Glacier. It is a consequence of the fact that mountain glaciers are in all cases essentially streams of ice which pursue definite courses, whereas continental glaciers spread broadly over all the country; that the former have excavated steep-walled trenches and vast amphitheaters to produce the most rugged topography that is anywhere known; while continental glaciers by sharpest contrast have employed the erosional processes only to pare down elevations and fill in depressions, so as to "iron out" the existing features and reduce the accent of the relief. Eventually they produce a broadly undulating surface from which all earlier characters have been effaced.

Résumé. Mountain glaciers are of moderate proportions, are held within rock containers, are nourished by ascending air currents, have internal movement throughout and transform the topography into the most rugged type that is known. Continental glaciers are of vast proportions, are not contained but take on always a flatly domed surface, are nourished by descending air currents within a glacial anticyclone, have their internal gravitational movement apparently restricted to the marginal zone, and produce some of the most monotonous flatly undulating topography that is known.

The icecaps of high latitudes occupy a position intermediate between the mountain and continental glacier classes, and they doubtless represent an intermediate stage through which the continental glacier in some cases at least has evolved from earlier mountain glaciers. In size the icecaps are intermediate, but nearer the mountain glacier. In form they differ little from the continental glacier, save only that the dome is much less flat. They rest upon rock pedestals and in all cases are of depth sufficient to fill and overwhelm all the inequalities of their rock floor. As regards their mode of nourishment also, icecaps seem to occupy an intermediate position. The smaller ones are in part at least nourished by ascending currents after the manner of mountain glaciers, whereas the larger ones are able to develop a local centrifugal surface-air circulation for at least much of the time. The largest of all, that of Northeast Land in Svalbard, has been shown to possess a glacial anticyclone which, however, for short periods—during the passage of a strong cyclone—loses its domination, only to snap back into position so soon as the depression has passed on. In respect to shaping the rock beneath, icecaps are more allied to the continental glacier, with its restriction to the employment of plucking and abrasion only. Along their borders icecaps and continental glaciers alike send out tentacles of ice which possess many of the properties of the true mountain glaciers, and those of the icecaps particularly have often a scalloped margin due to a series of amphitheatral basins upon their borders.

OBITUARY

ROBERT HENRY WOLCOTT

AFTER a long and fruitful career, prominently in connection with the University of Nebraska, Professor Robert Henry Wolcott died on January 23, of carcinoma of the liver. Previously in robust health, he had been ill for only a few months before his death. At that time he was chairman of the department of zoology in the University of Nebraska and acting chairman of the department of bacteriology and pathology.

Dr. Wolcott was born at Alton, Illinois, on October 11, 1868. He spent most of his early life in Grand Rapids, where his father was prominently associated with the furniture industry. He was early brought into contact with a group of naturalists and acquired a love for outdoor studies which played a prominent part in his later life. He went to Michigan for his college work and was naturally drawn into the biological field. He was given the B.L. degree in 1890 and the B.S. in 1892 but during this time he was also concerned with studies in medicine. In 1893 he was granted the degree of M.D. but never engaged in active practise. His interest was in the scientific aspects of the biological field and he embraced an opportunity offered to participate in the biological survey of Michigan waters then under way with especial reference to the features involved in the maintenance and increase of the fish supply. He served as a member of the party of biologists working at New Baltimore in the summer of 1893 and at Charlevoix in 1894. It was as a member of the first party under the leadership of Professor Jacob Reighard and as director of the survey the following summer that I became familiar with Wolcott's ability as a field naturalist and his desire to follow his interest in that field through teaching and study. Consequently when a vacancy opened in the department of zoology at Nebraska in 1894 I offered him the place. From that time for forty years he served the university and the state with enthusiasm and success in a variety of different positions.

The first year he was an assistant and at its close received the degree of M.A. and an appointment to an instructorship. In 1898 he was made an adjunct professor and in 1902 associate professor of zoology in charge of the work in anatomy. Nineteen hundred and five brought him the professorship in anatomy. With a change in the personnel of the department

in 1909 he became its head and was at the same time made acting dean of the College of Medicine, a position that he held until 1914. Up to that date two years of the work of the College of Medicine had been given in Lincoln and the clinical years in Omaha. When the growth and development of the college rendered the transfer of all the work to Omaha advisable, he elected to remain at Lincoln, continuing as head of the department of zoology and dean of the Junior Medical College there.

He served several years as a member of the summer faculty at the University of Minnesota and later for a number of seasons as a member of the staff of the Puget Sound Biological Station.

Dr. Wolcott was throughout his life an enthusiastic field naturalist. Year after year he followed the migrations of the birds with great exactitude. Winter and summer he roamed about the fields in the vicinity, taking voluminous notes on the conditions he observed. These items were constantly introduced into his lectures and discussions with students, who found in the rich fund of information regarding nature and life a stimulus to their own interest and activity in college courses and outdoor studies. He rarely went alone and always was a genial and inspiring companion on these excursions.

His early publications on the water mites gave Wolcott the position of final authority on this group, a rank widely recognized by workers here and abroad. His book on the birds of Nebraska, in the preparation of which he had the assistance of Professors Bruner and Swenk, was a most careful record as well as one of the earliest studies of the local avifauna in a region which lies in the center of the migration route of a large and varied bird population. His latest book, a text on animal biology for beginning college classes, was published in the summer of 1932. He wrote numerous articles on a variety of special topics in zoology and related fields as distant as soil conservation. These, coupled with his friendly personality and wide contacts, especially in the state, made him a significant factor in the development of biology in the university and the extension of its influence throughout Nebraska.

Scientific societies were to Dr. Wolcott deserving of active attention. He was secretary and editor of the American Microscopical Society from 1904 to 1908; president of the Nebraska Academy of Science; active in founding the Nebraska Ornithologists Union, which he later served as president for several years, and a constant worker in numerous other organizations, especially in ecology and ornithology. He was a fellow of the American Association for the Advancement of Science and also a member of Sigma Xi.

In 1897 Dr. Wolcott was married to Miss Clara Buckstaff, of Lincoln, who with a daughter, Mrs. Gerald Carpender, and a son, Allen, both of Lincoln, and a brother Samuel of Minneapolis survive him.

HENRY B. WARD

SCIENTIFIC EVENTS

INDUSTRY AND THE RESEARCH ASSOCIATIONS OF GREAT BRITAIN[1]

ON March 22, the Department of Scientific and Industrial Research convened an important conference at the Institution of Civil Engineers, at which Lord Rutherford presided, and more than one hundred representatives of the twenty-one research associations formed under the auspices of the department were present. The object was to provide an opportunity for frank discussion with officers of the department and members of its Advisory Council on the present position of the research association movement and its future.

On the eve of the conference, Sir Kenneth Lee, who is a member of the Advisory Council closely identified with the work of the research associations, and whose firm belief in industrial research is well known, entertained the representatives at dinner. Mr. Runciman represented the government, and many prominent men in industry, finance and in the Civil Service were present. Among the speakers were Mr. Runciman, Lord Rutherford and the Right Hon. Reginald McKenna. In the course of his remarks, Mr. Runciman read a statement from the Lord President of the Council, in which Mr. Baldwin said that those present no doubt shared the opinion of the Advisory Council that the present scale of operations of the research associations is totally inadequate if they are to serve their full purpose. He looked forward, with confidence, to industrialists improving matters in that respect, especially now that the prospects of trade are more promising. If they do so, Mr. Baldwin's message continued, they can rely on the government on its side being prepared to play some part in the forward movement and to help in extending the scale of operations.

The views expressed at the conference left no doubt that the Advisory Council of the Department is right in believing that the time is ripe for a great development in the research association movement. The associations have already made a deep impression on British industry, not only in producing practical results of great monetary value, but also in bringing

[1] *Nature*.