

tion of England and Wales has been assessed at £3-125, and that of Scotland at £500. The commissioners have recommended payment of these home contributions from the development fund, in view of the advantages which British agricultural investigators will derive from participation in the scheme.

While it is unquestioned, the commissioners add, that advantages will accrue to agricultural science in this country from the creation of the bureaus, it is anticipated that still greater advantages will be derived from them by oversea workers. It is not only because of the dominating position which agriculture holds in the national economy of oversea countries that their representatives pressed for the bureaus. If this had been the main reason the proposal would have been made many years ago; for in some countries at least the need of a central organization has long been recognized. The immediate cause of the demand made at the conference was the clear realization by empire workers that the mother country is now in a position to offer them substantial aid. The institutions which have been built up as a result of the creation of the development fund in 1909 are taking a leading place in the application of scientific research to agriculture and Britain can offer, as twenty years ago it could not, much valuable guidance for those attempting to improve agricultural practice in the oversea empire.

CARNEGIE-AUSTRALIAN-HARVARD EXPE- DITION TO NORTHWESTERN AUSTRALIA

UNDER the combined auspices of the Carnegie Institution of Washington, which made the original grant, the Australian National Research Council, which made a generous supplementary grant, and the Museum of Comparative Zoology, Harvard University, Professor Hubert Lyman Clark, of the museum, has just completed an important investigation of the echinoderm fauna of the northern and western coasts of Australia. Leaving Cambridge in the spring, accompanied by Mrs. Clark, who has served as artist and general assistant, Dr. Clark attended the Pan-Pacific Scientific Congress in Java in May, as delegate from Harvard University and the American Society of Naturalists. After three weeks in Java, he and Mrs. Clark went to Darwin, N. T., where they arrived on June 13 and a few days later were joined by Mr. Arthur A. Livingstone, of the Australian Museum, who continued with them until the party reached Perth, a most willing, competent and congenial assistant.

At Darwin the collecting was poor, especially along shore, owing to the large amount of sediment in the water which tends to form a muddy deposit wherever it is not kept scoured off by tidal currents. During the more than six weeks spent at Darwin only sixty-

five species of echinoderms were found, though excursions to points from six to thirty-five miles distant were undertaken. Of the sixty-five species, not a dozen could be called at all common. On July 29 the party left Darwin and went to Broome, W. A., with brief stops at Wyndham and Derby on the way. These stops were long enough to show that local conditions at those ports were even more unfavorable for echinoderms than at Darwin, owing to the muddy water. At Broome, however, where two months were spent, the water is ordinarily very clear and marine life is extremely abundant. As local conditions are very varied and the tidal range very great (up to thirty feet and even more), Broome is a paradise for the marine zoologist. As the pearl-shell fishery is the one essential occupation, the local boats with their divers provide an unusual and important means of securing zoological material. Excursions were made from Broome, to Cape Leveque lighthouse, 142 miles to the northeast, and to La Grange Bay, Anna Plains and Wallal, 150 miles to the southwest. Altogether more than 170 species of echinoderms were secured in this region, many of which are apparently as yet undescribed.

On October 1 the party left Broome for Perth. There was a short stop at Onslow which yielded nothing and a day at Geraldton which yielded a few interesting species. At Perth, a stay of nearly three weeks, with important excursions to Rottnest Island and Bunbury proved most rewarding. The cooperation of the museum, university and government officials was generous and helpful to the last degree. Similar but briefer stops were made at Adelaide, Melbourne, Hobart, Sydney and Brisbane, and at all these places the courtesies extended knew no limits and the cordial cooperation shown was overwhelming. At Adelaide and Melbourne opportunities were given for examining both in the field and in the museums many of the fossil echinoderms of Australia, chiefly Tertiary. The cooperation of the Australian Museum at Sydney has been constant and most cordial during the whole investigation. Nothing has been left undone by Australian scientists which could further Dr. Clark's researches in any way. As a result of this hearty cooperation, it has been possible to study in life, under normal environmental conditions, some three hundred species of Australian echinoderms, about three fourths of which were seen on the northwestern coasts of the continent, a region hitherto a *terra incognita* to the marine zoologist.

THE GEORGE WILLIS PACK FORESTRY FOUNDATION OF THE UNIVERSITY OF MICHIGAN

THE promotion of practical forest land management in the broadest sense of the term is the object