OBITUARY

NATHAN AUGUSTUS COBB

ON June the fourth, Dr. N. A. Cobb, principal nematologist of the Bureau of Plant Industry, U. S. Department of Agriculture, died suddenly and unexpectedly from a heart attack at Johns Hopkins Hospital, where he had gone for an annual health examination.

Born in Spencer, Massachusetts, on June 30, 1859, he received his early education there, graduated from Worcester Polytechnic Institute, was teacher in his home town and later professor of chemistry and natural science at Williston Seminary. He acquired his Ph.D. in Jena, Germany, under Häckel, Oscar Hertwig, Kükenthal, Lang and Stahl. After a stay at the Zoological Station in Naples he went to Australia, where he first was *locum tenens* professor of biology for the then Professor Haswell on leave at Sydney University, N. S. W. Already booked for return to the United States, he received the appointment as pathologist of the New South Wales Department of Agriculture, cancelled his passage and remained in Australia. He was for a time manager of the Wagga Experimental Farm and during 1898–1901 was appointed commissioner of his department to Europe and the United States. The years 1904–1907 see him in Hawaii as head of the division of pathology and physiology of the Hawaiian Sugar Planters' Association. He left there to join the staff of the Bureau of Plant Industry, U. S. Department of Agriculture, first as agricultural technologist, then for a short time as assistant chief, and later on as he specialized more in nematology, as principal nematologist.

Dr. Cobb embodied all that is meant by a scientist. His interests were broad and his knowledge extended into almost all branches of science. If scientists can be classed, according to Ostwald, as romanticists or classicists, Dr. Cobb undoubtedly belonged to the former, being of an enthusiastic, visionary type, often ahead of his time.

As were his faculties so were his contributions to science of a most varied character. An early contribution concerned the flora of his home country. The bachelor's thesis "Mathematical Crystallography" discussed the application of analytical geometry to crystallography and developed some new demonstrations analogous to those of Miller, who applied spherical trigonometry to the same subject. This mathematical view of Dr. Cobb shows up all through his later work in biology as a tendency to formulate not only for life phenomena but even for life forms short mathematical expressions. His familiarity with mathematics, especially with its optical application, made him the skilful microscopist for which he was famous. He combined with this gift an innate ability to draw. His artistic sense was highly developed; he could become exalted over a good woodcut. In fact, this artistic talent influenced not a little his own course of life. While in Jena as a student he was introduced by Häckel to the famous oceanographer and member of the Challenger Expedition, Sir John Murray. A collection of exceedingly neat and accurate water color figures of various biological subjects so impressed Sir John that he was instrumental in the appointment of the young American zoologist to the table of the British Association for Advancement of Science at the Zoological Station in Naples.

In Jena, Dr. Cobb first came in closer touch with the subject on which he later concentrated his life work. Kükenthal, himself a specialist on whales, had brought back from a study trip a barrel filled with whale nematodes. These became the subject of the American's doctor's thesis. Through Bastian's, Bütschli's and de Man's publications his attention was directed to the free-living forms. Jena's neighborhood was the first successful hunting ground and a few such forms could be included in his thesis. In Naples he acquainted himself with marine types and his fascination grew. Here was an almost unnoticed, seemingly unlimited world of life forms. Small they were and because of their structure a difficult subject, but for Dr. Cobb just the one thing to try his skill. In this field he excelled and his work here will undoubtedly survive that of many a contemporary zoologist. He was a keen morphologist but never stopped at structures, which for him were primal to functions.

The familiarity with agricultural problems, especially plant diseases and soil fertility, enabled him first to recognize and second to emphasize the economic and practical significance of this group of animals for which he coined the shorter term nemas. When he first claimed nematology to be a branch of science perhaps analogous in nature and extent to entomology, he was thought to be an enthusiast, obsessed with the importance of his work. But developments have fully sustained his views.

It was as pathologist of the New South Wales Department of Agriculture that possibly the widest range of problems faced him, problems which frequently lay far from the lines of his education. Yet Dr. Cobb attacked them in a masterly manner, even in cases where he was an outsider in the branch of science involved. Often laboratory facilities and apparatus had to be provided by his own labor and ingenuity. Numerous papers concerning most varied

subjects of plant pathology, the growing of wheat, diseases of stock, wild animals, and again and again nematodes, date from this period. Not less significant were his contributions to the problem of sugar-cane growing. In the U. S. Department of Agriculture, Dr. Cobb was closely connected with the first and perhaps most fundamental work on the standardization of cotton fibers. Who does not know his picture of the house fly, perhaps one of the most widely reproduced of scientific pictures drawn with so much ingenuity. Whoever heard and saw the results of his bird studies, especially on the bluejays, will admire the skill, the keenness, the patience and the enthusiasm that were his.

He had an inborn tendency to rationalize the methods of investigations, inventing and constructing various devices and apparatus to this end. Naturally this rationalization did not stop at his laboratory door. He saw with concern the endless irrationalities in our daily life. Why not simplify where it is possible? For years he advocated the adoption of the metric system. While in Australia he tried to impress upon people the obsoleteness of the English monetary system. His last public address as retiring president of the Washington Academy of Sciences, was a call to scientists to assume more leadership in such matters. Science complicated life, the scientist therefore should lead in simplifying it. Why burden our children with the learning of obsolete systems when much simpler ones are at hand? Why should human society, even in matters of science, use a variety of languages when one, perhaps a modernized English, could be used?

Dr. Cobb was of a charming personality. All who came in personal contact with him admired his ever open interest in most varied matters, his ability to discuss the widest range of subjects, and to portray clearly his views, often spiced with "Attic salt." In fact his sense of humor was very keen and occasionally found its expression in verses and rhymes. He captured his associates by an ever young enthusiasm for his work and an unlimited optimism.

His favored society was the Helminthological Society of Washington, of which he was a charter member. The informal character of this society, which offered so much opportunity for free discussion, was to his liking. He rarely missed a meeting and rarely failed to make one or more communications. Dr. Cobb was past president of the Washington Academy of Sciences and a former president of the Helminthological Society of Washington, the American Society of Parasitologists and the American Microscopical Society.

G. STEINER

SCIENTIFIC EVENTS

THE NORTH INDIA EXPEDITION OF YALE UNIVERSITY

THE Yale North India Expedition has found fossil plants and mollusc shells in the Himalayas which will throw new light on the subrecent climatic changes in this region, according to the first report of the expedition made to President James Rowland Angell by the director, Professor Hellmut de Terra. This group of scientists has already spent three months in exploring the western Himalayas and adjoining regions, and will continue its studies for another nine months.

Surveys in this region indicate the geologically recent origin of the southern Himalayan range. The expedition has spent some time in the northern Punjab, south of the Himalayas, making collections of invertebrate and vertebrate fossils with the assistance of a member of the Geological Survey of India. Mr. G. E. Lewis, of Yale, the paleontologist of the party, has found interesting representatives of the celebrated fossil mammal fauna of this region.

The very extensive series of lakes and swamps in the Kashmir Valley has been investigated by Professor G. E. Hutchinson. The collections and ecological data amassed will undoubtedly add to our knowledge of the relations of this fauna to that of western Central Asia from which region Kashmir has received most of its animal inhabitants. The contrast of this fauna with that of the rest of India is most striking.

The Himalayan area is of special interest since it is the scene of geologically recent mountain building. Strata which are so young as to be contemporary with formations laid down during the Ice Age in Europe and America have in this region been folded and pushed out of their original positions by the great pressure of mountain-making. A study of the animal and plant life in the inland waters here give some idea of the river systems and ancient geography of this land.

Through the generosity of an anonymous donor the American Geographical Society has enabled the expedition to enlist the services of a topographer who joined the expedition through the courtesy of the surveyor general of India. The surveyor, Khan Sahib Afraz Gul Khan, plans to map a hitherto unsurveyed part of the great Karakorum Range north of the Himalayas. The expedition has left Srinagar, capital of Kashmir, and will spend five months in Little Tibet.