

is sound in principle and should prove valuable. As regards vaccine treatment, our own observations do not show any improvement in the position, and the recorded experiences of research workers in Great Britain and elsewhere abroad cannot be regarded as satisfactory. With a large proportion of more or less heavy-milking cows a certain percentage of cases of mammitis may always be expected, especially when milking-machines are in use, and rendering the earliest manifestations of trouble likely to pass unnoticed. Still, everything possible must be done to reduce the number of cases to a minimum.

The research into pulpy kidney in lambs has, in the hands of Mr. Gill, made further progress, and a notable advance in knowledge has been made.

Further work in connection with ante-partum paralysis in ewes indicates concurrence with the view of Mr. Leslie of Lincoln College that the exciting cause is over-fatness followed by the effects of food shortage.

The campaign against lymphadenitis in sheep has been energetically carried on. Its success is dependent upon the co-operation of sheepowners, and this is being secured to an increasing extent. The British health authorities have still further relaxed their restrictions in the matter of the examination of imported carcasses, and their later reports indicate that the measures taken here are giving good results. This disease does not affect the general health of sheep, but it is necessary to still continue the special examination of all mutton and lamb carcasses in order to ensure as far as is possible that no carcasses containing the characteristic lesions of the disease are exported.

The appended reports of the Director of the Live-stock Division and of the Veterinary Laboratory staff give details of the conditions existing and the work done in connection with animal disease generally. The field-work of the Veterinary staff and the Stock Inspectors has been a valuable factor not only in direct disease control, but also in the dissemination of advice to stockowners in management methods aimed at the maintenance of health and productivity and the prevention of disease.

INVESTIGATIONS INTO NUTRITIONAL DISORDERS IN STOCK.

A considerable amount of work has been done during the year in connection with stock troubles arising from nutritional causes. These may be broadly differentiated as those resulting from unsuitable feeding and those resulting from soil deficiencies. The first-mentioned have not been evident to any great extent (apart from the ever-present and too-often-seen failure on the part of farmers to feed and fatten pigs to the best advantage) except in drought areas, where no investigation was needed. In one Southland district, however, where serious trouble in sheep and lambs occurs shortly after midsummer, a thorough investigation is being carried on, as the conditions are quite unusual. Soil and plant chemistry play an important part in this, and details will be found in the appended report of Mr. Aston, Chief Chemist.

As regards trouble arising from soil deficiency, bush sickness is now largely amenable to preventive and curative treatment under more easily carried out methods than heretofore. This is the result of using limonite (a hydrated oxide of iron) in licks or otherwise. It is cheap and effective, being much more freely taken in licks by both sheep and cattle than were the iron compounds previously in use. The very full knowledge we now possess of bush sickness and its treatment warrants a great reduction in strictly investigational work connected with it, and a concentration on the effort to bring preventive measures into more general operation in all affected areas.

With the extension of settlement on previously unoccupied or lightly stocked land, coupled with the geological survey work carried out by the Research Department, other areas, not previously recognized as such have been found to be bush-sick in varying degrees, but the knowledge now possessed enables advisory officers to put farmers in the way of satisfactorily combating the trouble by the adoption of suitable management and treatment methods. Work in connection with other manifestations of soil deficiencies has been actively pursued. It is dealt with in the Chief Chemist's report.

LIVE-STOCK REMEDIES.

Of late years a number of proprietary remedies for various live-stock ailments, particularly those affecting dairy cows, have been on the market, and their sale has been energetically pushed through the medium of advertising and direct canvassing. Some of these are in the form of licks, the remainder being preparations for either internal administration or outward application. Taking the dairying community alone, the annual outlay of farmers in the purchase of these preparations must amount to a very large sum, and while some are good and others useful in varying degrees,