

There are still some 14,000,000 acres of occupied land covered with tussock and other native grasses, and deterioration has been serious on a percentage of this area. Despite losses in fertility through erosion and other causes of areas which were once sown in grass it will be seen that the best of our grasslands to-day are more thickly populated by stock than ever they have been before. Even with the increasing density of our stock over our high-producing areas there is no immediate likelihood of a shortage in the quantity of feed available, but equal confidence cannot be expressed in regard to quality of the feed-supply, management of heavily concentrated stock, or the principles employed in the breeding of some of our farm animals. It is not implied that we are radically astray in any of these factors in live-stock farming, but there are wide gaps in our knowledge, and until these gaps are closed and annual stock losses reduced it is essential that we maintain a critical attitude.

In his annual report last year, the Director-General made the following observations :—

“ It is customary to congratulate ourselves on the absence of many serious animal diseases rife in many other stock-producing countries. This, however, does not mean the leakage and consequent increased cost of production brought about by animal disease is not serious. The position is far from satisfactory, and the intensification of production brings in its train an intensification of the problem. Many of our most serious diseases are intimately connected with degrees in the plane of nutrition. Our grassland management and research has been more from the agronomic than the veterinary angle, and at present is quite unbalanced. Proper orientation from both angles is essential, but this will come about only by extensive research in problems now almost unexplored. On the one hand stock losses each year are costing us some millions of pounds, while on the other hand research aimed at their avoidance runs into a thousand or so annually. It is urgent that the position should be rectified. In the dairy industry alone a reduction in the replacement of stock lost through disease to a satisfactory low percentage would reduce dairy costs, or rather raise labour-unit efficiency to a point where fertilizer-costs, the main expenditure of the dairy-farmer, could be offset. In sheep-farming, also, if the vitality of young and breeding stock were brought to a satisfactory point, farming costs would be appreciably reduced.”

Since those paragraphs were written the need for intensified investigation, both into disease and on the positive side of maintaining our flocks and herds in a healthy condition, has become even more urgent. The outbreak of so-called facial eczema in various parts of the North Island, and the heavy mortality among sheep in Canterbury, have focused attention on specific problems which are being specially investigated, but there are a number of other problems, not individually as pressing but serious collectively, which must also receive immediate attention. Perhaps the greatest of these is animal nutrition generally, as this factor enters into a number of our present live-stock troubles, including facial eczema. This problem in relation to New Zealand pastures in different seasons or in various stages of growth or in relation to hay and silage or the common supplementary crops has yet to be thoroughly investigated.

Generally, the greater the effort towards the breeding of animals of high production, the greater is the problem of nutrition, but because of the abundance of feed, little attention has been paid to this aspect of animal husbandry. The quantitative production of feed has given rise to uneasiness only in abnormal seasons and in certain districts, but it has been taken for granted that quantity and quality have run parallel. This is quite understandable in a country where stock are not housed in the winter months and the farm is capable of supplying in bulk at least the fodder required to carry stock throughout the year. Seasonal changes in pastures have not been subject to comprehensive analyses from a nutritional viewpoint in the same way as studies have been made of the composition of artificial foodstuffs which are needed to supplement farm-grown fodder in countries with less favourable climatic conditions. But the time has arrived when this work must be done on a scale in keeping with the importance of animal-production in the Dominion.

More and more emphasis is being laid on the milk-producing animal, whether it be the cow, the ewe, or the sow, and, although our best pastures have admirable milk-producing qualities, we cannot be equally certain that they supply sufficient nutritional support to our principal farm animals at various stages of their career. For example, if the progeny of our breeding-stock is to be constitutionally vigorous and the vitality of breeding-stock maintained, it may be necessary to revise the feeding procedure now generally practised. It is unfortunate that there is a tendency to neglect animals not in production, and when the period of gestation is in the winter this neglect frequently results in malnutrition, affecting both mother and