

lotus corniculatus should be employed. For stiff clay and clay-loam soils grass-mixtures should include crested dogstail, cocksfoot, timothy, poa trivialis, white clover, alsike, and cow-grass; also lotus angustissimus for northern soils. Cocksfoot is a most adaptable grass, being of special value for broadcasting on hilly and rough land generally. The foregoing embrace the more important elements in computing pasture mixtures suited to varying soil and climatic conditions.

Under this important consideration pertaining to the premier crop of the country, there arises the question of breaking up land and laying down to grass afresh. The best system, all things considered, is to adopt, where possible, a rotation of crops suited to the conditions and kind of farming carried on, and to lay the land down to grass periodically under this rotation. The period during which a particular area is pastured will be determined principally by its ability to carry a profitable grass lea and by its suitability for growing and the market prices prevailing for other farm crops. There is in parts of the country land that has been in pasture continuously for twenty-five years—in many instances land that has never been broken up. Where land can be ploughed and cultivated it is decidedly in the interests of greater production to break it up periodically (this does not necessarily mean at short intervals) and to renew the pasture, preferably under a suitable rotation system in which grass is the dominant crop. Periodic renewing of the pasture crop, where at all possible, is of very great importance to increased agricultural production in New Zealand.

PROVISION OF WINTER FEED AND SUMMER FORAGE.

The provision of winter feed in quantity sufficient to carry live-stock satisfactorily through that period of the year is a matter that should, particularly in certain districts, be given more consideration. In some parts the condition in which dairy cattle, for instance, struggle through to the spring is deplorable; and this is due to neglect on the part of their owners to provide the all-necessary winter feed. The climate of certain of these districts is highly suitable for the growing of suitable forage crops, and this is so to some extent even in the winter period itself. Apart from the provision of such feed in the form of hay, ensilage, or roots (mangolds, swedes, and turnips), in most parts of the country arrangements may be made for the growing in winter of certain forage crops, and their possession during this period by any farmer can be turned to profitable use, whether for feeding dairy cattle, beef cattle, or sheep. Among such crops may be mentioned Buda kale, thousand-headed kale, emerald rye, and winter vetches, prairie-grass (*Bromus unioloides*) and crimson clover, Western Wolths rye-grass (for strong lands), oats and vetches, oats and field-peas, and dun oats. The last-named and emerald rye and winter vetches are perhaps the only crops that will grow during the winter experienced in the southern districts of the Dominion, whereas all grow elsewhere during this period. With the climatic and soil-fertility conditions possessed by New Zealand there should be no excuse for live-stock to any extent wanting food. Most districts grow roots well, and where hay cannot be made ensilage can be provided. Where, owing to unforeseen circumstances or other causes, all three cannot be produced, winter feed, embracing certain of the crops mentioned, may still be grown.