

### PHORMIUM TENAX.

No new developments have taken place in regard to the growth, breeding, and selection of strains of *Phormium tenax*, but the experimental areas have been maintained, and new knowledge of the growth qualities of those strains already selected for study is being accumulated. The production of a more efficient stripper is still receiving attention, but it has not yet been found possible to conduct trials with a machine of new design, which is being constructed. In view of the possible use of phormium as a source of cellulose, some yield-determinations have been made, but it does not yet appear that this plant can be utilized for the economic production of cellulose in New Zealand.

### WHEAT RESEARCH INSTITUTE.

In all sections of its activities the work of the Wheat Research Institute has shown extensions. Progress has been made with a new crossbred wheat, which, after being subjected to very rigorous tests, gives indication that it will equal Tuscan in yield and will excel it in flour extraction and in baking-quality. Investigations of the Jumbuck variety have also revealed the hitherto unrealized good qualities of this wheat as a flour and bread-improver. Investigations of flour-mill technique have shown that a great deal of improvement in flour-quality is possible by the introduction of certain modifications, the details of which have been worked out at the laboratory. In consequence, the chemist will now pay a series of visits to all mills with a view to introducing these newer methods for increasing their efficiency and the quality of the flour-output. As a result of researches made into wheat by-products, the manufacture of several new grain products has been started locally. Similarly, assistance has been rendered to bakers in the development of a number of new products or the improvement of lines which previously were lacking in quality.

The value of scientific assistance to a group of industries and the confidence that such inspires has been evidenced by the unanimous support that has been accorded to the proposal to extend the term of the legislative sanction for the Wheat Research Institute for a further period.

### KAURI-GUM.

Sound progress has been made regarding the preparation of high-grade resin extracted by solvents from low-grade dark-coloured swamp-gum. The laboratory tests which previously showed promise have now been tried out on a semi-commercial scale, on a modified extraction plant at Henderson, and have yielded a resin of greatly improved colour and general quality. Sufficiently large samples of this product to enable a commercial assessment and valuation to be made have been sent to Great Britain, and advice has been received that gum of such quality will prove acceptable to British manufacturers of varnishes and lacquers.

### PLANT RESEARCH STATION.

The work at this Station has a very direct bearing upon the wide range of farm problems. In consequence of the investigations connected with strains in grasses and clovers, the pastures of the Dominion are now being gradually improved, through the replacement of poorer strains by better types, a course which will increase markedly the standard of land-utilization and result in an increase and a cheapening in production. The disease-investigations have also enabled a large measure of control to be secured over such serious farm pests as smuts, club-root of brassicas, dry-rot of swedes, and collar-rot of peas. The result, in consequence, will reduce the element of risk with these crops and will render a greater supply of fodder to be available for the flocks of the Dominion, as well as provide excellent material for developing an export trade in high-quality farm seeds.

### DAIRY RESEARCH.

Conditions in the dairy industry have directed research investigations particularly towards questions of quality in both butter and cheese during the past season. Consequently, in addition to a number of fundamental problems, whose ultimate solution is imperative if the reputation of New Zealand's dairy-produce is to be increased, work has also been directed into certain channels which showed promise of bringing quicker results of benefit to the industry. Hence it has been possible to render useful advice to the industry on a whole range of matters which form integral parts of manufacturing processes, and the accumulated effect of this has been the raising in the standard quality of factory output during the past season. These investigations have revealed that certain parts of the manufacturing processes possess a greater significance than has hitherto been reckoned on, and that due attention devoted to them will be well worth while in order to effect improvements in the