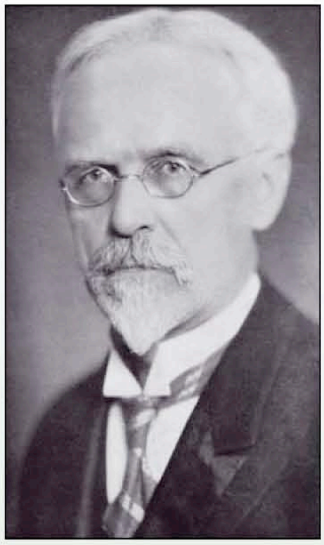
The Legacy of Plant Explorer N.E. Hansen

by Jean Pedersen



N.E. Hansen
Plant Explorer #1
1866-1950

Niels Ebbesen Hansen was the premiere American plant explorer, and his plant introductions are still widely used today. Hansen was not born to be so involved in horticulture. In fact, he aspired to be a newspaperman before a professor, and soon to be mentor, steered him into the world of plants.

N. E. Hansen was born in Denmark in 1866. His father, Andreas Hansen, a widower and painter, brought his family to America. They migrated to Des Moines, Iowa where Andreas painted murals at the State Capitol. N.E. Hansen, was fluent in German, Danish, and English when he entered high school in 1879 at age 13. At age 17 he entered the Iowa Agricultural College in Ames. One of his teachers was the renowned botanist, Charles E. Bessey. Hansen was going to be a newspaper editor, but with the encouragement of Professor J.L. Budd, Hansen graduated in 1887 with a Bachelor's of Science degree in Horticulture. At the suggestion of his mentor, Hansen made his first plant expedition to Eastern Europe and Western Asia in 1894 while he was Budd's assistant at Iowa State College. Hansen earned his master's degree from Iowa State College in 1895 with a thesis study of apples. He worked in commercial horticulture in Atlantic and Des Moines, IA until he moved to South Dakota and became head of the Horticulture Department of South Dakota State College (now known as SDSU). Hansen also befriended James Wilson, the Ag Experiment Station director at Iowa State College. In 1897, James Wilson, then Secretary of the Agriculture, appointed Hansen as the first official USDA plant explorer.

In the dry steppe region of Asia, Hansen noticed that camels and other livestock appeared hardy and well nourished, despite stifling dust clouds.

During Hansen's first expedition in 1897 to collect winter hardy and drought resistant alfalfa seed, he learned that the camels were eating a native grass called Gitniak. This grass, *Agropyron cristatum*, is now known as crested wheat grass. This drought tolerant forage grass was later used to reclaim millions of acres of abandoned and eroded range lands in the Western U.S. and Canada. In the publication, "*South Dakota: 50 Years of Progress*," Hansen wrote that crested wheat grass sown in the fall, right into patches of Russian thistles, entirely exterminated the thistles in less than two years.

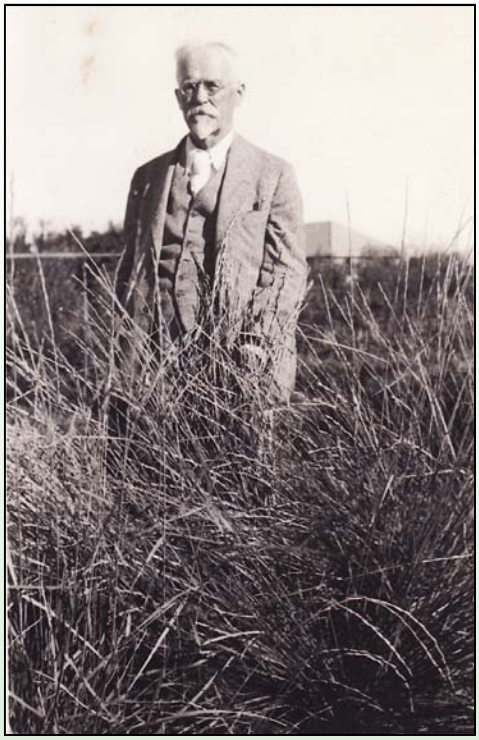
Hansen with alfalfa he imported from Russia.

N.E. Hansen, World Traveler

On the same 1897 trip, Hansen discovered blue-flowered alfalfa. He covered over 1,300 miles in his first trip using three interpreters – one to translate Chinese into Tartar, another for Tartar to Russian, and a third for Russian to German.

On his second trip to Russia in 1906, Hansen discovered three species of yellow-flowered alfalfa further north, beyond the range of blue-flowered alfalfa. He developed Cossack alfalfa from a cross of blue- and yellow-flowered alfalfa. By 1920, the USDA reported: "Alfalfa has become, in a generation, almost the basic crop of the West."

During his career, Hansen collected and introduced over 400 plant varieties including forage crops, fruits, vegetables, ornamental trees, shrubs, perennials and hardy roses. He released 32 hardy grape varieties in 1925. Chontay is commercially available and is still used by nurseries today. Hansen introduced soybean to the U.S. in 1898. In 1906 Hansen brought back 17 barrels of what he called "alcohol potatoes," which were to grow in dry ground. The potatoes were "full of alcohol" and were believed to be valuable for fattening stock. The potatoes were distributed to experiment stations. Hansen thought that farmers could make 500 gallons of alcohol per acre from them.



Hansen at Caucasus Mountains with *Agropyron elongatum*, a perennial wheat.

In 1908 Hansen became interested in brome grass from the Volga River region in Russia. He brought back 12 tons of brome grass seed. Simipalatinsk, Siberia 1913.

During his lifetime Hansen was able to see the impact that his forage crop introductions (alfalfa, brome grass, and crested wheat grass) made on the landscape and for farmers. He wanted to introduce crops that would benefit the farmers of the Northern Great Plains. As well as the forage crops, he introduced fruits and garden vegetables with farming homesteads in mind.

Hansen Introductions

22 Rose Varieties Still Available

	Source
Alika (gallica)	C,H
Amdo rose (rugosa)	S
Ekta Rose (Hybrid china)	S
Emmadora	R
Hansen Hedge	R
Kitana Rose (rugosa)	S
Koza Rose (rugosa)	S
Lilian Gibson	C,H
Minisa Rose (rugosa)	S
Mrs. Mina Lindell Rose	R
Okaga Rose	S
Pax Amanda	S,R
Pax Apollo Rose	R,H
Sioux Beauty Rose	S
Tegala Rose	S
Teton Beauty Rose	S
Tetonkaha Rose (rugosa)	S,R
Yanka Rose	S
Yatkan Rose	S,R
Yuhla Rose (Setigera)	S
Zani Rose	S
Zitkala	R,H

H = Hansen Garden at SDSU

C = Commercially Available

S = Sangerhausen, Germany

R = Rose Growers

Hansen Plant List

Apples and Crabapples	113
Plums, Cherries & Sandcherries	72
Pears	33
Apricots	13
Grapes	35
Raspberries	8
Gooseberries & Dewberry	13
Currants	10
Strawberries	2
Vegetables	13
Ornamental Trees & Shrubs	26
Hardy Roses	32
Perennials	8
Alfalfas	14
Sweet Clovers	6
Table Cereals	2
Other Agricultural Seeds	12
Total	**412**

15 Grape Varieties Still Available Through GRIN (USDA Germplasm Resources Information Network)

Atkan	Eona	Osbu	Sonona	Wecota
Azita	Mandan	Shakaka	Toscha	Wetonka
Chontay	Napka	Siposka	Wachepa	Vitis riparia HP-1, HP-2

Hansen Fruit Trees

Hansen introduced over 230 Varieties of fruit trees and shrubs.

Hansen's legacy lives on through his plant varieties that are still available today. He was an incredible diarist and provided detailed descriptions of his observations.

Collecting Pears in Harbin, China.

Hansen had the foresight to make predictions about the value of his introductions. The accuracy of his predictions can be evaluated by studying variety development and observing the current availability of his original introductions. It is easy to recognize his original introductions by their unique names.

68 Fruit Varieties Still Available

Apples and Crabapples

Alexis Crabapple	C	Olga Carbapple	G
Almata Apple	C,H	Oxbo Crabapple	G
Amsib Crab	G	Red and Yellow	G
Amur Crabapple	C,G	Red flesh	G
Anoka Apple	C,H	Red Silver	G
Dolgo Crabapple	C,G,H	Sasha	G
Dwarf Tree	G	SD Ben Crabapple	G
Erl Trio Crabapple	G	SD Bison Crabapple	G
Hans Trio	G	SD Bona Crabapple	G
Hansen's #1,#2,#3	G	SD Eda Crabapple	G
		SD Macata Crabapple	G
Ivan Trio Crabapple	G	SD Winter Crabapple	G
Jonsib Crab	G	Wakaga Crabapple	G
Keo Crabapple	G	Walkpala Crabapple	G
Kit Trio Crabapple	G	Waubay Crabapple	G
Kola Wild Crabapple	C,G,H	Wazlya	G
Lina Apple	G	Wecota	G
Linda Sweet Crabapple	G	Wiyuta	G
Manchurian Crabapple	C,H	Wotanda	G
Max Trio Crabapple	G	Yellow Sweet Apple	G
Mercer Wild Crabapple	G	Zapta Wild Crabapple	G
Nevis	G	Zelma	G

Plums, Cherries and Sandcherries

Assiniboin Plum	C	Pembina Plum	C,H
Cistena Purple-leaf Sandcherry Hybrid	C,H	Sapa Sand Cherry Hybrid	C
Hansen's Bush Pie Cherry	C,H	South Dakota No. 5 Sand cherry	C
Kaga Plum	C,H	South Dakota Plum No. 27	C,H
Kahinta	C,H	Tecumseh Plum	C,H
Oka Sandcherry Hybrid	C	Toka Plum	C,H
Opta Sandcherry	C	Waneta Plum	C,H

Pears

Harbin Pear	C,G,H	Sladky	G
Krylov	G	Sokak	G
Okblo	G	South Dakota F15	G
Pyrus Ussuriensis	C	South Dakota F31	G

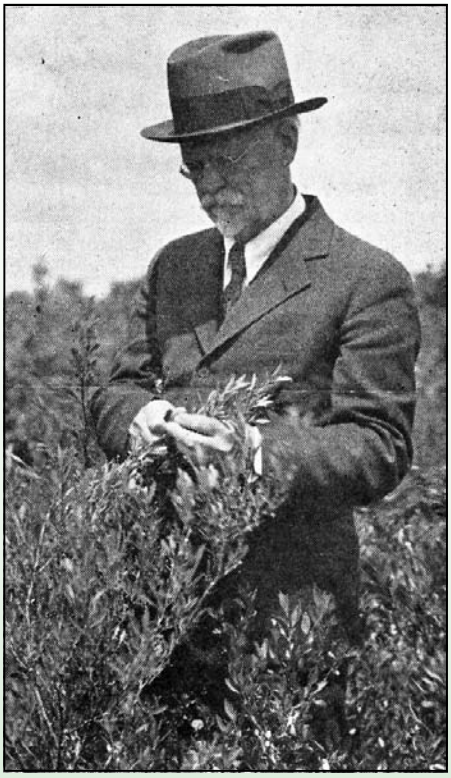
C = Commercially Available H = Hansen Garden, SDSU G = GRIN

Hansen Plant Varieties Still Available

Hansen crossed fruit species native to the Northern Great Plains with desirable fruit species that he brought back from other northern latitudes. In 1934 on his agricultural exploration tour to eastern Siberia, he learned that some of his hybrids were being grown in Russia.

Hansen's Bush Pie Cherry

Hansen named many of the varieties after the regions where they came from. He gave apricot varieties Chinese names. He gave pear varieties names of Russian or Cossack heroes and places in Siberia. He used Native American names for roses, plums, and grapes that he developed using native plants.



Selecting the Hansen Bush Cherry

Hansen's plant introductions were distributed to experiment stations across the country. The purple-leaf sandcherry was one of Hansen's notable introductions. The Hansen Bush Pie Cherry can be purchased from the *Gurney's catalog* today. The flowering Dolgo Crabapple is readily available at local garden stores.

Purple-leaf Sandcherry

Lilian Gibson Rose

Dolgo Crabapple

Sixty-eight different varieties of apples, crabapples, plums, cherries, and pears can be ordered from across the northern United States. The Lillian Gibson and Alika roses are commercially available and several others are available from private rose growers. Smooth bromegrass, crested wheat grass, and alfalfa are readily available at local seed stores.

Hansen's Legacy

Hansen adapted a tobacco transplanting machine to transplant alfalfa in an attempt to speed up the process of increasing his supply of seed.

More than 60 of Hansen's plant varieties can be obtained through the USDA Germplasm Resources Information Network (GRIN), a network of organizations and people dedicated to preserving the genetic diversity of crop plants. The plant germplasm (living tissue from which new plants can be grown) is stored at many sites across the U.S. His introductions can still be found in storage in Geneva, New York; Corvallis, Oregon; and Davis, California.

Hansen wrote more than 38 publications, most of them South Dakota Experiment Station bulletins. There is a "Hansen Garden" at McCrory Gardens at SDSU in Brookings, S.D. In 1995 the Hansen garden was dedicated by the children and grandchildren of his two children (Carl Hansen and Eva Hansen Gilkerson). Selections of his plant introductions can be found in this garden. Hansen Hall, a residence hall on the campus at SDSU, was named after this important horticulturist.

N.E. Hansen will be remembered for his adventurous nature and for the contribution his plant introductions have made to the Great Plains landscape.

About the Author

Jean Pedersen heard many stories about her great grandfather, N.E. Hansen, when she was growing up on a dairy farm near Brookings, South Dakota. Jean enjoyed being outside as her grandmother worked in the flower beds where the "Hansen Roses" grew and picking crabapples that were introduced by Hansen. After working 20 years for a pharmaceutical laboratory, she had the opportunity to go back to school to study horticulture and learn about her horticultural ancestry.

Historical photographs and documents were obtained from family files and publications that are available in the archives at SDSU.

Hansen, the diarist.