Moulton that he has gone over the old formulæ used and has found that the computer introduced the factor $\cos\phi$ erroneously into the N.–S. computation.

The N.–S. ratio should therefore have been $\frac{.523}{.7363} = .710$, which oddly enough is exactly equal to the E.–W. ratio.

The new observations point to a value of about .69 for both E.–W. and N.–S. ratios.

A. A. Michelson,
Henry G. Gale

The University of Chicago,
September 10, 1919

AN UNUSUAL MIRAGE

Most people are probably familiar with the type of mirage often seen over paved streets on still hot days. In its simplest and most common form one appears to see merely a wetted portion of the pavement some distance ahead. In more striking cases this assumes the appearance of a pool of water in which buildings, trees and vehicles are seen reflected. As is well known this is due to the presence just above the pavement of a layer of air which being warmer than that above it is lighter and hence has a lower index of refraction than the air a little distance from the surface of the earth. These mirages are oftenest seen in mid-afternoon, and when motoring through the country such a pool often appears to continually recede and thus remains in sight for a long time. Recently while traveling from San Francisco to Portland with Professor W. C. Morgan we encountered such a mirage under rather unusual conditions.

The section of the Pacific Highway which traverses the Sacramento valley being paved with cement and under a hot sun is an ideal place for such mirages which had been visible much of the afternoon. Just after dusk (about nine o'clock) a car with powerful lights came over a slight rise a mile or so ahead. A moment later the lights of a second car appeared some distance in front of the first as though the driver had just turned them on. These lights were about half as brilliant as those of the first car and the impression was that two cars were approaching—a small one followed by a larger one. The large car was seen to gradually overtake the small one until finally the two sets of lights coalesced and a minute later we met and passed—a single car. "I thought there were two of them," said Dr. Morgan. So did I. We had seen a mirage at night.

A. A. Knowlton

Reed College

QUOTATIONS

THE ROCKEFELLER FOUNDATION

A review of the work of the Rochefeller Foundation in various countries during 1918 by the president, Mr. George E. Vincent, shows that its activities extended literally from China to Peru. The foundation has shown practical interest in advanced medical education in hygiene in two ways. In the first place it has by gifts for building, equipment, and maintenance, rendered possible the opening last October of the school of hygiene and public health at Johns Hopkins University in Baltimore. In the second place it has, since 1915, followed the policy of granting a number of international fellowships and scholarships to students from foreign countries and American missionaries at home on leave. In 1918 there were 68 fellowships and scholarships distributed as follows: Brazilian physicians 3, Chinese graduate physicians 11, Chinese undergraduate medical students (formerly students of the Harvard Medical School of China) 10, Chinese pharmacists 3, Chinese nurses 6, medical missionaries on furlough 26, candidates under consideration for the new schools at Peking and Shanghai 9. The International Health Board has adopted a system of "study leave," by which members of its staff of medical officers, now nearly 60 in number, may, under favorable conditions of salary, pursue at the expense of the board special courses in public health at leading American or foreign institutions. In this way the equivalent of additional graduate fellowships has been created. Provision was also made for the bringing to the United States French medical men for special train-

ing in antituberculosis measures, but no appointments were actually made in 1918. A commission for the prevention of tuberculosis, at the head of which was Dr. Livingston Farrand, opened a campaign in France in July, 1917. Although there were in existence examples of every agency effective in combating tuberculosis, they were few in number and there was no centralized organization for a combined attack on the disease. The commission, in cooperation with the Tuberculosis Bureau of the American Red Cross, set about demonstrating the value of "team play" by organizing and coordinating the essential agencies. In 1918 four central dispensaries and six secondary centers were opened. Nurses attached to these centers visited patients at their homes; the Red Cross provided hospital accommodation, opened sanatoriums, and supplied food and clothing. Efforts were made to establish local committees in the leading towns. At the time of the first visit twenty-one dispensaries were in existence in twenty-seven departments. By the end of the year fifty-seven new dispensaries had been opened, twenty others were in process of installation, and plans had been agreed upon for forty-nine more. Besides these dispensaries, fifteen laboratories were in course of establishment and forty new committees organized. An active propaganda was carried on throughout the country by means of "tanks," posters, lectures, demonstrations, pamphlets, postcards, exhibits and games. The services of the press and of art were enlisted as agents in the education of the people. The Foundation has also made experiments in the control of malaria. In four towns in Arkansas measures for the extermination of anopheline mosquitos were carried out with marked success. By draining and filling pools, ditching sluggish streams, and oiling surface water, the breeding of the insect was almost entirely prevented. The results were striking. In Hamburg, Arkansas, the number of visits paid by doctors to patients suffering from malaria fell from 2,312 in 1916 to 259 in 1917 and to 59 in 1918, a reduction for the period of 97.4 per cent. In four other communities the percentage of reductions varied from 95.4 to 80 per cent. In Sunflower county, Mississippi, it was believed that a malaria control of 80 per cent. was achieved. In regions where surface water can not be dealt with "carriers" are looked for and treated. In Guatemala an epidemic of yellow fever was checked. Work for the relief and control of hookworm disease was carried out in cooperation with twelve states of the union and with twenty-one foreign countries. In China the construction of the fifteen buildings of the Peking Union Medical College College was steadily proceeded with in 1918. An account of this institution was given in the *British Medical Journal* of August 2, 1919. On account of the glazed green tiles used to cover the roofs the College is called by the Chinese "the Green City."—*The British Medical Journal.*

SCIENTIFIC BOOKS

Life Histories of North American Diving Birds, Order Pygopodes. By ARTHUR CLEVELAND BENT. Bull. 107, U. S. Nat. Mus., August 1, 1919. Pp. i–xiii; 1–245; Pls. 1–55.

Since the discontinuance of Major Charles E. Bendire's "Life Histories of North American Birds" there has appeared no comprehensive work on this subject. Students of the life and behavior of most North American birds have been much handicapped by the lack of published information, and the widely scattered character of such as is available. In preparing a biography of a North American bird it is frequently still necessary to turn back to the works of Audubon and Wilson for data. In few groups is this lack more evident than in those that form the subject of the present work, *i. e.*, the three families, Colymbidæ (grebes), Gaviidæ (loons), and Alcidæ (auks), unwisely associated in the "Order" Pygopodes of the classification of the Check-List of the American Ornithologists' Union.

The present author has done science a service by bringing together and presenting in serviceable form the obtainable data on these groups of birds. From a large number of ornithologists to whom due acknowledgment is made, the author has received original con-