

the District of Wang Ka (อำเภอวังกะ), Kanburi province. It is known in Siamese as 'Krawan', in Karen as 'Ko Wawng'. It grows in evergreen forest on the hills, at an altitude of about 500 to 1,000 metres. It is not uncommon, but usually the trees occur singly and at some distance apart. There is a small trade in the leaves, which are dried and sent to Bangkok.

The leaves have been examined at the Government Laboratory, and found to contain an appreciable quantity of camphor, so that the trees may be of interest from the commercial view-point.

About 10 kg. of air-dried leaves were distilled, producing a total yield of 1.2% crude camphor. The yield of essential oil, after removing a portion of the camphor by cooling, was 1.42% by weight. Of the total yield of camphor, 0.66% was obtained direct in the distillation, 0.37% on cooling the essential oil, and 0.17% on distilling the essential oil. The re-sublimed camphor was of a pleasant odour, had a melting point of 172°C., and a Specific rotation of +44.2° for a 20% solution in alcohol at 30°C. The essential oil (after removal of camphor by cooling) had a Specific gravity at 18°C. of 0.934, and a Specific rotation of +23.9° at 25°C.

The oil was fractionally distilled:—

Fraction 160°–195°C. 47% of a colourless oil of ester value zero.

Fraction 195°–220°C. 22% containing 50% crude camphor.

Fraction 220°–260°C. 7% of a dark green oil, of a pleasant odour.

REVIEWS.

The Genus *Dioscorea* in Siam. BY D. PRAIN AND I. H. BURKILL.
Kew Bulletin, 1927, pp. 225–245.

Sir David Prain and Mr. Burkill have added another paper on yams to the series they began to publish many years ago. In the present one they record 32 species of *Dioscorea* from Siam.

The authors start their paper with a discussion, illustrated with maps, of the geographical distribution of the various species. They show that the species characteristic of the Shan States and Yunnan do not extend much further south than Chiangmai; while those typical of the Malayan flora find their northern limit at about Chumpawn. Those that may be called the Burmese species extend well into Northern and Central Siam. A fourth group are characteristic of the tract of hilly country, with heavy rainfall, extending along the eastern side of the Gulf of Siam and into Indo-China. Nine of the species are now described for the first time, and are, so far, known only from Siam. Two other species, described elsewhere, are also known only from Siam.

There is a very interesting account of *Dioscorea esculenta*, a yam now widely cultivated in the tropics. Hitherto there have been only the most inadequate indications as to its origin. The plant in cultivation very rarely flowers, but male flowers were known. In 1815 female flowers appeared on a plant, of unknown

origin, cultivated in Calcutta. These were the only female flowers seen by any botanist, until others were recently obtained in Siam, where it seems to be truly wild. Siam, therefore, now appears likely to be within the region where it took origin.

In speaking of *Dioscorea alata*, the Greater Yam, Finlayson's "Mission to Siam" is quoted as being the earliest record of the cultivation of this yam in Siam. The authors, however, in going on to say that Finlayson must have been mistaken in regarding as belonging to *D. alata* an enormous tuber, weighing 474 lbs., have evidently misread the passage. Finlayson, after mentioning *D. alata*, goes on to speak of "a plant bearing affinity both to *Dioscorea* and *Menispermum*." This latter was the plant which formed the enormous tubers. No doubt it was the tuber of a *Stephania*.

One species, *Dioscorea oryzetorum*, now described by the authors, is almost confined to the great rice plain of the Inner Circles. Three varieties of this species are distinguished on the form of the leaves. All three varieties are common in Bangkok. The other two wild yams of the Bangkok area, *D. bulbifera* and *D. hispida*, are well known species.

Under several of the species are quoted valuable notes made by Mrs. Collins of Sriracha on the shape of the tubers, their preparation for food, and the Siamese names of the various varieties.

There is, as the authors point out, still a good deal of work on this genus to be done in Siam. In several species the form of the tuber is unknown, and in some cases the flowers of only one sex have been seen. No doubt, too, there are other species yet to be discovered in this country.

A. K.

Some Miscellaneous Notes on Big Trees in Siam. By D. BOURKE-BORROWES, Late Adviser, Royal Forest Department, Siam. The Indian Forester, Vol. LIII, No. 6 (June 1927).

In this interesting article Mr. Bourke-Borrowes has gathered together notes, from various sources, on big trees and big timber in Siam. These notes are illustrated by photographs of some of these giant trees.

In the author's opinion it is possible that in some parts of Siam certain species of trees attain dimensions which are equal to, or even greater than any recorded elsewhere; and he brings forward figures to support his opinion. Naturally the greatest interest centres round teak. What is believed to be the largest teak tree now standing in Siam, situated in the Province of Uṭaradit, has a girth measurement of 29 feet 5 inches, with a total height of 151 feet. Notes of several other teak trees with a girth of over 26 feet are given. The largest teak tree recorded in Professor Troup's "Sylviculture of Indian Trees" is situated in Travancore, and has a girth of 26 feet.

The largest teak log of which measurements were obtained