

Notes on Cultivation of Hydnocarpus Trees.

(As we have received numerous enquiries with regard to the cultivation of the *Hydnocarpus* Trees, we feel that the following notes will be found useful.)

The chief difficulty in the raising of *Hydnocarpus Wightiana* plants lies in the inability to obtain fresh seeds. It is absolutely essential that the seeds of the *Hydnocarpus* species, like the clove, and many other oil-containing seeds, should be sown fresh, *i.e.*, as soon as possible after being picked or having fallen from the trees. Once the seeds have germinated there appears to be no difficulty in raising the plants.

Fresh seeds can be sown in beds and then transplanted when the seedlings have produced four or five leaves, or planted at once in their permanent position. A quantity of good leaf mould dug into the seed beds, or into the prepared holes for planting assists the young seedlings in getting a start.

The opinion of Mr. George McCabe, who cultivated the trees at Mourbhanj, India, is quoted by the Editor of *The Superintendent*, in the issue of April, 1929, as follows :—

“ I found it a good plan to crack the shells before sowing, being careful not to damage the seed in the process. Sow seeds in beds shaded from the sun and keep moist until germinated. When about six inches high, put into eight inch pots and place in a shaded spot—a verandah is an excellent place. Plant out the following year into their permanent places, about 16 feet apart in rows, in the rainy season. When well-established they must be well-watered in the hot weather and well manured. They will produce fruit in five years, and require no pruning except to make shapely trees.”

We are indebted to Dr. A. F. G. Kerr, Director of Botanical Section, Ministry of Commerce, Bangkok, Siam, for the following notes on the cultivation and yield of the *Hydnocarpus Anthelmintica* tree.

In its natural state *Hydnocarpus Anthelmintica* is usually found on a sandy loam and near water, either on the banks of rivers or on the edge of marshes. Occasionally it grows on mountains at an altitude of about 800-1,000 metres. It is an evergreen tree itself and its associates are mostly evergreens. The seedlings come up in fairly dense shade, on ground that has a good top layer of leaf mould.

In cultivation it can be grown with only partial shade and the seedlings are able to stand a fair amount of sun, but they should have some shade. They do well in a mixture of clay, sand, and leaf mould, and should have plenty of drainage. During dry weather they should

be watered every other day. The tree is often cultivated in the stiff Bangkok clay and is even planted along road-sides, but does not do so well as under its natural conditions. Growing naturally the trees along the river banks are subjected to occasional floodings during the rains, but for six to seven months of the year they are well above water level. Groves of pure stands of wild trees are frequent, and in such situations the trees are about 12-20 metres apart.

There is no exact information as to the age when the tree begins to bear, but, judging from the rate of growth of seedlings and size of bearing trees, it is probably not less than eight to ten years. In the forest, trees are not found bearing till they are of considerable size, with a trunk of at least 50 cm. in circumference. The trees probably go on yielding fruit for many years ; old trees, growing naturally have been found with a trunk circumference of over 4 metres. The yield is rather irregular, depending a great deal on the rainfall ; if the latter is deficient the crop is poor. If conditions are good, trees will fruit every year.

In a fair season an average sized tree, with a trunk measurement of about 1.20 metres, will yield some 200 fruit. The number of seeds in each fruit varies considerably—on a good tree from 25 to 115 in each fruit—but the average for healthy trees may be taken as 65 : that is, a total of 13,000 seeds for the whole tree. Mr. Marcan, Director of the Government Laboratory, Bangkok, estimates the average weight of 100 dry unhusked seeds to be 136.2 grams.

The region where *Hydnocarpus Anthelmintica* most commonly grows has an annual rainfall of about 1,270 mm. (50 inches), distributed chiefly over the months May to October. Long dry spells are usual during the other months. The mean temperature is about 27° C. (81° F.) with extremes of about 40° C. (104° F.) maximum and 14° C. (57° F.) minimum.