Neils Ebbesen Hansen—Pioneer Fruit Breeder

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Neils Ebbesen Hansen, one of our greatest plant explorers and fruit breeders, was born January 4th, 1866, on a farm near Ribe, Denmark. His parents brought him to New York at the age of seven. In 1876, the family moved to Des Moines, Iowa. At the age of seventeen he entered Iowa State College from which he graduated with a B.S. in horticulture, in 1887. This was the same year in which Congress passed the Hatch Act, providing funds for Experiment Stations in every state. After graduation, he worked for a time in a large grape nursery. He was induced to return to Iowa State by the noted horticulturist, Professor Budd. He was awarded his Master of Science degree in 1895. South Dakota was then looking for a man to build its Horticultural Department at Brookings, and selected Hansen for the job. Here at South Dakota State, he became one of the best known horticulturists in the world. For 55 years, until his death, October 5, 1950, his influence was felt not only in the Great Plains, but in every continent.

His recognized ability led to his selection in 1897, as the first plant explorer for the United States Department of Agriculture. On this assignment, he spent ten months in northern Europe and Asia, searching for plants suitable for the colder and more arid regions of the United States. Again, in 1906 and 1908, he returned to this area in the same capacity. As a result of these journeys, seeds and plants poured into the newly created Division of Seed and Plant Introduction. At that time, the expectation was that these new plants would be finished varieties, ready to use in production. Some did prove useful as such, and among them are crested wheat grass and brome grass. Most plants have been useful as breeding material. While plants were his principal objective, he did notice animals as well. Fat-tailed sheep were imported through his efforts.

His first exploration trips, financed by the United States Government, were so successful, that the state of South Dakota took a hand in the game by sending Hansen to Siberia and Manchuria in 1913, and again in 1924. Hardy pears and apricots, were two of the major items collected.

While Hansen saw the possibilities of foreign plant exploration, he was not blind to the potential value of native plants. Wild plums, sand cherries, currants, raspberries, gooseberries, grapes, apples, roses and strawberries were searched for, collected and used.

While Hansen was a noted plant explorer, his greatest contributions were in the field of fruit breeding. In 1909, he constructed at Brookings, the world's first fruit breeding greenhouse. Along with this went an underground storage for the tub grown more tender plants. By their use, he was able to make crosses between plants never before brought into bloom together. Thus he was able to mate the Japanese plum with the sandcherry of the Great Plains. This was a happy combination. The numerous varieties resulting from this mating and their descendents, made possible the growing of fruit by many a Plains resident who had never been able to do it before. Even today, cherries to the Great Plains home

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owner from Nebraska to Alberta, means sandcherry hybrids. The United States census, credits thousands of cherry trees to the Dakotas. These are not true cherries but monuments to N. E. Hansen. Plums also proved to be good subjects. Crosses between the Japanese plums and the American wild plum gave such varieties as Waneta, the first Dakota hardy two-inch plum. Tokata and Hanska, along with many others, thus combined the hardiness of the native American with the size and quality of the Asiatic species.

With grapes, he crossed the native *Vitis vulpina* with the less hardy large grapes of eastern United States. Many desirable seedlings resulted, and in 1924 thirty-three varieties were named. Due perhaps to this over-abundance of new varieties, none of them have become important as yet.

With apples, the native American *Malus iowensis* was crossed with European varieties. Anoka, an early dwarf variety which resulted, has been most planted. The Asiatic sand pear from Harbin, was crossed with high quality varieties to combine hardiness and quality. Varieties have been introduced but are probably most valuable as breeding material for other plant breeders who follow in his footsteps.

Not all Hansen's plant breeding involved inter-species crosses. Selections of the native sand cherry, which were continued through several generations, are now catalogued as Hansen Bush Cherries. Superior native plum selections of Hansen's have been named and propagated. Named seedlings of the hardy apricots collected by him in northern Manchuria, are under cultivation. Selections of the native golden currant *(Ribes odoratum)* were named, and three red raspberries he selected from native stock have been important nursery items in the colder areas. Dolgo Crab, valuable both for fruit and ornament, is a selection from the Siberian crab.

Hansen also made contributions to the ornamental list. Hopa red flowering crab, is his. He produced red leaved sand cherries and hardy roses.

Wherever he went, he saw things others did not. When he saw plants with valuable characteristics, he took steps to get and use them. He was a dynamic individual. He wanted anything good for South Dakota.

Dr. Hansen was a lone wolf. When he thought something needed to be done, he personally proceeded to do it. He did not disclose his objectives until they were accomplished. A visit to his fruit breeding greenhouse was not instructive as far as his plans were concerned. The trees there did not carry their true names. Workers who were helping to make the crosses did not know the identity of the male or female parents. They simply crossed plant X with plant AZ. The key to the meaning of these symbols was locked in his safe. Hansen was primarily a plant breeder, not a teacher, and yet one of his principal helpers, Charles Haralson, went from Brookings to become Superintendent of the Minnesota Breeding Farm, where he practiced the art of plant breeding with great success for many years.

While he did not instruct many students, he did inspire. The writer, when a young man, had a wish to work with and for Dr. Hansen. When that proved impossible, the ambition to emulate him remained. It still does.

Hansen was an originator and a doer even in his later years. I remember a visit one spring at Fargo, North Dakota, when he was well along in years. What was he doing? He had started down to Texas, where he collected pollen. With this he had moved north with the spring, collecting pollen and making crosses when the plants were ready. The end of his

route was Saskatchewan and Alberta. His next tour would be to collect the seed resulting from his crosses.

He was a trail blazer, a builder of foundations. Much of his work was not finished, but will provide generations to come with stepping stones to a final finished product. His aim was beautiful fruitful homes, in an area once thought to be a desert.

To a Great Plains resident, Dr. Hansen is a legendary figure. He was the first citizen of the United States to be awarded the Stevenson Memorial Gold Medal, by our Canadian friends. His is a permanent honored place, in the history of American horticulture.

Variety Notes from the South Shore of Lake Erie

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The Pennsylvania grape belt, a strip of land five miles in width bordering Lake Erie, is one of the nation's small but concentrated areas of fruit production. Here the Concord grape reigns supreme; but growers produce considerable quantities of other fruits in diversified operations.

A large part of the grapes, red tart cherries, red currants, prunes and tomatoes are delivered to processing plants, while most of the peaches, apples, sweet cherries, strawberries and raspberries find a home through roadside markets, "pick-your-own" sales, or trucking to nearby markets.

Fruit variety testing has been a continuing project at the Erie County Field Research Laboratory of the Pennsylvania Agricultural Experiment Station since an experimental farm was purchased near North East some ten years ago. This report presents observations on varietal trials over this period and comments on the adaptation of some of the newer sorts to the climate of this lake shore area.

Grape. As long as 95 percent of the grape tonnage is processed into unfermented juice, jelly and similar products, Concord should remain king of grape varieties. The few Fredonia and Niagara vines that remain are gradually being replaced with Concord. Tentative attempts are being made by several growers to bring grapes back to the fresh market, but no planting of the better dessert varieties for this purpose is under way.

Red tart cherry. Montmorency dominates the planting, and a small acreage of English Morello is being maintained.

Peach. The number of peach trees of all ages in Erie County has dropped about 50 percent in the last decade. The falling off in demand for locally grown fruit has been attributed to change in habits of housewives, who have largely given up home canning.

Rochester and Late Elberta, once leading varieties, are now found only in the older orchards. Golden Jubilee is still available in quantity, but is not being replanted. Halehaven, and Redhaven have replaced these older varieties in newly set orchards. Consumer preference is forcing growers to look for varieties which have an attractive red blush covering the entire surface of the peach.

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