

Tuesday, visits will be paid to Thorvaldsen's Museum and the Museum of Applied Art. In the afternoon the National Art Gallery and the Zoological Museum will be visited, and later there will be a trip in the Danish Expeditionary ship *Dana*, which is under the charge of Dr. Petersen. On Wednesday, July 18, there will be a visit to the Open-Air Museum at Lyngby, a visit to the Natural History Museum in Frederiksborg Castle, where the members will be entertained to lunch, and later a visit to the famous castle at Elsinore. On the following day the members will visit the Glyptothek, returning to Hull by the s.s. *Spero* on the same evening.

MR. I. H. N. EVANS, of the Federated Malay States Museums, Taiping, has written, for appearance with the Cambridge University Press, "Studies in Religion, Folk-lore, and Custom in British North Borneo and the Malay Peninsula," giving the results of research

carried out in the years 1910-21. The same house will publish in the summer "The Banyankole," by the Rev. J. Roscoe. It will form the second part of the report of the Mackie Ethnological Expedition to Central Africa.

IN the chairman's report of the National Illumination Committee for 1922, now issued in pamphlet form, it is stated that the provisional definitions of photometric terms and units have now been adopted, and form the basis of a series to be issued shortly by the British Engineering Standards Association. The latter body has been invited to form a sectional committee on illumination. Reference is also made to the committee which is investigating the subject of motor-headlights, and, as a preliminary to suggestions, is considering the recommendations already made in other countries. The pamphlet contains an official translation of the French text of the photometric definitions.

Our Astronomical Column.

ANNOUNCEMENT OF A NEW COMET.—Mr. W. N. Abbot, the British schoolboy in Athens who recently announced the brightening of Beta Ceti, now reports the discovery of a comet on June 12. The Right Ascension is given as $15^{\text{h}} 13^{\text{m}} 4^{\text{s}}$, and the Declination $53^{\circ} 26' \text{N.}$, in the constellation Draco. As the telegram is not quite in the regular form, there is some doubt whether the Declination may not be the complement of the above, that is, $36^{\circ} 34'$. No further information is at present to hand.

PROPOSED SOLAR OBSERVATORY IN AUSTRALIA.—This observatory has now been planned for several years; a message, dated April 17, from Melbourne to the *Times* indicates that the arrangements are making considerable progress. The site has been chosen at Mount Stromlo, near Canberra, the federal capital.

Prof. Duffield, of University College, Reading, was then in Australia and was being consulted, together with the Astronomer Royal and Prof. Turner, on the question of the selection of a director. It was proposed that the new director, when selected, should be given an opportunity of visiting, among other observatories, the solar observatory on Mount Wilson. As that observatory takes the leading place in researches on solar physics, it is obvious that the director of the new observatory should be intimately acquainted with its methods, and should arrange a programme of work that would supplement the results obtained there. As the two observatories are some 90° apart in longitude, the Australian station could continue the record of interesting outbursts after sunset in California.

PHOTOMETRIC OBSERVATIONS OF THE PLANET MERCURY.—It is of considerable importance to measure the brightness of this elusive little planet, since the result has a considerable bearing on the estimate we form of the condition of its surface. The conditions for doing so are much easier in the tropics, owing to the shorter twilight, the prevalence of clearer skies, and the greater altitude of the planet. Mr. J. Hopmann, who visited Christmas Island for the recent eclipse, utilised the occasion to compare Mercury with neighbouring stars (Arcturus, Spica, Procyon, Regulus, Deneb, Denebola, etc.) and the planets Saturn and Jupiter. On September 5 it was brighter than Saturn by a whole magnitude, on November 5 even brighter than Jupiter, which was, however, lower down. It was seen at Malta on November 15 when only 12° from the sun.

Mr. Hopmann has reduced his observations to distance of Mercury from the sun 0.3871 , from the earth 1.0 , and obtains the formula $-0.711 \text{ mag.} + 0.03582 \text{ mag.} (a - 50^{\circ})$, a being the phase angle sun-Mercury-earth. The first term was given as -0.998 mag. by Müller and Jost, their second term being practically the same as his. In other words, he makes the planet a quarter of a magnitude fainter, thus indicating a still lower albedo, and a condition of surface probably approximating to that of the moon (*Astr. Nachr.* 5220).

PHOTOGRAPHIC STUDIES OF NEBULÆ.—Mr. J. C. Duncan contributes his third paper on the studies of the form and structure of nebulae from photographs made with the 100-inch and 60-inch reflectors and the 10-inch Cooke refractor in the years 1920 to 1922 to the *Astrophysical Journal* (vol. 57, No. 3). The previous papers appeared in volumes 51, p. 4, and 53, p. 392, of the same journal. The present communication is accompanied by eleven excellently reproduced plates. Evidence of the existence of dark nebulosity is found in N.G.C. 1977, M 78, the Trifid nebula, the dark objects Barnard 72, 92, 93, and 133, and the American nebula. Of great interest is N.G.C. 4038-4039, a bright spiral of unique form with faint extensions of extraordinary appearance. In a field the size of the full moon in Coma Berenices, the 100-inch telescope photographs no less than 319 small nebulae. The object N.G.C. 6822 is found to be a mixture of stars and small nebulae resembling the magellanic clouds.

In examining these reproductions taken with the great 100-inch mirror, one cannot but recall and admire the fine photographs which Dr. Isaac Roberts took with his small mirror of only 20-inches aperture. To take a case in point, it is interesting to compare the reproduction of the nebula N.G.C. 1977 in Orion taken with the 100-inch mirror with Roberts's reproduction in plate 17 in his volume of "Photographs of stars, star-clusters and nebulae," taken in 1889 and published in 1893. The exposure for Roberts's photograph was 3 hours 25 minutes, while that with the 100-inch was 5 hours 40 minutes. There is very little difference between these photographs except the sharpness of the details and the greater contrast in light and shade, which in the 100-inch reproduction has been secured purposely by repeated copying.