

lands, and only when disease, droughts, or locusts come does the owner or overseer of the farm have much cause to worry.

With the extension of lucerne-growing in the United States and Canada, scientists in both these countries are giving great attention to the testing of many varieties to discover those best suited to the different soils, environment, and climatic conditions to be met with in the different States and provinces, where in some places temperatures have been recorded as high as 110° F. and over, and in others as low as 35° below zero and under.

In a number of the commercial varieties of lucerne many radically different types are met with. Some are found suitable and some are not. In Canada and some of the northern States, on account of the rigorous winters, where extreme freezing and thawing takes place, and where in some winters all except the hardiest plants are winter-killed, those which survive and exhibit traits of special hardiness are being used as a basis of material for further breeding-work, and are either self-fertilized or crossed by hand. Likewise for arid country, where the temperatures are high and the average annual rainfall is less than 10 in., varieties are sought for which show drought-resisting characteristics.

Considerable attention is also given to crossing the true lucerne (*Medicago sativa*) and yellow lucerne (*Medicago falcata*). The results have been that some very promising hybrids have been produced adapted to use both as hay and for grazing. This work can scarcely be over-estimated, and will tend to solve many problems in connection with this great forage plant now exercising the minds of agriculturists.

Recognizing the value of lucerne-production and the need of introducing it prominently in a practical way to the farming community as a crop that should be universally grown, the Government of the Province of Saskatchewan, in Canada, and agricultural societies adopted a novel yet successful and effective scheme to induce farmers to grow this valuable forage crop. The proposal to conduct a province-wide competition in growing lucerne was first made at the Agricultural Societies' Convention at Regina, the capital of Saskatchewan, in 1910. The plan was enthusiastically taken up, and financial assistance was forthcoming from various sources, and the Minister of Agriculture promised such additional funds as might be required to make the contest a success. A committee was named by the Minister of Agriculture to draft regulations and to govern the conduct of the competition. Regulations were in due course drawn up, and a great deal of publicity was given to it by the Press, resulting in preparations for the contest being commenced by scores of farmers all over the province. It is estimated that as a direct result of the publicity given the competition and the articles written upon the subject over five thousand farmers were inspired to commence growing the crop.

For the purpose of the competition the province was divided into four districts, and £315 in prizes were offered in each—£100 for the first prize, £80 for second, £60 for third, £40 for fourth, £20 for fifth, and £15 for sixth. A silver trophy valued at £50 was offered as a grand sweepstake prize for the best field in the province. The size of the fields entered for competition required to be at least 10 acres and to have passed through at least two winters at the time of being judged (June, 1914). Irrigated fields were excluded. Contestants were asked from time to time to furnish to the secretary details concerning the development of their respective fields, in the expectation that this information would be of great value to others unfamiliar with the crop. Boundaries for the districts were arranged. Two years were allowed for men interested to get familiar with the crop and plan for the competition. The fields were required to be sown not later than 1912, or two years prior to the time they were to be judged. On the 18th June, 1914, the awards were placed. The factors given most attention by the judges were—yield and quality of crop; hardiness; freedom from weeds and grass, and freedom from disease and insect-damage.

The good accomplished by this contest has been that five thousand farmers have commenced to grow lucerne in a large or small way, and every other farmer who read the agricultural papers has learned something about how to grow the crop as a direct result of the efforts of the competitors and the publicity given to the competition, and it has been demonstrated that paying crops of lucerne can be grown on all normal soils in every part of the province in seasons of normal rainfall. It is said that the value of the lucerne-growing competition to the Province of Saskatchewan will never be fully appreciated. It has shown that at least one legume crop, a soil-improver and high-quality forage crop, can be grown in a territory where 99 per cent. of the farmers either knew little of its possibilities or thought it unsuited to climatic and soil conditions.

The great problem of increasing production is engaging the attention of the Departments of Agriculture in these countries, and every avenue is studied and searched. New crops and better varieties of existing crops from other parts of the world are being introduced and tested. Plant breeding and selection, improved cultural methods and practices are all part of a mighty scheme being worked out towards increasing production. Every effort is being made to make rural life profitable, healthful, comfortable, and attractive. They are endeavouring to bring to the people of the rural districts some of the finer results of civilization.

Cereals.

In wheat and oat production for 1914 the United States takes premier position for quantity amongst the countries of the world. In barley it is beaten by Russia in Europe. In Canada, whilst the area of the three principal cereals—wheat, oats, and barley—is considerably less than in the United States, when the production is taken at per head of its population it easily beats the United States.