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 EXPEDITION 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 Levéque 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

of a gift of $200,000 made by Charles Lathrop Pack, of Lakewood, New Jersey, to the University of Michigan. This fund is to be known as the George Willis Pack Forestry Foundation in memory of the donor's father, and the income from it will be used by the school of forestry and conservation in carrying out the purpose of the foundation.

In establishing the foundation, Mr. Pack stated that the school of forestry and conservation was chosen as the medium through which to carry out his plans for the advancement of forestry in this field "on account of its prestige, its facilities for teaching the broad principles of all phases of practical forestry and its experienced staff."

The income from the foundation is to be used for the salary and expenses of an experienced forester to be known as the George Willis Pack professor of forest land management, and for such other expenditures as may be necessary in carrying out the purposes of the foundation. In accordance with the wishes of the donor, who is keenly interested in the practical application of forestry, it is expected that the holder of this professorship will devote the larger part of his time to furthering the practice of forestry in the woods rather than in the classroom. He may, however, assist in the instructional activities of the school, and will doubtless work particularly with graduate students. He will be expected to spend considerable time in travel in order to keep in close touch with forest conditions and practices in other parts of the country and to make the results of his experience as widely available as possible.

In commenting upon the gift, Dean Samuel T. Dana, of the school of forestry and conservation, stated that the income from the George Willis Pack Forestry Foundation will be used, in accordance with Mr. Pack's wishes, for two major purposes—to develop the wild land properties owned by the university, and to cooperate with forest land owners in bringing about the practice of forestry and more profitable methods of forest management of privately owned lands. "The University of Michigan," said Dean Dana, "has three small areas of forest land in the vicinity of Ann Arbor, which are used both as outdoor laboratories for the instruction of students and for investigative purposes, and which are already under careful management. In addition to these, the university owns approximately 6,300 acres of wild lands in the northern part of the state."

In making his gift, Mr. Pack pointed out that the Biological Station at Douglas Lake in Cheboygan County contains some 3,300 acres on which forestry measures can advantageously be undertaken to supplement the work already under way by the zoologists and botanists at the station. Situated within a few miles of the city of Cheboygan and in the immediate vicinity of several summer camps and serving as headquarters for the biological station with a summer attendance of approximately one hundred students from all parts of the country, it is particularly well located for demonstration purposes.

Excellent opportunities for forest management are also offered by the Chase S. Osborn Preserve on Sugar Island in the St. Mary's River, presented to the university last fall by Ex-Governor Osborn. This tract of some 3,000 acres was burned perhaps fifty years ago and is now covered with a well-stocked second growth consisting of a wide variety of both hard and soft woods.

GIFTS TO THE SCHOOL OF FORESTRY OF YALE UNIVERSITY

YALE UNIVERSITY has announced three new gifts to the School of Forestry to be devoted to education, experiment and demonstration in applied forestry. The Charles Lathrop Pack Foundation given last year by Mr. Charles Lathrop Pack, of Lakewood, New Jersey, has been increased to $325,000. A gift of $100,000 to endowment has been received from Mr. and Mrs. Starling W. Childs, of New York. Mr. George Hewitt Myers, of Washington, is transferring to the school a tract of forest land in Tolland and Windham Counties, Connecticut, aggregating in area nearly 8,000 acres. These gifts, all closely related in purpose, constitute a new project, supplementing and greatly strengthening the work and facilities of the school of forestry in instruction and in advancing the knowledge and practice of forestry. Announcement is also made of the appointment of Mr. Nathan D. Canterbury, formerly State Forester of Louisiana, as director of the new Yale Forest, on the Charles Lathrop Pack Foundation.

According to Dean Henry S. Graves:

> The new gifts will enable the school of forestry to extend its field activities, both in connection with the training of students and in providing demonstrations of practical forest management. The new forest is large enough for a practical operating unit and for the demonstration of all the various activities involved in the management of a wooded estate of this size and character. Protection from fire, maintenance of roads, trails and other improvements, cutting of timber under skilful methods, forest planting, marketing of forest products, administration of wild life and many other features of applied forest management will be demonstrated at the Yale Forest. The undertaking will give special emphasis to the training of students and experimentalism in applied forestry; it provides also for owners of forest estates to see the practical results of forestry.
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> The forest is located in the towns of Union, Ashford, Eastford and Woodstock, in northeastern Connecticut. It