DEPARTMENTAL NOTES

THE TONQUIN, TONCA OR TONKA BEAN

T. H. PARSONS, F.L.S., F.R.H.S.,

CURATOR, ROYAL BOTANIC GARDENS, PERADENIYA

DURING the writer's last leave in England discussion arose in the correspondence columns of one of the London daily journals on the uses and market value of the essential oil—Coumarin—a product obtained from the bean of the leguminous tree, *Dipteroyx odorata*. The discussion was interesting to the writer as the tree is represented in the Peradeniya Gardens and gave a few fruits for the first time in 1931. Towards the end of 1932 the tree again fruited and produced a large quantity of fruit. The latter is a heart-shaped fibrous pod, strikingly similar to a small mango, dull green in colour and varying from 3 to 3½ inches in length and 2 to 2½ inches across. The single seed within the pod has a dark-brown chocolate covered soft skin, the kernel being almond shaped and varying from 1½ to 2 inches long by ¾ inches across. The seed when cut open is strongly fragrant.

The botanical details of this tree were contributed to the columns of "Tropical Life" as follows: "Tonca, rather than tonka, beans are 2 to 3 inches long when cured ready for market. They can surely be obtained from any first-class chemist. They come from a tree botanically known as *Dipteroyx odorata*, or more recently *Coumarana odorata*, which tree belongs to the leguminosae family. The beans are of commercial value, because among other reasons, they yield *coumarin* or *cumarin*, one of the bases of all or most perfumes."

"The bulk of supplies comes from Venezuela, in the north of South America, opposite our West Indian Island of Trinidad, whence the beans are sent to be steeped and well pickled in rum, a process known as curing them, there being no rum equal to good West Indian, either Trinidad or Jamaica. Latterly, when the price of *coumarin* was high, Trinidad has also been cultivating the tree, I believe with some success. *Coumarin*, itself, appears as crystals on the outside of the bean after they have been cured as above, when they assume a dark brown colour."

At Peradeniya 500 fruits were collected and sent to the nursery in in May, these being sown, intact, some in bamboo pots and others in beds, and germination was very satisfactory, 200 seedlings having attained a height of 6 inches or more by November—six months from sowing.

The parent tree is a very fine well grown specimen, having been introduced from Kew and planted here in 1897, and has therefore taken thirty four years to produce fruit. This however is no criterion of the fruiting peroid of the offspring since years elapse in first acclimatising such

exotics. A similar introduction was the Brazil nut tree which, though planted and cultivated under better conditions, took twenty years to produce its first fruits, the offspring however fruiting in 8 to 9 years from sowing.

The possibilities of the Tonca as a commercial proposition for Ceylon is difficult to forecast, but anyone in the Island interested in new products might give this a trial since well grown seedlings are now available for disposal.

The literature on this subject shows it to be cultivated on a small scale in Trinidad so that conditions in our low-country should be suitable. In Trinidad it is usually grown from seed, and takes from 7 to 15 years to produce fruit, but it is also stated that selected scions budded on seedling stock reduce this period to 3 or 4 years as well as increase yield and a certain number of seedlings are being reserved here for that purpose. The tree is not too particular as to its soil requirements, forming a long tap root and being resistant to drought, but has a preference for a sandy loam soil. The planting distances are stated to be 50 to the acre inferring thereby a large headed tree as indeed it is.

REPORT ON TRIALS IN CEYLON WITH ARTEMISIA

DURING the last three years trials have been made by the Economic Botanist and Curators, Peradeniya and Hakgala Gardens, of numerous species of Artemisia to see if they would grow in Ceylon as a preliminary to an attempt to produce the drug santonin which has such a large use by the Department of Medical and Sanitary Services, who annually use a quantity of the drug costing some Rs. 10,000/-. Two species of Artemisia (*A. vulgaris* and *A. Roxburghiana*) are found naturalised in Ceylon, but neither produces santonin. Outside species and varieties were therefore obtained, acclimatisation attempted, and the plants examined. Considerable correspondence ensued with various foreign botanists and institutions. There seemed to be some considerable confusion as to nomenclature among the various specimens received. In the summer of the present year (1934) we had among us for botanical research purposes a young Indian botanist who had made considerable study of the species of Artemisia in Kashmir and British and Asiatic territory in the North-Western India Frontier. As a result of his investigations he informed us that a factory had been established for the manufacture of santonin at Baramulla in Kashmir and that it was a successful commercial undertaking. He had knowledge of the field conditions under which Artemisia grew and he expressed the opinion that for santonin formation a cold spell and snow were desirable conditions.