

Another point that is of surpassing interest from an ecological view is the fact that in primitive New Zealand there were no grass-lands that could be termed meadows and that could be cut for hay—that is, no grass-land showing seasonal growth, and where the herbage was more or less even-aged, was present. In fact, the only primitive grass-lands—the tussock areas—were composed mainly of grasses that, so far as their vegetative development is concerned, occupy a position nearer to shrubs than they do to the ordinary flat-leaved grasses which comprise the main vegetation of true meadows. The present artificial and artificially induced pastures of New Zealand are nearly all of the meadow type, and although not normally cut for hay to any appreciable extent (less than half of 1 per cent. are utilized for hay-production), they would be very largely so dealt with were our climate sufficiently rigorous as to necessitate general stall feeding during the winter months.

How New Zealand has converted her primitive vegetation into meadow-land is a matter of intense scientific interest, bearing as it does on the evolution of grass-land in general. At the same time its study is of far-reaching practical importance, as the process is still in operation. A complete knowledge of the basic principles involved, and the influence and interaction of the various factors concerned, would enable the art of the conversion of primitive vegetation into grass-land to be applied with even greater certainty of success than has been possible in the past. Each year in New Zealand the conversion of over a quarter of a million acres of native vegetation into grass is undertaken, and at the present time some fifteen million acres have been so dealt with. A fair proportion of this area is now under some type of rotational system, but over ten million acres is still occupied by a vegetation derived from the original grass mixture with which it was sown, often profoundly modified according to the conditions to which it has been subjected. Owing to the topography of much of New Zealand inhibiting any general use of the plough, much of this land is destined to remain in grass "for all time," and with this in mind the importance of success in the conversion of native vegetation into grass becomes clear. The effect of the failure of a crop under a rotation system is generally quite transient, but initial failure in the conversion of primeval vegetation into grass spells ruin to the land from a pasture point of view, or at least enormously increases the difficulty and cost of finally establishing a payable and permanent crop.