While the acreage of corn is not extensive in Canada, the improved results from new hybrid corn varieties give considerable promise of extending the acreage of this crop. Both for grain and silage, hybrid varieties have given much better results. As the production of corn for grain has now become as completely mechanized as the production of wheat, the improved hybrid varieties offer an excellent opportunity of securing a new cash crop in many regions which can be handled with a minimum of labour. Several varieties of soybeans have been originated by the Forage Plants Division which enable this crop to be grown in regions where formerly the varieties were too late to mature. Improved varieties of grain and fodder millet have been created.

Investigational work on plant breeding has been undertaken for a number of years on the Dominion Experimental Farms. Hybrids have been created between wheat and certain species of grass. These have been back-crossed on wheat or grass in an effort to secure the qualities desired. Great difficulties were at first encountered with sterility but this has been gradually overcome. In Russia, it is said that the objective has been to develop a perennial wheat which might be sufficiently winter hardy to survive in the more southerly parts of that country. In Canada, while the plant breeding program has been directed towards the two objectives of grain and forage, it has been more successful in developing a large-seeded, drought resistant, fertile, perennial grass which may prove useful in some of the drier regions.

Plant breeding with tree fruits is subject to the great handicap that many years must elapse before it is possible to estimate whether or not any new variety is successful. The tree must bear fruit before its quality can be determined. Then, the hardiness of the tree itself cannot be learned until a severe winter has been experienced. The many years of experimental work on the Dominion Experimental Farms have proved particularly valuable in providing an opportunity to develop several successful varieties of apples. In eastern Ontario and Quebec, four of the six commercial varieties recommended for this region were originated at Ottawa. These varieties include Melba, Lobo, Atlas and Joyce. In addition, several new varieties show considerable promise. In the northern parts of Canada, tree fruit has been restricted by the severity of the winters. Considerable progress has been made through hybridization in the development of certain fruits suitable for home gardens.

Hardy root-stocks are a very important phase in the improvement of tree fruit applicable for Canadian conditions. The customary plan is to use roots from the seed of French crabs and to propagate the desired varieties onto these roots. However, these roots may or may not be sufficiently hardy and they are certain to be very variable on account of their seed origin. In an effort to develop improved root-stocks, the Horticultural Division has grown a large number of French crabs and other species and has kept the ground free of snow for several winters. This severe treatment resulted in the death of the great majority of the trees and the survival of only a very few. These survivors were carefully studied and used to grow new clonal root-stocks vegetatively rather than by seed. This has resulted in securing a supply of uniform and extremely hardy root-stocks (especially one known as Robusta No. 5) which are known to be vigorous and compatible with the varieties to be grafted or budded to them.

The tobacco industry in Canada has been almost completely transformed during the past thirty years. In the early days production was restricted in Ontario to burley, and in Quebec to pipe and cigar leaf tobacco. However, as consumer