

number of cases noted of pneumonia in sheep, but so far, casual organisms have not been identified. Arthritis and pleurisy in pigs were the subject of extensive investigations, while fowl-pox, coccidiosis, and leukaemia in poultry, have received further attention. Other matters dealt with during the year include grass staggers in dairy cows, magnesium metabolism, toxicity of common smuts, vitamins, and mineral deficiency.

THE CHEMICAL LABORATORY.

As usual, a wide range of work of economic value has been carried out by the Chemistry Section. Several aspects of the control of bush-sickness have been investigated. Previous work in regard to the composition and the propagation of pampas grass has been extended. In regard to the iodine investigation progress has been made with the analysis of many glands already in hand. In general, in the North Island the supply of iodine is not below the critical point on any extensive areas, but some of the alluvial and river-bed soils, especially in the Wellington Province, are inclined to be low in iodine. In the absence of evidence of iodine deficiency, the use of iodized licks is not advisable, as iodine in excess of requirements is considered of no advantage, and may be injurious. A wide range of samples of soil, many being in respect to reclamation projects, was analysed. Most interesting results of distinct prospective practical value were obtained in an investigation in which disorders and mortality in pigs were correlated with the use of galvanized-iron piping for the transport of skim-milk to piggeries. In the meantime, pending further investigation, caution is recommended in the use of long lines of galvanized-iron pipes in the above connection. Included in the 994 samples received for examination during the year were soils, liming materials, fertilizers, pastures, weed-killers, dips, toxicological specimens, thyroids, and bloods. The Fertilizers Act was administered as formerly, the number of brands registered was 924, the number for the previous year being 851. The chemical control of weeds, especially ragwort was investigated.

FARM-MANAGEMENT SURVEY.

In last year's report reference was made to the growing need for the study of farm-management which is distinct from both stock-management and crop-management, and which takes into account the farmer himself in relation to such matters as his finances, his supply of labour, his transport, and his markets, present and prospective. During the year, a farm-management survey of Hawke's Bay was initiated. This survey is being conducted as part of the land-utilization investigation being sponsored by the inter-departmental Land Utilization Committee. The Hawke's Bay farm-management survey is still in its early stages, during which the final results cannot be forecast reliably, but the work already done suggests that information of direct value will be obtained and that greater farm-population and greater farm-production in Hawke's Bay will be indicated as economic. The urban and rural communities of Hawke's Bay are interested in and assisting with the work.

IRRIGATION IN CANTERBURY.

Because of the present and prospective development of irrigation farming in Canterbury, a special advisory service designed to provide the best available information about irrigation under Canterbury conditions has been inaugurated. If the best economic results are to be obtained from irrigation such information must be reflected in practice, and so it is intended that the service will keep in very close touch with the irrigators, and it is expected that as the area under irrigation is increased there will be a correspondingly increased demand for advice—a demand which will call for a strengthening of the service.

ADVISORY AND INSTRUCTIONAL WORK.

The extensive manner in which the advisory and instructional services of the Department continue to be utilized reflect to some extent the ever-changing problems and difficulties that confront farming. It may be said with safety that the demands upon the Department are now more extensive, more varied, and more exacting than formerly, and this trend may be expected to continue if the increase in farm-production, which seems in prospect, takes place. Whether an increase in our present farm-production becomes a permanent feature of our national economy is dependent largely upon whether it is economic. Whether it is economic depends in its turn, to some extent at least, upon the standard of efficiency attained in farm-practices, and farm-management. Hence, it is of some moment that increased production, correlated with increased efficiency, and lowered cost of production, is often obtainable in several spheres of farming in New Zealand merely by better application of knowledge we have at hand. However, the translation of knowledge into practice sometimes takes place quite slowly, and this seems to be