

PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE.

(Live-stock Branch.)

SEED-IMPROVEMENT.

By J. C. HEADEY, SOIL AND CROP INSTRUCTOR.



THE Canadian Seed-growers' Association is a voluntary organization, working in conjunction with the Dominion Seed Branch and as an extension of the experimental-farm system, and receiving the necessary funds for its operation from the Dominion Government. The object of the Association is to conserve for the public good the quality of seed produced by plant-improving and plant-breeding experts. It is easy to understand that the small quantities of this high-class seed distributed among the farmers would soon lose its identity, unless some efficient measure were adopted to retain it. It aims also to assist the farmer to take advantage of a few of the laws of plant-improvement and to give his work a recognition that will bring him financial advantage.

The farmer's work in seed-improvement is based on the fact that individual plants of the same variety sown in the same field may vary in type, yielding-power, adaptability, strength of straw, milling quality, and in various other ways. By continuous selection of those plants which conform to a standard the undesirable plants may be eliminated and the best retained. Actual field tests have demonstrated wonderful differences in yield and quality in favour of selected seed when the selection has been carefully and intelligently made. Furthermore, well-selected seed grown under favourable conditions such as should be given the farm seed-patch will produce seed superior in plumpness and vitality, and thus contribute to the yield of the succeeding crop.

THE METHODS.

First decide on the variety of the crop to be improved. It is important that the variety chosen shall be adapted to the district, and if at all possible the whole district should adopt the same variety. For purposes of marketing it is important that large quantities of seed conforming to the same standard should be available at the one point. At the outside, not more than two varieties of the same crop should be chosen. Here is a good place for the farmers to benefit by the practical application of the principles of co-operation.

Having decided on the variety to be improved, the next step before making any selection is to get clearly defined in one's mind the *qualities to be desired* in the plant, and the *type of plant* likely to produce these qualities.

The variety of crop and the type of plant having been decided, the best seed conforming to these requirements should be procured and sown on the best piece of ground available on the farm.

Just before the crop is harvested about 40 lb. of seed should be selected from plants which conform as nearly as possible to the desired standards. This process repeated for three years, the selected grain being sown each successive year, provides