In January, 1938, Mr. L. G. L. Copp, formerly of the Cawthron Institute, was appointed assistant to the Tobacco Research Officer, and in August Mr. R. C. Mickell was appointed to the position of Farm Foreman.

Three meetings of the Research Committee were held during the year. Every effort was made to secure the functioning of the Research Station during the 1938–39 season and to inaugurate the full research programme. Working-expenses were provided for from the annual grant from the Tobacco Board, calculated at ⅛d. per pound on the previous season's tobacco crop, and an equivalent grant from the Government. As no provision had been made for capital expenditure, the Committee approached the Government through the Department of Scientific and Industrial Research, and in September a grant of £2,250 was made available for buildings and equipment.

Sufficient working-equipment was obtained during the year to enable the research programme to be put into effect. A two-roomed whare was built to provide temporary office accommodation for the Research Officer. The erection of three flue-curing kilns and the bulking and grading sheds was commenced in December, 1938, and was completed by the middle of February. Three automatic stokers were very kindly supplied on loan by Messrs. Vale and Co., heating and combustion engineers, Christchurch, for use with the kiln. A further contract for buildings was put in hand in March, the buildings to be completed in May. These buildings comprise a glasshouse, pumping plant, garage, tool-shed, and minor buildings.

The first field-day was held at the Research Station in January, 1939, and was well attended by about one hundred and fifty tobacco-growers and interested persons.

RESEARCH ACTIVITIES.

The Research Committee approved a very extensive programme of research to be shared between the Research Station and the Cawthron Institute according to the facilities available. The work of the Research Station was confined for the time being to field experiments, and that of the Cawthron Institute to cover a soil survey of the tobacco soils of the Motueka-Riwaka district and chemical and mycological investigations.

Tobacco Research Station.

The research programme commenced in August with an extensive series of seed-bed experiments. The experiments included varying fertilizer treatments, the inclusion of trace elements in the fertilizer formula, the use of different seed-bed-covering materials, and different methods of raising the seedlings.

The field programme was an extensive one, and in all 11 acres were placed under experiments, with the experiments arranged on uniform soil types on the property with the aid of the detailed soil map made by the Cawthron Institute.

The experiments are as follows:—

(1) *Rate of Fertilizer Application.*—Standard fertilizer was applied on two soil types at rates equivalent to 600, 800, 1,000, and 2,000 lb. 3–8–6 mixture.

(2) *Variation in the Percentage of Nitrogen and Potash in the Fertilizer.*—Nitrogen and potash was varied from half to double, both singly and in combination in the standard fertilizer (3–8–6).

(3) *The Addition of Lime, Magnesia, and Boron to the Fertilizer.*—Lime was applied at the rate of ½, 1, and 2 tons per acre; magnesia as magnesium carbonate 100 lb. per acre; and boron as hydrated borax 20 lb. per acre.

(4) *The Use of Fish-meal as a Source of Organic Nitrogen.*—Fish-meal was used as an alternative to dried blood as a source of organic nitrogen in the fertilizer.

(5) *Chlorine and Sulphur Content of the Fertilizer.*—As the inclusion of a percentage of chlorine in the fertilizer is beneficial to the quality of tobacco, varying percentages of chloride were added to the standard formula. High sulphur content of the fertilizer adversely affects the quality of tobacco. In this experiment ingredients of low sulphate content were used.

(6) *Variety Trials.*—Seed from 107 different varieties and strains were used. Comparisons were also made with seed of the same strains grown overseas and in New Zealand.

(7) *Topping and Lateralling Trials.*—The effect of variations in both time and method of topping and lateralling were investigated.

(8) *Comparison of Glasshouse-raised and Bed-raised Seedlings.*—Seedlings grown in the glasshouse until about 1 in. high and then pricked out into the seed-bed until sufficiently large to transplant into the field were compared with seedlings grown from seed in the seed-bed without pricking-out.

(9) *Mosaic Investigations.*—Observations on the mosaic disease were made over all the experiments.

Report of Tobacco Research Officer.

The Research Officer has been fully occupied with the activities at the Tobacco Research Station, leaving no time for work among the growers. The year has proved a difficult one, both on account of the adverse climatic conditions and the fact that during the first year of work many obstacles had to be overcome and much temporary and makeshift equipment utilized.

The year may best be regarded as a preliminary to the actual work of the Research Station, which has been most useful in training the staff to deal with research work and to smooth out the details of the long-range programme so that, after trial, it can be set out to give the best results. By next season the Research Station should be well equipped in every way to deal competently with the full programme.