

Australian continent—as exemplified by the theory of a peneplane extending from New Guinea to Tasmania—Dr. Daneš cannot bring himself to accept, at all events in their entirety, the views of previous observers with regard to the establishment of present conditions. To put the matter briefly, he considers that the peneplane of eastern Australia was divided into a number of basins devoid of outlet and occupied by shallow lakes, which tended to dry up during prolonged drought, such lakes being, therefore, of independent origin, and not “cut-offs.” Climatic conditions were then much more favourable to the development of an abundant flora and fauna, which will explain the occurrence of the great extinct marsupials in the Pleistocene beds of Darling Downs. Desiccation of the area led to the death of the old fauna and flora.

In this respect he is in accord with Dr. A. C. Gregory, who wrote that “there is no trace either in the Darling Downs or any other part of Queensland of any violent convulsion of nature which would be adequate to cause the total destruction of the diprotodon and co-occupants of the country, and it seems most probable that their extinction resulted from a gradual change of climate and more effectual drainage of the watercourses—aided, perhaps, by some slight changes in level.” R. L.

SOME ENGLISH PUBLICATIONS ON AGRICULTURAL SCIENCE.

OF the numerous agricultural periodicals and journals published in Great Britain none is more important than the Journal of the Royal Agricultural Society, which comes out annually, and gives some account of advances that have been made in the practice or the science of agriculture during recent times. The current issue is the seventy-second volume, publication having been continuous ever since 1840; although smaller in bulk than some of the old volumes, it well maintains the high standard set by Mr. Mackenzie when he took over the editorship some four years ago.

The opening article, by Prof. T. B. Wood, gives an able summary of our present knowledge of the composition and food value of bread. Probably no single product possesses greater interest to the agriculturist than wheat, even though in many cases it has fallen to the level of a by-product, and has ceased to be the staple of the farm. The advances in milling technique have led to considerable alterations in the relative values of the different wheats; formerly a white wheat possessed chief value because it gave the whitest flour, while now a red wheat is equally useful. Recently the hard wheats of great strength have come into favour, because of their capacity for making a large loaf; these wheats are more economically produced in continental areas—Canada, the United States, &c.—than here. In general, however, flour is made from a mixture of wheats carefully graded to secure certain definite characters. This blended flour does not show the deficiencies in protein, &c., that an unblended flour would show in comparison with the whole grain, so that a usual argument in favour of brown bread loses much of its force. This paper is followed by one on the milling of wheat, by Mr. A. E. Humphries. Of the other papers, one on green crops, by Prof. Malden, is of more than technical interest, and shows that the ordinary agriculturist does not utilise as fully as he might certain plants that would be very useful to him.

An interesting investigation on ropy milk has been published by Mr. J. Golding in the Journal of the Board of Agriculture (No. 12). This is a disease of

milk brought about by bacteria, and causing the milk to take on a rope-like form when poured from a jug, or to draw out into long threads, sometimes a yard in length, when taken up in a spoon. Several bacteria are known that can effect this change, and one of them, the *Bacillus lactis viscosus* of Adametz, was investigated in some detail.

The possibility of growing tobacco in England is being investigated at the Wye Agricultural College by Mr. G. H. Garrad. It is proposed to grow the crop for the sake of its nicotine, which forms an admirable insecticide, but is at present very costly for the grower. Messrs. Garrad and Edwardes-Ker conclude that extraction of the nicotine from the leaf is not necessary, satisfactory washes being obtained when the leaves are simply macerated in water. Permission to grow tobacco for this purpose could not be obtained unless the leaves could be denatured so thoroughly as to be unsmokable. The authors are at present at work endeavouring to find some method of doing this.

GRANTS FOR SCIENTIFIC PURPOSES FROM THE DEVELOPMENT FUND.

A MEMORANDUM showing advances from the Development Fund, sanctioned by the Lords Commissioners of his Majesty's Treasury, to or through the Board of Agriculture and Fisheries, up to March 31, 1912, has recently been published as a Parliamentary Paper [Cd. 6252] (price 1½d.). The subjoined extracts show the amounts and purposes of the grants.

(1) IMPROVEMENT OF LIGHT HORSE BREEDING.

In 1910 the Board applied for an advance from the Development Fund in respect of a scheme for the improvement of light horse breeding, and in January of the following year the Treasury, on the recommendation of the Development Commissioners, sanctioned an advance of 39,800*l.* to be expended generally on the lines of the scheme proposed by the Board.

A further grant of a sum not exceeding 1250*l.* was also sanctioned to meet the expenses of administration. In August, 1911, the Treasury, on the recommendation of the Development Commissioners, sanctioned an advance of an additional sum not exceeding 10,000*l.* for allocation before March 31, 1912, to enable county committees to purchase brood mares in time for the breeding season of 1912, the original grant of 10,000*l.* having been allocated early in the financial year 1911–12 for the purposes of the breeding season of 1911.

The Treasury, on the recommendation of the Development Commissioners, has sanctioned an advance of 40,000*l.* or such part thereof as may be required in respect of the scheme, in the financial year 1912–13.

(2) AGRICULTURAL RESEARCH.

(i.) Interim Advances.

The Board made an application for an advance of 50,000*l.* per annum from the Development Fund for the organisation of a system to aid and develop agriculture by promoting scientific research and experiment, and for the provision of technical aid and advice to agriculturists. The Treasury, on the recommendation of the Development Commissioners, has sanctioned an interim advance of such part of a sum of 9706*l.* as might be required in the financial year 1911–12 for the purpose of making the following grants:—