

# TEA CULTIVATION IN INDONESIA

## (REVIEW)

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"Handleiding voor de Theecultuur," a book of some 350 pages from the Proefstation West Java, is as much a guide to the young planter just starting his career as it is a mine of information on more complex problems for the "old hands" with years of experience in tea. Ir. A. F. Schoorel was inspired to produce a complete textbook on tea planting by the demand created by the sudden influx of large numbers of new planters who have taken the places of the more experienced ones, whose numbers were not only reduced by years of hardship in Japanese prison camps, but still further decimated by the extremists in the Civil troubles that followed. Every aspect of tea planting is covered in a readable and instructive manner and the book is copiously illustrated with 200 excellent photographs.

It is, of course, quite impossible to do justice to a book of this nature in the space of a short review, and the shortcomings of this article must be excused on these grounds. I have, however, endeavoured to pick out some of the features of tea planting technique as described for comparison with Ceylon methods.

The history of tea in Java dates from 1826, when it was introduced from China; some 50 years later Assam tea appeared, and this type of tea, with hybrid varieties now forms most of the crop. The early plantations were all established by the Government, but finding that they did not pay, they were gra-

dually disposed of to private concerns and small holders; the result of this policy was that by 1941, out of a total of 335,000 acres of tea, about half were owned by small holders, with an output of only 10 per cent of the total.

Most of the tea estates are situated in W. Java, where they form more or less adjoining large districts, but there are also some scattered ones in central and East Java. They are often situated on the slopes of more or less active volcanoes, and altitudes range from 300 — 6,600 feet above sea level. Most carry secondary crops as well such as quinine and coffee at higher elevations and rubber lower down, these being grown with the object of carrying the estates through lean periods for the tea.

As far as high shade is concerned there is a complete absence of our familiar *Grevillea robusta*. In fact shade trees and bush green manures are all leguminous. In the former category *Albizzias* (e.g. *A. Moluccana* and *A. sumatrana*) and *Iamtoro* (*Leucaena glauca*) are the commonest, while *dadap* (*Erythrina lithosperma*), *Derris microphylla*, *Gbricidia maculata* and *Acacia decurrens* are also widely grown. *Crotalaria anagyroides* is the most favoured bush green manure although the various *Tephrosia* spp. are also commonly planted. Apart from suitability to the particular elevation, the choice of green manure trees is dictated more than anything else by their resistance or susceptibility to root diseases. These are extremely serious in Java and have been estimated to destroy some 2½ — 3 million tea bushes a year, an equivalent of about 1,000 acres of plantation. Of this astonishing total, red root disease (*Ganoderma pseudoferreum*) accounts for about half, the remainder being attributable to *Rosellinia* and *Ustilina*, the black root diseases. For this reason shade trees are regarded merely as a necessary evil below about 3,000 feet and at higher elevations they are not encouraged.

An important sphere in which work has reached a far more advanced stage than in Ceylon is that of selection, both from seed and vegetatively by internode cuttings, and work on these lines has been in progress since 1913. A further development of the latter process is the production of clonal material by grafting which has been practised as a recognised technique for some years, and I hope to have an opportunity for a detailed translation of this section at a later date.

All new planting is done on the contour system, and for simplifying this it is recommended that every 5th row be lined with an instrument, the intermediate ones being interplanted by eye. Stump planting is the usual method adopted (cf. Rubber) and it is suggested that the nursery plants be centered at 12" high some 10 days before planting out so that the dormant buds have burst by the time they are planted out.

Considerable importance is attached to ground cover, and in new clearings, more particularly at lower elevations, every attempt is made to establish creeping plants such as *Vigna* (*Dolichos hosei*), *Indigofero endacaphylla* and *Ageratum* spp. by seed or cuttings. Weeds such as *Oxalis*, *Borreria*, *Mitoria laurifolia* and *Eupatorium* spp. are at this stage regarded as beneficial.

The question of manuring is dealt with in considerable detail and while generalisation is difficult on this point, it appears that the composition of manures and their method of application are very different from the accepted standards here. Differences in the proportion of the nutrients are accounted for largely by differences in soil composition, and soil types are classified into five distinct groups; thus some of these types are, owing to their origin, markedly deficient in potash, and potash constituents of mixtures for these types are as high as 70 lbs. per acre, with corresponding figures for phosphoric acid 50 lbs. per acre, and nitrogen only 55 lbs. per acre. Also it is surprising to note that it is customary to manure only once or at most only twice in a pruning cycle,

the mixture being applied immediately after pruning. The latest recommendations, however, conform more to the standard of Ceylon methods. It is admitted that at least up to the war, tea plantations in Java were very inadequately manured and much original research has been done in determining the effects of deficiencies of the main elements (See Potash Deficiency in Tea Cultivation, *Tea Quarterly*, XIII, p. 139, 1940).

In conclusion it is to be regretted that such an otherwise valuable book is not provided with an index.

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