COFFEE WORK AT H.A.E.S.

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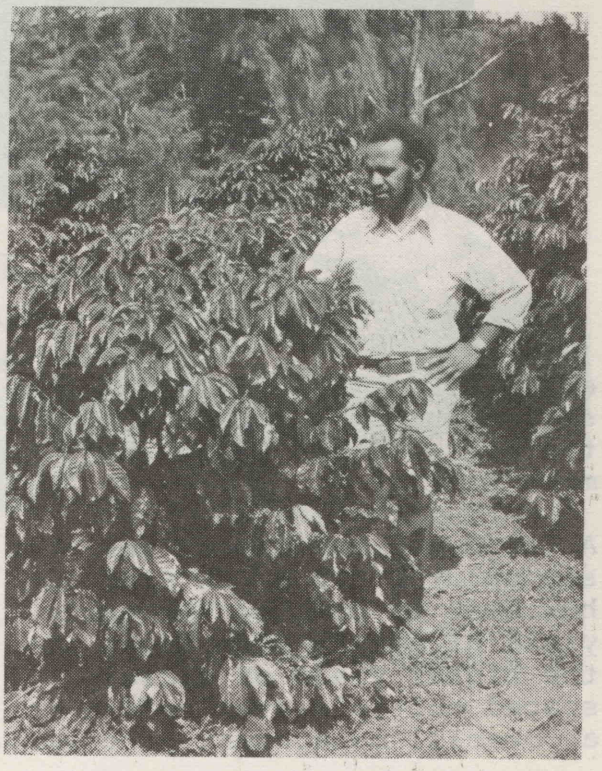
Coffee has been grown in Papua New Guinea for nearly a hundred years now but there is still plenty of room for improvements in the industry. Since about 85% of our coffee comes from the Highlands Provinces, the Highlands Agricultural Experiment Station has a strong interest in developing this crop and it is here that most of the research work on P.N.G. coffee is carried out.

This work includes investigating different methods of growing coffee and testing new varieties to see if they would do better than the ones we grow at present. Regular field days are held so that the scientists at H.A.E.S. can explain what they find out to the growers and extension officers.

As a result of the work on varieties, the former recommended variety 'Blue Mountain' is now being replaced by two new ones, 'Arusha' and 'Bourbon', which give a better yield. These varieties are of the Arabica coffee type and grow in many parts of Papua New Guinea at levels above about 900 m.

Some other varieties which are being tested at H.A.E.S. include the dwarf types, Caturra and Caturra Amarello. These bushes are very small, even when fully grown, and so it is easy to reach the cherries at harvest. So far, yield trials have given promising results although it is still not certain if these dwarf varieties can give as high a yield as standard sized bushes under Papua New Guinea conditions.



Coffee agronomist, John Yogiyo, with dwarf coffee bushes at H.A.E.S.

Pruning management is also under investigation at H.A.E.S. Left to themselves, Arabica coffee trees grow as spreading bushes with a single, strong, central stem. These single-stem trees begin to yield earlier than trees which have been pruned to make them develop more than one upright stem (multiple-stem trees). The best yields, however, are produced from multiple-stem trees which can be grown more closely together. Harvesting is also

Pruning trials at H.A.E.S. The bushes on the left have a single stem while those on the right are multiple stemmed.

easier from these trees as the stems can be bent down so that the cherries can be reached more easily.

A large new experiment has been set up at H.A.E.S. to find out how best to combine the early yield of single-stem trees with the higher yield of closely spaced multiple-stem coffee in an overall management programme.

One of the most serious coffee diseases in the world is coffee rust which is caused by the fungus *Hemileia vastatrix*. Fortunately, this disease is not present in Papua New Guinea and very strict quarantine measures are being taken to stop it spreading here from other countries.

In case the disease does get in to this country, however, HAES has a large collection of coffee varieties which are resistant to its attack. It is necessary to have a large number of these varieties because there are several different strains of the fungus and no one variety is resistant to them all.

Once it was clear which strain of the fungus was involved, a resistant coffee variety could possibly be selected from the collection and used to replace the bushes being grown now. This might only provide a temporary solution, however, because the rust fungus seems capable of changing its strain very quickly to attack bushes which were resistant to it.

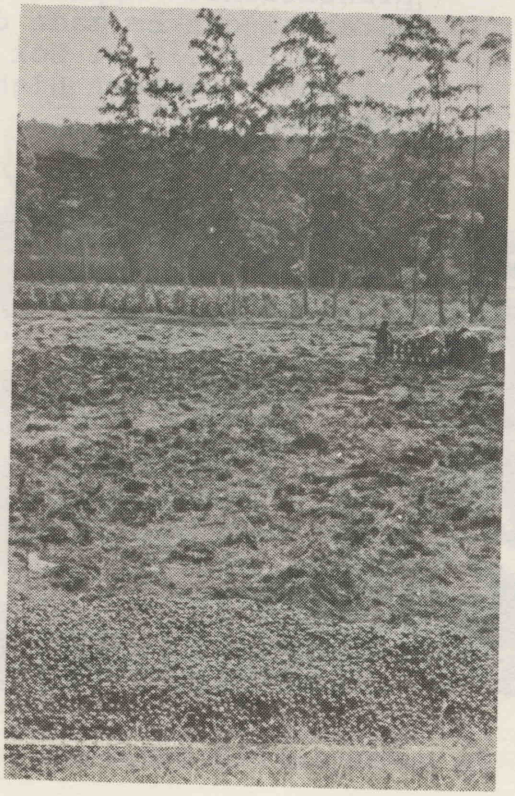
If coffee rust ever does reach the Papua New Guinea Highlands, we may have to keep changing the varieties grown, and even then there would almost certainly be a very great loss of production. Clearly, the best way of controlling coffee rust is to keep it out of Papua New Guinea in the first place.

As well as carrying out research, H.A.E.S. produces and supplies planting material to Arabica coffee growers all over Papua New Guinea. Seeds are easy and cheap to distribute, but they must be planted within three months of harvesting. They then grow quite easily.

Seedlings for distributing in

A view of H.A.E.S., Aiyura

A buffalo cart loaded with sacks of coffee at H.A.E.S.



The coffee skin pulp in the front of this picture makes very good fertiliser for sweet potato and other vegetable crops. Two other articles in this issue of HARVEST describe how the pulp is used.

Photos: J.W.J. Wankowski

Coffee variety collection at H.A.E.S.

the Eastern Highlands are grown in polythene bags in the H.A.E.S. coffee nursery. This nursery, one of several funded by the Coffee Industry Board, started production last year. When the seedlings get to the eight leaf stage, about five months after planting, they are ready for distribution.

Because of the weight of soil involved, distribution costs are high and each grower must make his own arrangements to collect his seedlings. The nursery is capable of producing over eight hundred thousand seedlings each year which is enough to plant over three hundred hectares.

The planting material from H.A.E.S. is supplied free of charge except to big commercial plantations. Applications for material can be made direct to H.A.E.S., P.O. Box 384, Kainantu, Eastern Highlands Province.

Coffee seedlings in the nursery at H.A.E.S.