of people trained in geology, including the writer. Yet there is no published record of wind-worn stones here, probably because the visitors' attention was concentrated on more significant details of the deposit.

Close examination of this exposure in April, 1941, by the writer and a class of some thirty Lawrence College students revealed that many of the subangular stones are truly ventifacts. Scores of them were collected in a few minutes, mostly from the slumped surface; but random digging into undisturbed till below a shallow surface zone of weathering produced others. These ventifacts were evidently carried by the glacier in moving to its terminal position and then deposited in the morainic debris that now marks its former margin. Sand-blasting must have occurred earlier while the stones lay in a belt peripheral to advancing ice.

A white quartzite boulder 3½ feet in long diameter, extricated from till just beneath the moraine surface, was taken to the college museum. More than half its surface area bears shallow, subparallel cusps, grooves and flutings characteristic of many ventifacts, and these have a luster like Cellophane. Such surfaces are merely modifications of curving, conchoidal fracture faces commonly found on quartzite. Their arrangement shows clearly that the rock rolled into several positions during sand-blasting. The total amount of material removed by abrasion was apparently not sufficient, however, to give the whole stone a distinctive pyramidal or polygonal shape common among smaller ventifacts.

Most of the wind-carved rocks collected here are fragments of locally abundant Baraboo quartzite; but a few fashioned in coarse granite and felsite porphyry were observed. Consideration of rock types shown on the geologic map of Wisconsin shows that these stones were not transported far from their original positions of outcrop. Fragments of Potsdam sandstone widely distributed north of this did not withstand transportation and weathering sufficiently to retain the evidences of wind-sculpturing they may also originally have displayed.

In a region where surface rocks bordering and beneath the ice were friable quartz sandstones that yielded abundant sand to glacially generated winds conditions must have been especially favorable to formation of ventifacts. Consequently, it seems probable that glacial deposits of the Baraboo region contain a profusion of these curious stones.

The writer will welcome information concerning wind-cut stones at other places in the central States. He urges that the discoverer determine if possible: whether the stones occur within the deposit; at what depth beneath the surface; to what depth the material is stained by weathering; and whether the deposit is unlayered till or stratified sand and gravel.

Since observers trained in any branch of science may encounter these wind-worn stones, it appears worth while to list below other distinguishing characteristics of ventifacts.

(1) The wind-scoured surface is smooth, lustrous and has a rather greasy feel. The polish may vary from a dull mat finish to a gloss like Cellophane.

(2) The surface may be pitted, fluted, cusped or highly irregular through etching out of its less resistant portions. A wind-etched stone is distinguished from one produced by differential solution in weathering by smoothness and high luster of wind-eroded portions. Surfaces developed by solution processes are commonly dull, pitted and "chalky-feeling."

(3) Some ventifacts have distinctive polygonal shapes formed by carving of several rather flat facets across what were originally rounded pebble and cobble surfaces. These stones may be pyramidal, polygonal or shaped somewhat like a brazil nut. The shape attained depends on many factors, including: shape of original fragment, length of exposure to abrasion in one position, constancy of wind direction, resistance and texture of the stone, size of abrasive, mineral composition of stone and abrasive, number of times the stone rolled into new positions during sand-blasting, and amount of surface exposed to abrasion. Consequently, stones of almost any shape may bear evidence of wind-sculpture. Smoothness, greasy feel and high luster are the chief diagnostic things to observe on a surface that one suspects is a wind-cut facet.

OBITUARY

WILLIAM SCHAUS
1858–1942

THE death of Dr. Schaus on June 20 removed one of the last of the elder lepidopterists who have contributed most to our knowledge of the neotropical fauna. For over forty years he labored consistently and with unswerving devotion to one end, the building up of the most complete collection of tropical American Lepidoptera in the world, not for himself nor his personal profit but for the nation. He contributed generously to other institutions, notably the British Museum of Natural History, the Carnegie Museum at Pittsburgh and the American Museum of Natural History; but the bulk of his collection and his valuable library were given to the U. S. National Museum, and there he worked for the last twenty years of his active life. He described over five thousand new species, mostly from tropical America. With few exceptions

the types of these are deposited in the National Collection.

Dr. Schaus was born in New York City on the 11th of January, 1858. His father was the well-known art collector and dealer, William Schaus, Sr., proprietor of the Schaus Galleries, born in Germany and naturalized as an American citizen in 1854. His mother (born Margaret Connover) was from an old American family. Young Schaus was born to affluence and it was intended that he should carry on the business of his father. He received his early education at Exeter Academy and was sent abroad to finish his education in France and Germany. His principal training was in art, music and languages; but as a young man he came under the influence of Henry Edwards and found his real vocation. He decided, despite parental opposition, and at the sacrifice of a promising career as successor in his father's business, to devote his life to the study of Lepidoptera. He made his first collecting trip into Mexico in 1881. Thereafter he made frequent and extended trips with his companion and friend, Jack Barnes, to Mexico, Costa Rica, Guatemala, Panama, Cuba, Jamaica, Dominica, St. Kitts, the Guianas, Colombia and Brazil and collected over 200,000 lepidoptera. From 1901 to 1905 he lived at Twickenham, England. He visited England and the continent again in 1910 and in 1925 he again visited the continent and brought back the Dognin collection of tropical American Lepidoptera, purchased for the National Collection by funds which he had raised and to which he had contributed substantially. From 1919 until his retirement in July, 1938, he was on the staff of the Bureau of Entomology of the U. S. Department of Agriculture, first as specialist in Lepidoptera and later as entomologist. In 1921 he was made honorary assistant curator of insects of the U. S. National Museum. He was an honorary fellow of the Royal Entomological Society of London; fellow of the Zoological Society, London; honorary correspondent of the Société Entomologique de France; honorary member of the Entomological Society of Brazil; fellow of the American Entomological Society; fellow for life of the Metropolitan Museum of Art; member of the American Association for the Advancement of Science, of the Biological Society of Washington, and of the Entomological Society of Washington; corresponding member of the Philadelphia Entomological Society, and correspondent of the Academy of Natural Sciences, Philadelphia. In 1921 he received the honorary degree of master of arts from the University of Wisconsin and in 1925 that of honorary doctor of science from the University of Pittsburgh.

Few lepidopterists, even of his generation, have had such a wide and intimate knowledge of the world fauna as he. While his main interest centered in the American tropics, he worked with and described many Old World Lepidoptera. He was an accomplished linguist, a lover of art and music, a charming host and the most generous of friends. He was granted blessings that come to few of us, a long life in chosen labor, the satisfaction of completing that labor and a peaceful end.

CARL HEINRICH
EDWARD A. CHAPIN
U. S. NATIONAL MUSEUM

RECENT DEATHS

JOSEPH W. GAVETT, JR., professor of mechanical engineering and chairman of the department at the University of Rochester, died on August 28. He was fifty-three years old.

RAYMOND H. DANFORTH, professor of mechanical and hydraulic engineering and head of the department at the Case School of Applied Science, died on August 31. He was sixty-four years old.

DR. CHARLES E. CASPARI, dean and professor of chemistry emeritus of the St. Louis College of Pharmacy, died on June 11 at the age of sixty-seven years.

ELEANOR CATHERINE DOAK, professor emeritus of mathematics and a former chairman of the department at Mount Holyoke College, died on August 27 at the age of seventy-two years.

ARTHUR H. THOMAS, president of the Arthur H. Thomas Company, died on August 31. A correspondent writes: In 1892 he entered the employ of the old Philadelphia firm of James W. Queen & Co., dealers and makers of optical and scientific instruments. On December 8, 1900, Mr. Thomas organized the Arthur H. Thomas Company, dealers in laboratory apparatus and reagents, of which he was president. This company grew rapidly and has become one of the leaders in this field. He was deeply interested in education and at the time of his death was a trustee and director of Bryn Mawr College and a member of the Board of Managers of Haverford College. He was also a member of the Board of the Provident Mutual Life Insurance Company.

SCIENTIFIC EVENTS

THE ZOOLOGICAL SOCIETY OF LONDON AND THE NATURAL HISTORY MUSEUM AT SOUTH KENSINGTON

THE report of the Zoological Society of London for 1941 was presented at the annual meeting of the society on August 19. In an advance notice printed in *The Times*, London, it is stated that both Regent's Park and Whipsnade suffered several times