

the seasonal outbreak should be looked on mainly as a reimportation of the disease from these larger centres or as an independent development of a local focus dormant during the off-season. If the former were the case, we might expect a larger incidence in the villages near the main lines of communication, and taking the Amritsar district as the area for investigation and the railways as the means of communication, Dr. Greenwood finds that in districts containing large centres, villages near a line of railway are, in fact, subject to a higher rate of plague epidemics than villages not so situated, while in districts purely or mainly agricultural, proximity to railways does not increase the liability. The greater liability in the former case is probably due to increased opportunity for personal intercommunication rather than to transport of merchandise, and he concludes that in districts favourably situated for such intercourse the spread of plague can be better explained on the hypothesis of reimportation than on that of recrudescence. The second paper bears on the problem of what circumstances determine the extent of an epidemic when plague has once shown itself, and why the mortality-rates in infected villages are subject to the variations actually observed. Dr. Greenwood is fully alive to the necessity of caution in accepting statistical conclusions based on the material at his disposal, and we give the barest indication of his results in saying that the rate of plague mortality is seen to depend on three factors: the length of exposure to infection, the number of inhabitants, and the situation of the village.

Besides some observations on the breeding of *Mus rattus* in captivity, and a summary of some recent observations on rat fleas, the report includes an interesting account of plague as it occurs in Eastern Bengal and Assam. This province has suffered from the present epidemic to only a limited extent, and the report, which is liberally illustrated by photographs, attributes this freedom chiefly to the scarcity of rats in the Bengali houses, a scarcity due both to the habits of the people and the structure of their houses. Two important papers by Dr. Rowland are sent from the research laboratory of the Advisory Committee, dealing respectively with a possible improvement in the preparation of plague-serum and with some of the problems connected with plague-vaccine. From the second of these it appears that it may prove practicable to obtain a vaccine of low toxicity, but undiminished immunising power, a result which if confirmed has a theoretical as well as practical significance not confined to plague only, but affecting the general question of immunity in infectious disease.

FOUR MAMMAL SURVEYS.

FOUR papers which have recently reached us serve to show the energy and vigour with which the collecting of mammals is being carried on in various parts of the world. If continued at the same rate for a few years longer, such surveys ought to go a long way towards completing our knowledge of the mammalian fauna of the globe, so far at least as external and cranial characters are concerned.

The first of the four papers is a report on the progress of the Indian mammal survey now being carried on under the supervision of the Bombay Natural History Society, in the Journal of which for October, 1911, the report is published. Collecting has been carried on in Kandesh and the Berars, where about 150 skins have been obtained. Apparently none of these represents new forms, thereby bearing testimony to the thorough manner in which collecting (for the most

part amateur) has been previously carried on in this part of the country. Interesting results in regard to the geographical distribution of species and the occurrence of local races are, however, expected in the future.

To vol. iv., parts iii. and iv., of the Journal of the Federated Malay States Museums, Mr. C. Boden Kloss communicates an account of the results of a recent visit to the Trengganu Archipelago in search of mammals and other vertebrates. The chain of small islands, of which Great Redang and the Perhentians are the chief, runs at a distance of from seven to twelve miles from the coast of the Malay Peninsula in a nearly parallel direction for about thirty miles. The only previous visit of naturalists to the archipelago appears to have been made by the members of the Skeat expedition in 1899. During an eighteen days' cruise Mr. Kloss obtained thirteen mammals which he regards as representing new forms; all these were named in the *Annals and Magazine of Natural History* for January, 1911.

The penultimate number of the Proceedings of the Zoological Society for 1911 contains the fourteenth report by Mr. Oldfield Thomas on mammals from eastern Asia, collected with the aid of funds furnished by the Duke of Bedford. This particular fasciculus deals with mammals from Shen-si, the most interesting of these being the golden takin (*Budorcas bedfordi*), to which reference has been previously made in these columns, but the whole survey, despite the fact that no strikingly new forms were discovered, has vastly increased our knowledge of the mammal fauna of Eastern and Central Asia. It is, therefore, a matter for regret that it is not to be continued, at all events for the present.

The fourth paper, "Notes on the Mammals of the Lake Maxinkuckee Region," by Messrs. B. W. Evermann and H. W. Clark (Proc. Washington Acad. Sci., vol. xiii., pp. 1-34), is of a totally different type from the above, dealing solely with the habits and environment of the mammals met with during a zoological survey of the region, and is an excellent sample of the best class of American work of this nature. Particular interest attaches to the reappearance of the opossum in the district, from which it had long been absent.

R. L.

TREASURY GRANTS TO UNIVERSITIES AND UNIVERSITY COLLEGES.

THE report of the Advisory Committee on the distribution of Exchequer grants to universities and university colleges in England, appointed by the President of the Board of Education last June, has now been published [Cd. 6140]. The committee as then appointed consists of seven members:—Sir W. S. McCormick (chairman), Prof. J. A. Ewing, C.B., F.R.S., Sir William Osler, F.R.S., Miss Emily Penrose, Sir Walter Raleigh, Sir John Rhys, and Sir Arthur Rücker, F.R.S., with Mr. G. M. Young as secretary.

The report states that in framing its recommendations for the distribution of the Exchequer grant, the committee has chiefly had regard to three factors—the needs of the several colleges, the amount of local support received by each, and the volume and quality of their work.

For the purpose of the present report the members of the committee have visited all the colleges coming within their purview except Nottingham, in considering which the committee had before it the report of the recent inspection conducted by the Board of Education. As a result of the visits to the various institutions, the committee says that the colleges gener-