ASIATIC YAMS

An Account of the Genus Dioscorea in the East

(Annals of the Royal Botanic Garden, Calcutta, Vol. 14.) Part 2: The Species which Twine to the Right; with Addenda to Part 1, and a Summary. By D. Prain and I. H. Burkill. Pp. viii + 211–528 + xx + plates 86–150. (Alipore: Bengal Government Press, 1939.) 67 rupees; £5.

YAMS must have been one of the foods of primitive man, and in their wild state they still form one of the chief components in the diet of jungle tribes; indeed, in times of failing rainfall and consequent scarcity, they rise to a prime importance for the survival of individuals in remote tracts. These tubers are commonly found at a considerable depth underground, sometimes as much as five feet, and are often protected against the depredations of wild animals, principally pigs, by thorny growth above the tubers themselves. Considerable labour is demanded for their extraction, especially in times of duress when drought has hardened the soil. The wild man's tools are of poor quality, and it is at such times that the curse of Adam lies heavy on the untutored savage.

At what stage in this evolution, and by what chain of circumstances early man began to realize that he could make his life easier and more secure by growing his food artificially, and by what slow degrees he achieved this purpose, is a fascinating, if not very fruitful, subject for speculation. But achieve it he did, and in so doing he improved the quality and quantity of the yield by bettering the conditions under which it was grown, and by conscious or unconscious selection. Was the first step the result of a flash of genius in one man or a slow process growing up by accident? Presumably we shall never know. Under cultivation the size and shape vary very greatly in the same species, as can be seen from plate 125 of this work, where no fewer than 72 different forms of the tubers of *Dioscorea alata* L. are figured.

As is the case with many cultivated plants, it is not possible to state definitely where certain yams, now well known, are truly indigenous, even though it is known in what localities they are growing spontaneously. Some yams have poisonous properties when raw and have to be prepared accordingly before they are fit for human consumption.

The first part of this monograph, dealing with the species which twine to the left, was reviewed in NATURE of January 29, 1938, and a portion of the present part in that of November 25, 1939. In the latter survey it was pointed out that the systematic matter was not yet published. The full part has now been issued, and the whole of this noble contribution to botanical science is available to those interested.

The systematical portion of this part deals entirely with the section Enantiophyllum—the species which twine to the right. It comprises seventy-six species, that is to say, a few more than the sum of all the other sections. In it is included the most important species from the point of view of food material—*Dioscorea alata*, Linn. This yam has been very widely cultivated, not only in the East, but also in Madagascar, many parts of Africa and in the West Indies.

A simple and easily applied key to the species is provided and also keys to the varieties where subdivision calls for them. A full description of every aspect is given for each species, together with complete synonymy and references to literature. The herbarium specimens examined are listed under the subregional scheme adopted by the authors. All this, however, is not the sum total; a comprehensive history of each species is recorded with a discussion of the significance of the vernacular names applied to it; the uses are detailed, with information on cultivation and the preparation of the yams and bulbils for consumption. One feels that the authors have followed up every clue with the pertinacity and acumen of a criminal investigator, bringing to light every fact possible for the compilation of a complete 'dossier' for each species. The resulting production, moreover, is as entertaining to the discerning reader as the pages of a 'thriller'. In short, this monumental achievement can claim to be an exhaustive account of the Dioscoreas of the East, and it seems difficult to believe that anything is left for further investigation.

In the course of their researches the authors have found it necessary to make no fewer than seventy-four new species, one more than had been hitherto published. These have all been described previously in the pages of various journals; the great majority in the *Journal of the Royal Asiatic Society* or in the *Kew Bulletin*.

The sixty excellent drawings (besides three photographic reproductions and three plates of locality maps), are the work of several artists, but nearly one half are from the pencil of the junior author.

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