The second phase in potato research came with the development of the science of genetics, beginning some fifty years ago. This basic research in plant breeding sought potato breeding stocks with resistance to fungous and virus diseases, desirable dates of maturity, good tuber type and skin color. The Minnesota Experiment Station was the first mid-west station to pioneer in potato breeding. The most extensive potato breeding work in the early years was done in the state of Maine. During the past thirty years practically all of the major potato producing states have done extensive work in producing new disease free varieties and strains of potatoes. New varieties of potatoes with varying degrees of resistance to the major diseases have now replaced most of the old standard varieties, the Pontiac has replaced the famous Red River Ohio, and only the Irish Cobbler of the old standards remains on the planting list. New varieties are now being grown for specific uses such as baking, potato chips, French fries, etc. In Europe, special varieties are for industrial uses such as starch and livestock feeding. Starch and potato flour factories in the Red River Valley today are using the new commercial varieties that are grown here, the flour, chip and to some extent, the French fry manufacturers are depending chiefly on the white potato varieties.

The writer started the potato experimental work at the Northwest Experiment Station at Crookston in 1912 and through the years conducted extensive experiments in disease control by spraying and seed treatment, soil preparation, fertilizer tests, and cultural practices, and collaborated with the central Minnesota Station in the potato breeding project. With the identification of new virus and fungus diseases and insect pests, the Experiment Stations have a continuing job for the plant breeders. The importance of the physical and chemical properties of the soils for potato production is being given a new look by the soil specialists.

In addition to the Experiment Stations of North Dakota and Minnesota, the Red River Valley is fortunate in having the Potato Research Center which has headquarters at East Grand Forks. This research center is unique in that it is an institution owned and directed by Red River Valley Potato Growers of North Dakota and Minnesota. A brief description of this research center is included in this history.

Potato Research at the Minnesota Experiment Station began in the Department of Horticulture more than fifty years ago under the direction of Professor A. R. Kohler. As the science of Genetics developed Dr. F. A. Krantz was assigned to the potato breeding work. A site along the North Shore, at Castle Danger was selected where conditions were favorable for the flowering and setting seed of many potato varieties. The potato crossing work was done in the fields until more recent years when the hybridizing was transferred to greenhouses. Upon the death of Dr. Krantz, his successor Dr. Florien T. Lauer and his associate, Dr. O. C. Turnquist, are continuing the work.