

regions, they set up electrical currents therein, and these currents emit other radio waves of the same kind as the original ones, but so ordered in their relationship to these original waves that they cancel them as regards their progression towards outer space and reinforce them in regions below. The net result is that we obtain what we call reflection of the waves from these conducting layers. The United States Bureau of Standards keeps continual track of changes in these layers, since their power to reflect radio waves back to the earth is responsible for the whole success of radio broadcasting and particularly for short-wave broadcasting through which you hear my voice at this moment.

Through the efforts of the Carnegie Institution of Washington, atmospheric electric observations have

been extended all over the earth, including the great oceans, and several permanent observatories have been set up by the Institution, by the U. S. Coast and Geodetic Survey, and by other organizations, not only in the United States of America, but in Australia, and several other parts of the world. Not only in peace but also in periods of war some collaboration has been maintained even among the warring nations, particularly by the astronomers whose minds, so well attuned to see richness everywhere, find everywhere some good in the world. If only political collaboration among nations were as harmonious as scientific collaboration, how greatly would the brotherhood of man benefit, and how much nearer should we be to that millennium which, through the ages, has been the goal of all mankind.

OBITUARY

VERNON ORLANDO BAILEY 1864-1942

THE achievement in personality that characterized Vernon Bailey, who died at his Washington, D. C., home on April 20, was suggested at his funeral services by the Reverend Dr. John Van Schaick, who quoted from the Eighty-fifth Psalm: "Mercy and truth have met together."

Mr. Bailey, who had lived for almost 78 years, had devoted his most strenuous efforts to the advancement of knowledge about natural history and to the development of kindness toward wild animals. Truth he honored and discovered in field investigations in every State of the Union and in Mexico and Canada, in studies that formed the basis for writings that are now listed in a bibliography of 244 titles. Mercy, in its most practical forms, he practiced through many years of work for conservation and gentle, patient, but persistent agitation, years that included his own accomplishments in designing and promoting the use of traps that make their captures "alive and unhurt."

The influences of such a character for good are, of course, inevitable, yet they were all the more effectively exerted by Mr. Bailey because by inclination he was a guide to other men and to women and boys and girls. Whether these influences, aside from those perpetuated within his writings, are considered as they were felt by other members of his profession, by the Boy Scouts of America, for whom he was a great leader, by his numerous audiences or only by his casual acquaintances and the general public, they must be valued most highly. As his colleague, Edward A. Preble, has pointed out, "even the ablest naturalists" had seen only by accident many of the small mammals that became well known when Vernon Bailey had discovered and shown others how these animals might

be taken. Cumulatively in many other small ways Mr. Bailey changed the world in which he lived more than can be realized, and changed it for the better.

To many who knew him personally, and surely to some others also to whom he was known only at a distance, he will be remembered all the more precious because of the companionship which, with the help of Florence Merriam Bailey, he created and perpetuated for forty years. The reassuring and enriching influences of this companionship have a precious reality for many who must now only remember it, but the remembrance is enduring and is most fittingly treasured up in the writings in collaboration that were among its benefits.

Rated since 1910 among the leading thousand of the country's scientists by "American Men of Science," Mr. Bailey had achieved his widest professional recognition as a mammalogist and an authority on the geographic distribution of mammals, birds and plants, yet the unqualified term "naturalist" was peculiarly appropriate to him. He was born on June 21, 1864, in Manchester, Mich., and at about the age of 6 moved with his pioneer parents to Elk River, Minn., where he laid the basis of his self-education in his own observations of natural history on his father's farm. It was the collection of specimens that he forwarded from there to Washington which led to his employment by Dr. C. Hart Merriam, founder of the agency that was later to become the Bureau of Biological Survey and the present Fish and Wildlife Service. First appointed as a special field agent in 1887, he soon became prominent among the corps of biologists then laying the foundations of a new governmental activity, and in 1890 he gained the title of chief field naturalist, which he cherished until his retirement in 1933 and which no other has had since. Practically every season of

his employment was marked by his field work in some part of the United States, including intensive biological surveys of Texas, New Mexico, North Dakota and Oregon, reported in the North American Fauna series, as well as many other studies described in shorter publications and in the popular articles he wrote so effectively for *Nature Magazine* and other periodicals. His colleagues considered his work in building up the Biological Survey's collections and files of information as especially noteworthy, though his writings made him known to more people. His contributions to the Biological Survey collection of mammals alone, included about 13,000 specimens, a large number of them new species. It was during the years of his government service that he designed and perfected the trap used widely in connection with beaver-stocking projects to capture the animals alive and unhurt, and also his foothold trap which he later improved for use on a variety of mammals and birds. For both of these traps he received prizes awarded by the American Humane Association, and after his retirement he did extensive work with and for that association.

"Retirement," however, was only a conventional term when used to describe the status of Vernon Bailey. The late Paul G. Redington, then chief of the Biological Survey, said of Mr. Bailey when he was freed from his official duties that he had "before him much productive effort in the sciences of ornithology and mammalogy and in the conservation and perpetuation of our valuable resources in wildlife." He was indeed right, for the remaining years were as notable as those that went before—in writing, in motion picture photography, in humane work, in lecturing and counseling and even in field work. At the time of his death Mr. Bailey was planning an expedition to Texas as a collaborator for the Fish and Wildlife Service.

His outstanding publications include "Beaver Habits and Experiments in Beaver Culture," "A Biological Survey of North Dakota," "Biological Survey of Texas," "Life Zones and Crop Zones of New Mexico," "Mammals of New Mexico," "The Mammals and Life Zones of Oregon," "Revision of the Pocket Gophers of the Genus *Thomomys*," "Cave Life of Kentucky" and "Animal Life of the Carlsbad Caverns." There were many others, among them the influential articles for general readers with such titles as "Dwellers in the Desert," "Humane Traps," "Ways of the Beaver People," "Animal Friends of the High Sierra" and "How

to Become a Naturalist," and such notable collaborations with Mrs. Bailey as the volume on "Wild Animals of Glacier National Park," in which he wrote of the mammals and she of the birds.

Mr. Bailey was honored in many formal associations with his colleagues. He was a founder and past president of the American Society of Mammalogists, member of the American Ornithologists' Union, past president of the Biological Society of Washington, president of the Audubon Society of the District of Columbia, fellow of the American Association for the Advancement of Science, and member of the Cooper Ornithological Club, Washington Academy of Sciences, the American Forestry Association and other societies interested in wildlife and conservation. At the meetings of these organizations Mr. Bailey was always a focus of enthusiasm. His papers and comments never failed to rally attention, and his consideration for the younger members was for them an outstanding benefit of the meetings. His rich personality was one of the greatest inducements that one could feel toward a life devoted to science and conservation. Those who have known him well can surely hope that others in the future who will benefit by his contributions to science and the literature of the outdoors may also feel the personality of the man behind them.

HOWARD ZAHNISER

FISH AND WILDLIFE SERVICE,
WASHINGTON, D. C.

DEATHS AND MEMORIALS

JOHN WASHINGTON GILMORE, professor of agronomy at the College of Agriculture at Davis of the University of California, formerly president of the College of Hawaii, known for his work on soil management and field crop production, died on June 25, at the age of seventy years.

THE Medical Association of Georgia at its recent meeting in Augusta set aside, according to the *Journal* of the American Medical Association, \$5,000 as a nucleus for a fund to construct the Crawford W. Long Memorial Building. The fund will be increased from year to year as the association directs. The building is a memorial to the late Dr. Long and will serve as the permanent headquarters of the association. This action marks the one hundredth anniversary of Dr. Long's discovery of anesthesia. Construction will begin when a suitable fund is available.

SCIENTIFIC EVENTS

THE SINGER WILDLIFE REFUGE

IN view of the threatened destruction of the Singer Game Refuge in Madison Parish, Louisiana, a corre-

spondent requests us to print the following resolution passed some time ago by the Beta Mu Honorary Biological Fraternity of the Tulane University of Louisiana, New Orleans: