to be excellent. The town may be reached from San Diego by auto stage line over a rough but passable route in about five hours. If reached by sea it would probably require a special vessel as the two Mexican lines carrying passengers and freight from San Francisco and Los Angeles have somewhat irregular schedules at intervals of something like two weeks. Various points of vantage along the path of totality can be reached from Ensenada by automobile or by burro pack train, but facilities for such transportation are extremely limited there so that transportation should be arranged for in advance, probably at San Diego.

Ensenada is a small village with no hotel, one or two small rooming houses and a few Chinese restaurants. Camping out, however, would be pleasant. Meat, fresh vegetables, fruit and melons can be had at that season at reasonable prices and in sufficient quantity. Other supplies should be imported. Servants, cooks and ordinary labor will be difficult to obtain on the ground.

The town of Tia Juana, Mexico, near San Diego, has an unsavory reputation and it is not unlikely that criminals from there might visit Ensenada at the time of the eclipse, so that each member of observation parties should have a passport or other documents showing his nationality, identity and the purpose for which he is in Ensenada. Local authorities express themselves as anxious to do everything possible for the comfort of the guests on this occasion.

Provision for admission of apparatus duty free would have to be effected through the national government at Mexico City.

C. G. ABBOT,
Assistant Secretary

AWARD TO PROFESSOR MICHELSON[1]

MR. POST-WHEELER, who is on the staff of the American Embassy, attended the annual general meeting of the Royal Astronomical Society on February 9 to receive the gold medal on behalf of Professor A. A. Michelson, who was unable to be present himself.

Professor Eddington gave a most illuminating address on the reasons of the award, explaining that the necessity for the great separation of the mirrors receiving the pencils of light from the stars was to give sufficient difference of length of path to enable the rays from the two extremities of a diameter of the star to be in opposite phase, so that the bright regions of the image from one extremity should fall on the dark regions of the other and so cause the fringes to vanish. It was mentioned that the method had been successfully applied to the measurement of the diameters of Jupiter's satellites, but the stars seem to have been considered hopeless, till recent physical work on the distribution of energy in the spectrum led to the conclusion that the red stars have such dull surfaces that the brighter ones must have appreciable discs in order to give so much light.

The actual figure had been calculated for Betelgeuse, and the observed diameter afterwards proved to be very close to it.

Some letters from Mr. Pease were read, in which he described the great practical difficulties that were incurred in applying the method of diffraction fringes, and the long-continued trials that were finally crowned with success. One of the earliest successes was the determination of the orbit of Capella. This gave, for the first time, a really accurate value of the mass and absolute magnitude of a giant star, which had already proved of use in the physical studies that were being made on these bodies.

A recent interesting development of the Betelgeuse measures was that the diameter came out different at different times, to an extent much beyond the probable errors of the measures. Attempts were being made to correlate these changes with the variable brightness and variable radial velocity of the star, but it will be necessary to carry on these measurements for some time before a definite conclusion could be reached.

Professor Eddington went on to point out that the famous Michelson-Morley experiment, for which the Copley medal of the Royal Society was awarded in 1907, though not specially contemplated in the present award, might be considered as coming within its terms; for the measures were made by interference methods, and the question whether the movement of the

[1] From *Nature*.

earth through the ether could be detected was one of the highest astronomical interest. He knew that their medallist was disappointed at the negative result, but the whole of the system of relativity had been founded upon it, so that in his (Professor Eddington's) opinion it was more fruitful than a positive result would have been.

In handing the medal to Mr. Post-Wheeler he asked him to transmit to Professor Michelson their congratulations on his success and their good wishes for the long continuance of his fruitful labors. Mr. Post-Wheeler replied in a few suitable words expressing his sense of the pleasure it gave him to be there as the representative of America, and thanking the society for the honor they had conferred upon his country in the person of Professor Michelson.

SCIENTIFIC NOTES AND NEWS

WE regret to record the death of Edward Williams Morley, professor of chemistry at Western Reserve University from 1869 until his retirement as professor emeritus in 1906. Dr. Morley, who was eighty-five years of age, was president of the American Association for the Advancement of Science in 1895.

THE council of the University of Paris has decided to confer the honorary degree of doctor of medicine on Professor W. W. Keen, of Philadelphia, and Professor Golgi, of Pavia.

THE council of the Royal Society has recommended for election the following: Dr. E. D. Adrian, university lecturer in physiology at the University of Cambridge; Dr. W. Lawrence Balls, chief of the experimental department of the Fine Cotton Spinners' Association; Dr. Archibald Barr, regius professor of civil engineering and mechanics in the University of Glasgow from 1889 to 1913, now chairman of Barr and Stroud, Ltd., Glasgow; Dr. C. H. Desch, professor of metallurgy in the University of Sheffield; Dr. E. Fawcett, professor of anatomy in the University of Bristol; Dr. F. Horton, professor of physics in the University of London; Dr. R. T. Leiper, professor of helminthology in the University of London School of Tropical Medicine; Professor J. W. McBain, physicist and chemist; Dr. J. J. R. MacLeod, professor of physiology in the University of Toronto; Dr. G. A. K. Marshall, director of the Imperial Bureau of Entomology; Sir Douglas Mawson, leader of the Australasian Antarctic Expedition, 1911-1914; Dr. W. H. Mills, chemist; Dr. J. S. Plaskett, director of the Dominion Astrophysical Observatory, Victoria, B. C.; Dr. R. H. Procter, emeritus professor of applied chemistry in the University of Leeds, and Dr. W. Wilson, professor of physics in the University of London.

MAJOR WILLIAM CAIN, Kenan professor emeritus of mathematics in the University of North Carolina, has been awarded by the American Society of Civil Engineers the J. James R. Croes Medal for his paper on "The circular arch under normal loads."

A DINNER was tendered Dr. Emanuel Libman on February 23 by his associates and pupils as a tribute to his twenty-five years of active service as associate pathologist to Mount Sinai Hospital, New York City. Dr. Frederick S. Mandlebaum, pathologist of the hospital, was toastmaster. Following the dinner, it was announced that a fund of $25,000 had been completed to found the Emanuel Libman fellowship in pathology.

DR. JOHN B. DEAVER, former professor of surgery in the School of Medicine of the University of Pennsylvania, has been elected emeritus professor of surgery.

PROFESSOR LESTER P. BRECKENRIDGE, chairman of the department of mechanical engineering of Yale University, will retire from active teaching at the end of the present year. Professor Breckenridge went to Yale University from the University of Illinois fourteen years ago.

THE University of Cambridge will confer the degree of M. A., *honoris causa,* on Mr. Humphry Gilbert-Carter, director of the botanic garden.

THE Foulerton Award of the British Geologists' Association for the year 1923 has been given by the council to Mr. A. S. Kennard. We learn from *Nature* that Mr. Kennard was associated with Mr. M. A. C. Hinton in the paper on "The relative ages of the stone implements of the lower Thames valley," and