new world resurrected from the past.

This achievement was the climax of his life, and duties in the museum, increasing with Matthew's retirement in 1927 and with Osborn's death in 1935, prevented any more major expeditions. Field work remained his greatest joy, however, and he missed no opportunity to spend a few weeks each summer working with some party in the field.

It is probably as a collector, certainly one of the greatest, that he will be best remembered in the history of paleontology, and this would be his own wish. Although less spectacular, his office researches also have permanent value. Among other independent publications, Granger completed revisions of the Eocene horses (1908) and condylarths (1915) that are still the standard works on these groups, and he also published important stratigraphic studies and a number of popular articles that excited wide interest. Collaboration with the late W. D. Matthew resulted in a long series of joint papers on Granger's discoveries in America and in Asia. He contributed to these not only the specimens and the field data but also a soundness of judgment and acuteness of perception that were, as Matthew frequently remarked, essential to the scientific value of the results. Granger was so modest regarding his intellectual achievements and he so firmly acquired the habit of communicating knowledge orally rather than in writing, that perhaps only those who worked with him realized the full extent of his acquaintance with vertebrate morphology and taxonomy. His interest in all such studies was keen and his untiring, unselfish assistance was endless and practical and could be acknowledged only over his protests.

He was a member of many scientific organizations, among them the Geological Society of America, Paleontological Society, Society of Vertebrate Paleontology, American Society of Mammalogists, American Ornithological Union, Linnaean Society of New York and Sigma Xi. Aside from his museum and his profession, his greatest interest was the Explorers Club, of which he was president in 1935–1937 and subsequently a director.

Dr. Granger's ashes will be privately buried in Vermont. A memorial service will be held at the American Museum of Natural History, probably late in October.

He is survived by his wife, Anna Dean Granger, formerly of Brooklyn, N. Y., to whom he was married on April 7, 1904, his companion at home and on many of his wide travels. They had no children.

It is thus possible to write a brief summary of the tangible facts of a noble career. Hundreds of hearts all over the world cherish the memory of intangibles that can not be well expressed in the midst of grief for their loss. Walter Granger had a talent for friendship and a zest for living, an inexhaustible store of affection that was returned on every side. Every one who knew him was happier because he lived.

G. G. SIMPSON
THE AMERICAN MUSEUM OF NATURAL HISTORY

DEATHS AND MEMORIALS

DR. HUGH MCCORMICK SMITH, associate curator of zoology, U. S. National Museum, died suddenly on September 28. He was seventy-five years old.

PROFESSOR ARTHUR GEORGE GREEN, formerly director of research at the British Dyestuff Corporation and professor of chemistry dyestuffs at the University of Leeds, died on September 12 at the age of seventy-seven years.

THE United States Board of Geographical Names has named one of the mountain peaks in Sequoia National Park for Dr. Gustavus A. Eisen, who died in New York on October 29 of last year. Mt. Eisen is 12,000 feet high, and is part of the Great Western Divide. Dr. Eisen was born in Stockholm in 1847 and went to California in 1873. He introduced the Smyrna fig and the alligator pear to the state. In the early '70s he made expeditions through the Sierra regions and advocated the preservation of the sequoia tree. In 1890 he was the chief instrument in establishing Sequoia National Park. He was a member of the California Academy from 1874 and served as curator from 1895 to 1900.

A PLAQUE commemorating the first collegiate course in ceramic engineering was unveiled with appropriate ceremonies at the Ohio State University on September 27. The memorial will be placed on a wall of Orton Hall, adjacent to the classroom where Edward Orton, Jr., held the first collegiate classes in that subject in 1894. Fellows of the American Ceramic Society appropriated money for the plaque, and Dr. R. R. Sosman, assistant director of the research laboratories of the U. S. Steel Corporation at Kearny, N. J., presided.