# POISONOUS PLANTS IN NEW ZEALAND

HERBIVOROUS animals on free range indulge a wide and varied taste in the plants they eat as fodder. Their taste, however, does not always lead them to distinguish between plants that are safe and useful as fodder and plants that are poisonous. Many plant associations include at least some species injurious to stock, and in consequence grazing animals are often exposed to the risk of harm from eating these species. The risk is greater when animals range over large tracts of land on which the herbage is subjected to very little control by man, and is increased still further when the native flora includes a large number of poisonous plants. As more restraint is placed on the animals by subdivision of the grazing areas, and, particularly, as the herbage itself is controlled by the planting of desirable pasture species and by intensive care and management of the crops, so does the risk of poisoning by plants become correspondingly reduced.

Among farming countries of the world New Zealand is relatively fortunate in the number of stock lost from poisoning by plants. A considerable proportion of the stock is grazed under a system of intensive management which normally keeps the pastures free from invasion by toxic plants. The remaining stock on the relatively extensively managed hill country and on the extensively managed highlands are not exposed to as great a number of poisonous native species as are those in some other lands. Losses from plant poisoning are nevertheless appreciable and constitute a steady, if small, drain on the resources of the farming industry and on the profits of the individual farmer. Even intensive management of pasture may sometimes fail to give protection against invasion by toxic plants: For example, heavy growths of the poisonous variegated thistle may occur in pasture swards debilitated by drought; adverse weather may temporarily change pasture to a toxic state capable of producing facial eczema in stock; on extensively managed areas introduced ragwort has become established and presents a difficult problem of control; and the native tutu still exacts its toll of animal life.

THIS article introduces a series of descriptions of poisonous plants which grow in New Zealand by H. E. Connor, Botanist, Department of Scientific and Industrial Research, Wellington. They will be accompanied by 26 illustrations. Readers who are likely to find the series of interest should retain the glossaries printed in this issue for use with the descriptions and illustrations of plants to appear in subsequent issues of the "Journal".

This series of articles comprises part of a very full and detailed survey of the known poisonous plants, both native and introduced, that occur in New Zealand. Information has been gathered from many sources—from personal observations, from the records in the archives of Government Departments, and from the published literature of New Zealand and of countries overseas. Added value has been given by the co-operation of numerous men in the field—Government Veterinarians, Instructors in Agriculture, and Inspectors of Stock—who have supplied particulars of the distribution of poisonous plants and of symptoms and the incidence of stock poisoning in their districts. Analysis of such data supplied in answer to a questionnaire has been in itself a not inconsiderable task. No information was available about the effects of many native plants on animals, and experimental feeding work on samples collected by the author was carried out at the Department of Agriculture Animal Research Station, Wallaceville. The result is a valuable contribution to knowledge of poisonous plants. It is a comprehensive reference to which to turn when stock losses have occurred, but, still more important, it can be of signal value in preventing loss of stock. In general, avoiding loss entails preventing access of stock to poisonous plants. It means eradication and destruction of poisonous plants, fencing off of areas growing toxic plants, and careful disposal of poisonous clippings or trimmings. For all such work recognition of poisonous plants is a necessary preliminary; the descriptions and illustrations in these articles will enable such knowledge to be acquired. Only when the information is used to prevent stock losses will it achieve its purpose fully.

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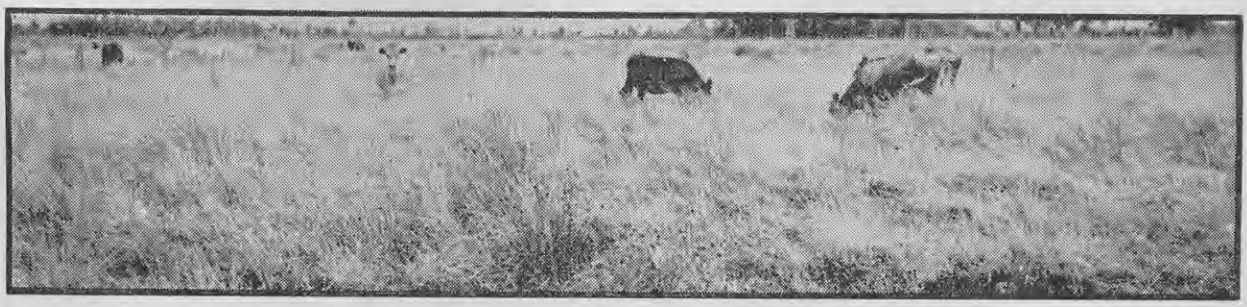

Grazing stock cannot be trusted to distinguish between safe and poisonous plants.