and that highly profitable areas are to be found in parts of the Auckland and Wellington Provinces in which the rainfall is well in excess of 30 in.

New Zealand experience has further shown conclusively that lucerne is not at all as exacting in its requirements as some seem to believe. Indeed, it has been grown successfully on practically all types of well-drained soils except peaty soils.

Our experience in this connection does not differ from that of other countries. As evidence of this we find Wm. Lawson in the *Journal of the Ministry of Agriculture* (England) saying, "Lucerne is suited to a wide range of soils; drainage is most important, and a well-drained soil and subsoil are absolutely necessary." Again, Bulletin 1283 of the United States Department of Agriculture, states, "The wide distribution of alfalfa [lucerne] in the world indicates a remarkable adaptability to climate and soil."

Valuable Features of Lucerne.

The excellence of lucerne as a forage crop arises from a combination of factors, including its high yield, high nutritive value, reliability during crucial seasons, low cost of production, and its capacity to improve soils.

High Yield.—Over a wide range of conditions in New Zealand lucerne suitably managed will provide three to five "cuts" annually for a series of years. Each cut will contain on the average from 5 to 7 tons of green forage per acre. Hence an acre of lucerne will yield annually in the vicinity of 25 tons of green forage. Frequently the annual yield is in excess of this. As 25 tons of green forage represents a yield of about 6½ to 7 tons of hay per acre the annual production of lucerne is high.

High Nutritive Value.—Investigational work in New Zealand agrees with similar work overseas in showing that the lucerne herbage is exceptionally nutritive, and that it is especially rich in those substances most apt to be lacking in the rations of stock, particularly of the highest-producing animals. It is rich in phosphates, lime, and protein, all of which are of practical moment in animal production and particularly in body-building. The nutritive components of lucerne are also highly digestible, especially when the crop is utilized before it has become woody. Hence, green lucerne is very valuable in dry seasons during late summer and autumn, when other succulent material is scarce, to provide the necessary fresh digestible material required by cows in milk. Lucerne hay, because of its high nutritive value, may also be suitably used to supplement feeds which are inferior or low in their content of substances in which lucerne is relatively rich. For example, lucerne hay and roots may be made to constitute a well-balanced ration, the lucerne supplying the deficiencies of the roots.

Reliability during Crucial Seasons.—One of the most valuable features of lucerne arises from the fact that established lucerne, because of its deeply penetrating root-system, is well fitted to withstand periods of drought. Hence, lucerne may safely be relied upon to make vigorous nutritive growth when practically all other crops fail. Lucerne is outstanding in respect to the quantity and quality of its yield, but if it were not so, and if it were only normal in these respects, its reliability during crucial seasons would be a weighty factor in its favour in comparison