

REPORT ON ARCTIC MAGNETIC OBSERVATIONS.

THIS report, which was printed under the auspices of the Videnskabs-Selskabet of Christiania, at the expense of the Nansen Fund for the Advancement of Science, deals with magnetic observations made in the Polar expedition of 1898-1902 under the command of Captain Otto Sverdrup. The observations were taken by Messrs. V. Baumann and G. Isachsen, and reduced by Mr. Steen. A large part of the report is occupied by the reduction of the observations, which were not in reality very extensive. The following abstract of the mean results at the four stations where observations were made comprises the principal facts summarised on p. 81:—

Station	Rice Strait	Havne Fjord	Gaase Fjord	Gaas Fjord
Latitude N. ...	78 46	76 29	76 49	76 40
Longitude W. ...	74 57	84 4	88 40	88 38
Epoch ...	1899.2	1900.5	1901.6	1902.5
Declination W....	103 4	116 47	129 33	128 51
Inclination N. ...	86 0	87 1	87 41	87 53
Horizontal Force	0.04031	0.03315	0.02518	0.02353

The observations, as is evidenced by the smallness of the horizontal force, were taken at no very great distance from the magnetic pole, and the instruments, as Mr. Steen explains with regret, were not well adapted for use under such conditions. Captain Sverdrup's original programme, which had to be largely modified, would have taken him further from the magnetic pole, but, even if circumstances had been propitious, a modification in the outfit would seem to have been desirable. However zealous the observers, as Mr. Steen justly remarks, they can hardly be expected to retain their full interest in the work unless the behaviour of the instruments gives them confidence that the results being accumulated are trustworthy; and, it may be added, however competent those reducing the observations, the outcome of their efforts must be accepted with some reserve unless reliance can be placed both in the instruments and the observers. In the present case, economic grounds seem to have been largely accountable for the instrumental deficiencies. After the experience gained during the last few years, those responsible for expeditions to the neighbourhood of the magnetic poles will have small grounds for excuse if they fail to exercise due foresight in the choice of magnetic instruments and the training of magnetic observers in their use.

C. CHREE.

DEVELOPMENT OF LEMUROIDS.

THE development of the tarsier (*Tarsius spectrum*) and the slow loris (*Nycticebus tardigradus*) forms the subject of the seventh fasciculus of Prof. F. Keibel's "Normentafeln zur Entwicklungsgeschichte der Wirbelthiere," now in course of issue by G. Fischer, of Jena. The part before us is the joint work of Prof. A. A. W. Hubrecht and the editor. Although the text is necessarily of an extremely technical nature, the beautiful illustrations of embryos permit the student to see for himself how essentially different are the early phases in the development of these two strange Malay animals, which are included by most zoologists in the order Primates.

Prof. Hubrecht has for several years past devoted special attention to the developmental history of the tarsier, on which he has published papers from 1895 onwards. He has regarded the genus as the most primitive phase of the Primate type, sundered very widely indeed from all other lemuroids, with which it was formerly so closely associated. His unique material has been generously placed at the disposal of his coadjutor for the purpose of illustrating this fasciculus of the "Normal Plates," in connection with such material for the developmental history of the slow-loris as could be obtained—material, unfortunately,

¹ Report of the Second Norwegian Arctic Expedition in the *Fram*, 1898-1902, No. 6. "Terrestrial Magnetism." By Aksel S. Steen. Pp. 82. (Christiania, 1907.)

much less rich than that available in the case of the tarsier.

While Prof. Keibel, as already indicated, worked out the history of the tarsier, Prof. Hubrecht undertook that of the loris, and has likewise written the general account and the comparison of the two forms.

In the concluding section support is given to Prof. Hubrecht's original suggestion that, in view of the marked and radical divergence of their development, it is illogical to include the loris and the tarsier in the same mammalian order. Before their relative positions can be definitely determined and a thoroughly satisfactory classification of mammals in general formulated, it is necessary that the series of these normal plates of development should be very greatly extended, and our knowledge of the ontogeny of such forms as *Manis*, *Galeopithecus*, *Hapale*, and *Chrysochloris* and other insectivores very largely augmented. As an instalment to this most desirable end, the fasciculus before us is all that could be desired.

R. L.

MARINE BIOLOGY ON THE WEST COAST.¹

YEAR by year the report on the Lancashire Sea Fisheries Laboratory increases in bulk, and the fifteenth of the series is again rather thicker than its predecessor. It contains fourteen scientific papers, as against eleven in the previous volume, and in the present case two or three gentlemen other than members of the staff have contributed.

As usual, the volume opens with a general report and review by Prof. Herdman, the honorary director of the scientific work. This is followed by twenty pages by the same author upon sea-fishery research, in which he reviews the present situation and the nature of the work done in the international investigations of the North Sea, and criticises the value of that work from the point of view of the fisheries. Without either agreeing with or dissenting from Prof. Herdman's views, we can say that he has set forth a very clear statement of his case.

Mr. Andrew Scott's report on the sea-fish hatching at Piel again records the liberation of several millions of fry, and again lacks any word as to the results of thus increasing the fish population of the area. In another paper on sea-fish hatching in Norway, however, Captain Dannevig discusses what appear to him to be the results of liberating artificially hatched cod larvæ, but his conclusions are traversed by Mr. K. Dahl, whose paper on the same subject suggests that the increase of cod in the district shows no relation to the liberation of the fry, but is dependent upon variations in the currents of water which are responsible for the distribution of the eggs. Thus the value of "interfering" with the natural reproduction of the food-fishes still remains to be proved.

Mr. Scott also reports, as usual, upon the tow-nettings for the year, and we cannot but admire the amount of trouble taken; at the same time, we are inclined to be sceptical as to whether the value of such work is equal to the labour expended upon it.

The same author contributes a short paper upon the food of young fishes. In this paper also, Mr. Scott illustrates his capacity for taking pains, and there is no doubt that such work will prove valuable, especially when taken in conjunction with work upon the food of mature fishes, such as Mr. R. A. Todd has contributed to the North Sea investigations.

Mr. James Johnstone's paper upon this subject deals only with the plaice and dab, and is upon the same lines as the one he contributed last year upon the same subject. He has now, however, gone more carefully into detail, and shows that, although the dab is less particular than the plaice in its choice of food, both the species depend mainly upon lamellibranch molluscs, especially *Solen*, and his observations on this point agree well with those of Mr. R. A. Todd on the same species in the North Sea.

The fish-marking experiments were continued during

¹ No. xv., Report for 1906 on the Lancashire Sea-fisheries Laboratory at the University of Liverpool and the Sea-fish Hatchery at Piel. Pp. 269; illustrated. (Liverpool, 1907.)