

Dr. N. E. Hansen

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THE DELLS AT DELL RAPIDS



SNOW GEESE AND OTHERS

O. A. Stevens

Sometimes during migration flocks of geese containing white birds, or flocks consisting of only white birds, will be seen. I recall one quiet spring afternoon when a group of four birds passed over flying northwest, and we watched them as they grew fainter and fainter in the distance. Finally they were lost to sight, but again and again a slight change of direction would bring back a distinct glimmer of their plumage. Larger flocks, of course, give a varied series of reflections as they pass, and a flock of hundreds or a gathering of thousands provides the fortunate observer with a real thrill.

These are the Snow Geese of which scientists distinguish two forms. The Lesser Snow Goose, measuring 23 to 28 inches in length, is the one seen in our region. The Greater Snow Goose reaches a length of 30 to 38 inches and is seen only on the Atlantic Coast, where it is apparently much less common than our birds of the interior. The plumage is not entirely white, the large wing feathers being black.

These geese nest only in the far north, the Lesser along the Arctic coast from Alaska to Baffin Land, the Greater only in northern Greenland so far as is definitely known. The nests, therefore, have been but little observed. The Lesser Snow Goose winters in numbers in California, Texas and Mexico, but rarely nest east of the Mississippi River.

Another kind of goose which has attracted special attention is the Blue Goose. At one time they were considered quite rare and perhaps only a peculiar phase of some other species. It was not until 1910 that they were found to winter in large numbers in the region of the mouth of the Mississippi River. As late as ten years ago the nesting territory was still a mystery. The polar expedition under MacMillan in 1921 received reports of their nesting ground from natives, but was unable to reach the locality. Finally in 1928, a Canadian expedition under J. Dewey Soper, found nests on the southwest coast of Baffin Land where most of the birds arrived on June 14 and 15. The Blue Goose is one of the smaller geese and has the head and neck mostly white; the wings gray or bluish or the upper part, the intermediate feathers being strongly edged with white.

The different kinds of geese often migrate in mixed flocks and the Canada, Snow and Blue make up the great bulk of the birds. Three other varieties of the Canada goose are recognized, the Lesser Canada, which is the smallest, and Hutchin's, which is intermediate; also the

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Cackling of the west coast. The first two are rare or uncommon in our region. The Brant is frequently mentioned, but usually by error or confusion of names. The American Brant is a bird of the east coast, the Black Brant one of the west coast. Dr. T. S. Roberts finds no authentic record of Brant for Minnesota. This name is often applied to the white-fronted goose, another form which occasionally appears in our territory.

The latest catalog recognizes 30 kinds of geese with 11 additional sub-species for the entire world. Most of the European forms are closely related to ours. A different group inhabits South America, and a few others are found in distant regions. The Gray-lag Goose of Europe is the one from which the domestic geese are supposed to have been derived. Together with the Bean Goose and Pink-footed Goose, it is more closely related to our white fronted species than to the Canada Goose. The Barnacle Goose, which was described by ancient writers to develop from barnacles in sea water, is most closely related to the Canada Goose and the Brant.

NORTH DAKOTA NEWS LETTER



A. F. Yeager,
Secretary,
Fargo, N. D.

According to the Michigan Experiment Station the most satisfactory rabbit repellent is made by melting together five parts of resin and one part of linseed oil. At that station they did not find the sulfonated oil to be satisfactory.

The Viking raspberry seems to be gaining in popularity. Some seem to prefer it to either Latham or Chief.

Nearly one-fifth more potatoes are being planted in the far south this winter than were planted a year ago.

In a recent catalog we note large-sized Mother Machree gladiolus bulbs for sale at 10 for one dollar. Only a very few years ago this variety sold for at \$1,000 per bulb. Picardy and Solveig are now creating much attention.

New Hampshire Experiment Station has found that the terminal blossom in the flower cluster on the apple produces larger fruits which are not so flat as those produced by the blooms on the side of the cluster.

Beaver strawberry, which is reported as one of the best in Wisconsin, is, according to the Illinois Experiment Station, unsatisfactory there because it is a poor plant maker and produces small berries.

We have a good example this winter in the greenhouse of the difference environment makes in a relative value to varieties. Two tomato varieties which were grown in the field last summer are both set and ripened at the same time, but No. 1 had larger fruit and was more productive than No. 2. This winter the same two were grown in the greenhouse where No. 1 was very much earlier than No. 2, but the fruit instead of being larger than No. 2, was only about half as large. The moral is that it is unsafe to depend upon the behavior of the plant in one locality as an indication of what it will do somewhere else. After all, the final test must be made on your own place. Even its behavior on the next door neighbor's farm may not be a sure sign.

One of the finest little publications we have seen for some time is "Fruit Growing in Manitoba, Saskatchewan, and Alberta", by George F. Chipman. It is published by the Country Guide, Ltd., of Winnipeg, Manitoba. The bulletin contains 32 pages and is sold at 20 cents. I believe

anyone interested in fruit growing in North Dakota should secure a copy of this.

A misprint in the January issue of our magazine credits Mr. Eastgate of Larimore, with selling \$1,000 worth of apples. This should have been \$100.

While we are making a correction the name of the Dominion horticulturist who died not long ago is Dr. W. T. Macoun. In some manner the initials were printed incorrectly.

In the Country Guide, Winnipeg, George F. Chipman has a very interesting article on breeding hardy apples, particularly stressing the work of Dr. Saunders, Ottawa and Dr. Hanson of South Dakota. Dolgo is mentioned as a seedling of the Siberian crab, probably a hybrid. Among second germination hybrids, he mentions particularly Trail as being among the hardiest at Winnipeg and in Saskatchewan. We agree with him when he says that Trail in particular is a very choice fruit so far as eating qualities are concerned. Apparently Mr. Chipman is very enthusiastic over some of the new third cross seedlings not yet named, which he says are nearly 100 times larger than the Siberian great grandmother and at least 1,000 times more palatable.

The New York Experiment Station states that its most promising new variety of red raspberry, Newburgh, seems to have the ability to escape Mosaic infection. If you want to try new varieties, Newburgh is worthy of special consideration.

The following is gleaned from the Flower Grower: Gladiolus bulbs which have their husks removed will come up and bloom earlier than those which have them left on.

Wisconsin Horticulture says that in renewing an old strawberry bed, it is best to plow up the plants only on one side of the row. This leaves the youngest plants ready to produce new runners.

According to the Virginia Agricultural Experiment Station, it is necessary to have a colony of bees for each four acres of orchard in order to provide proper pollination.

Dr. Rosen of the Arkansas Experiment Station states that he has found fire-blight bacteria in bees in the spring before they had left the hives. He thinks it possible the bees may carry the disease over the winter.

Shellac has given good results at the New York Experiment Station as a treatment for wounds made in pruning.



The Secretary of the Interior plans that future roads shall have rights-of-way at least 150 feet wide and that the planting of trees and shrubs in this area should be a part of the road building activities.

The Hammond Paint & Chemical Company, Beacon, New York, is manufacturing a product which they call "Dog-away" which consists of a tube of material which when hung in a tree or shrub releases a vapor which is said to repel dogs.

"Flower Shows, Their Organization, Management, Judging", is the title of a 96-page book by Victor H. Ries, Ohio State University. The price is 50 cents. It may be had from him or from W. A. Tucker, Columbus, Ohio.

If possible, when you are planting a strawberry bed, use plants which have not been dug more than 24 hours. The finest strawberry plants in the world, if dug, stored and shipped, are likely to grow very poorly, if at all.

North Dakota is now the second largest producer of certified seed potatoes in the United States. Maine still holds top place, but her varieties are mostly different from ours. Late potatoes such as Green Mountain and Rural make up a considerable part of the acreage there. Ours are limited to Cobblers, Ohios, Triumphs and a comparatively small amount of Vikings. The Viking potatoes resemble early Ohios in some respects. The samples we have seem to look a little smoother and a trifle flatter.

Considerable apple breeding work is being done at the Iowa Experiment Station. Many new varieties have been produced. Among those which we have tried here, one distributed as Ames No. 471 has lived for a number of years without winter injury and produced a good crop this season. The fruit is not attractive in appearance, but is of good size, a fairly good winter keeper and very good eating quality. In fact, among a number of the best varieties of apples sent up from Ames this year for sampling, this one was considered to be the best in flavor.

A new bulletin published by the Ontario Department of Agriculture is entitled "Grafting and Budding, Top Working and Repairing". It may be had from the Country Guide, Winnipeg, Canada, for 20 cents per copy.

E. A. Hutchins of Minnesota, reports that Harris Earliest and Harris Early Giant were earlier and more productive than any other varieties in a group of 13.

Plant breeders have now developed varieties of cabbage resistant to cabbage yellows. These varieties may be had in the early, medium and late kinds. Where one does not have yellows, however, it has been found that the non-resident varieties are likely to make the best yields and that means most of North Dakota.

The U. S. D. A. reports that the lesser Peach Tree Borer which is one of the important insects damaging the trunks of plum trees in North Dakota may be controlled by painting the infested area either in fall or spring with paradichlorobenzene dissolved in cotton seed oil at the rate of one pound of crystals to two quarts of oil. In cool weather it may be necessary to warm the oil to make it dissolve. Only the infected area should be treated.

A recent inquiry asks about Newman No. 3 raspberries. The variety has been tested at the North Dakota Experiment station, but is not considered superior to Latham.

If you intend to raise head lettuce in the garden, sow the seed just as early as possible, that means the middle of April, or as soon after that as the seed can be planted.

An inquiry recently asked whether a lot which had been flooded as a skating rink this winter would be good as a garden. With the drought conditions which have prevailed in recent years, we would expect this to be better than one not so treated, because of the stored moisture supply.

In a comparative trial between the Idaho No. 56 Great Northern Field Bean and the ordinary Great Northern at Fargo, the No. 56 produced 17 and 1/10 bushels per acre. The ordinary variety produced 6 and 2/10 bushels per acre. The No. 56 was matured August 15, and the ordinary variety September 7.

We have been fortunate this year to get hold of a small supply of early Grano Onion seed. This is a variety highly recommended in New Mexico as a sweet, large, early onion. We have been trying to get some of this seed for several years. So long as our supply lasts, if you are a grower of quantities of onions from seed and will write in so stating and inclosing 25 cents, we will send you a 1/2-ounce quantity for testing purposes. This is merely a scheme for getting a wide test quickly, hence, if you do not grow onions on a large scale commercially, please do not ask for seed because a comparison with a standard sort will be necessary for the test to be of value.



STARTING AN ORCHARD

John Robertson

This is the time of year that is best for planting trees in the North, so I will offer a few suggestions, having in mind that there is a shortage in rainfall over the greater portion of both North and South Dakota.

While early spring is the best for planting, certain preparations can be made beforehand to advantage, such as plowing the ground deeply in the summer or fall before, digging the holes for planting the fall before, fencing, etc. Preparing ground in fall allows for getting the benefit of winter freezing and thawing, that pulverizes the lumps and settles the ground so that things start and grow much better than they will do on spring plowing in average years. Then the ground holds moisture better, and is easier worked during the summer following. This applies mainly to the heavier soils. Where the soil is rather sandy it does not matter so much what time of year it is plowed; nor if worked quite as deeply as hardpan soils should be.

Whether planting just a few fruit trees or many; and whether you may have plenty of moisture or be very limited, it is well to have in mind giving enough space between plants. In most neighborhoods we can easily find one or more object lessons of the mistake of close planting of fruit trees; also that of high pruning, with resulting sunscald of trunks and dying parts in the tops. Apple trees should have near 30 feet between each way, on an average. Some few sorts, including a number of the crabs, do not need quite so much space; while certain varieties of the stronger growing sorts require greater space to do their best in later years. Plums should have from 15 to 20 feet of space each way, with smaller fruits spaced somewhat in proportion to natural size to which each grows. In case there is a shortage in moisture this wide spacing allows for the roots to spread out getting that between; while with locations having plenty of moisture, something may be planted between trees in way of small fruits or garden crops, till such a time as the tops require all space. Fruit trees should be headed very low; and by having plenty of space they will grow wide rather than very tall, especially out in the open where there is much wind. **By heading low the tree comes into bearing sooner, has its trunk protected, is most easily pruned, sprayed, and picked; and lives longer, as well as bearing much more each year than a tree that is pruned to a high top.**

In planting many trees it is usually an ad-

vantage to have a deadfurrow where each row of trees is to be. This helps materially in digging holes, and drains water towards the tree row, helping with extra moisture during first years at least, when most needed in making a start. If the ground is very hard the holes should be dug deeper and wider than if sandy or loose. It is often an advantage to throw the subsoil to one side, and filling in again with fine surface soil to about the right depth for setting the tree, then continue filling in with same surface soil. In setting a tree it should be leaned noticeably towards the 2 o'clock sun, which is usually the hottest part of the day. If there are any branches started, the side having most should be on the south side too. The leaning of trees makes it so the sun does not shine on it so squarely, and the branches help in shading, so there is much less chance of sunscald and diseased trunks. If you will take note by looking over old plantings, you will find that nearly all instances of bark dying and peeling off is to be found on the south side of trees that are pruned high and are leaning towards the north or northeast. In cases of high shanked trees that cannot be helped, especially those leaning away from the sun, one of the best things to do is to wrap the trunks loosely with burlap, tying top to a lower limb with soft string.

Trees should be planted an inch or two deeper than the collar mark shows they were in the nursery. Do not plant in heavy soil when it is very wet. The soil should be very firmly packed among and over the roots by frequent tramping, and the finished surface left loose and rather sloping towards the tree. Cultivation in after years should be such as to keep the ground level, without ridging of rows.

Where small yearling trees have been planted it is not always advisable to cut the tops back; but with larger sizes it is quite a help in starting, with better growth during current year, if from one-half to two-thirds of the last year's growth is cut off. In general, no other pruning is required during the first and second years after planting; but shortly before the third year's growth starts there should be a thinning out of surplus branches, as well as taking off some few that may have started too close to the ground. Different varieties should have a difference in the treatment of pruning. Upright growing sorts can well have heads forming at the ground level; while those that are of a very spreading nature should be pruned a bit higher to begin with;



then maybe a little higher at times during later years, just so limbs do not lay on the ground very much when loaded with fruit.

Many trees, plants, and seeds are killed each spring on account of much strong manure having been applied in spring before plowing, or scattered over the surface and worked around the roots when planting. It is all right to have the soil rich, and the very best of fertilizer is common barnyard manure; but, unless very old and well rotted, it should never come in direct contact with roots or seeds when planting. The planting should be made in clean soil, and the manure worked in between rows or plants, also used as a mulch in some ways. However, this does not mean that manure is a good material for banking around trees in winter; or covering for such as rose bushes and the canes of raspberries over winter. A two-inch covering of manure as a mulch around and between newly planted trees and small fruits is a great help in retaining moisture and keeping the ground cool during the heat of summer, but keep back a foot or so from shank of the tree.

Where there is any slope to the ground that allows water to run off during time of heavy rainfall, it is a great help towards giving things a fair show, if ditches, dams, or terraces are made of such shape and size as to hold all the water coming during heavy rainfalls. It is surprising how much help may be had through this practice. The water that has been washing away soil, is made to stay where it will do some good by soaking into the subsoil underneath roots, instead of running quickly over the surface and only wetting down an inch or two. The making of dams and ditches does not need be confined to any certain time of year, but can be worked at odd times when ground is not frozen; and to most any extent that the operator feels he can afford. Extra water means more vegetation, whether it may be in a pothole near a tree, or in a larger dam on some prairie ground or pasture.

EXTRACTS FROM THE DIARY OF A TRAVELING MAN

W. A. Simmons

Give fools their gold and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field or trains a flower
Or plants a tree is more than all.

—Whittier.

Experiments conducted over a period of five years at the Fort Hays Experiment Station in Kansas have shown that sorghum planted in

rows running east and west greatly outyields grain planted in rows running north and south. This is attributed to the fact that the east and west rows break up the hot winds of summer and reduce the excessive drying of pollen at flowering time. The grain in yield per acre amounted to 7 bushels of Kafir, 8.3 bushels of feterita, 6.1 bushels of milo, and 2.8 bushels of corn. Such rows also held snow better and reduced the blowing of soil in winter time.

Jan. 29: In the February issue of *Successful Farming*, L. S. Goode, in an article about new small fruits, has this to say about Dr. Hansen's grapes: "Dr. Hansen has diligently crossed some of the cultivated grapes with the native wild strains or hybrids of the Dakotas, and he now has a number of varieties that are really hardy. Emana is a cross between Beta and Agawam and is a rich purple-black, large as Concord and with flavor between the wild flavor of Beta and the rich, sweet, aromatic flavor of Agawam. Arikara is another, a white grope of good quality which has that sought for quality of hardness."

We do not know where Mr. Goode got his information, but we hope it is authoritative, as we have hoped for a selection of the desirable varieties of the Hansen grape introductions for several years. That there were desirable varieties there we have long known, but the puzzle of finding them in the 37 sorts introduced has discouraged most of us.

Feb. 2: Writing in *Wisconsin Horticulture* Mr. Louis Garday of Waukesha has this to say about some of Dr. Hansen's plums: "The Waneta is producing another full crop. This plum has never failed to bear well during the last four years." This is truly the old reliable of the Jap-Americana crosses.

Of the Sapa he writes, "This tree has never borne more than a few dozen plums at a time, although it is quite large. Last spring I put an armful of wild plum branches just in bloom, next to the tree in a bucket full of water. And behold, I have a good crop of fruit now. I grafted several varieties on the top of this tree with the idea of making it useful rather than cutting it down. Many of these scions have grown four feet this season."

He has learned from experience that Sapa requires cross pollination, but as it blooms later than most varieties the most practical way of ensuring this is to set other kinds of the plum-cherry hybrids near them. The bearing branches of all of the plum-cherry hybrids are short lived and must be constantly renewed from new branches growing from near the base. When the older branches go out, with them would go all



branches of other sorts topworked on them. On account of its high quality, we can well afford to do the simple thing necessary to obtain a full crop from this fine plum-cherry.

Feb. 15: In a recent editorial, Editor Bregger of the American Fruit Grower, gives us much food for thought regarding the spacing of apple trees, as follows: "For twenty or thirty years there has been in the apple industry a general decline in tree population without a corresponding reduction in actual production. Individual orchards have demonstrated this same principle. It has been definitely demonstrated many times that whenever trees begin to crowd and compete with each other for soil nutrients, water and sunshine, their yield becomes reduced, not only on an individual but on an acre basis.

"What is even more significant, however, is the fact that following the removal of as many as half the trees to relieve this crowded condition, the yield not only returns to the previous high point but actually increases above it.

"With this equal or greater acre production, we have almost a fifty per cent cut in certain production costs, such as pruning, fertilization, scraping, banding, and spraying, not to mention a smaller though significant reduction in costs of thinning and picking."

Probably most of us would get more fruit if half of our trees were to die, giving the survivors a real chance to produce.

Feb. 16: We note that the Minnesota Society has named their Minnesota No. 1 pear the Parker, after Edward C. Parker, a Minnesota man and graduate of their University, who in 1908 obtained and transmitted the seed from which this pear was produced. The seed was obtained, according to Professor Alderman, in the Shenking province of Manchuria in latitude 42. This is the pear that John Robertson thinks so highly of and that does so well in his orchard. Mr. Alderman thinks it may have come from a natural cross of the Bartlett and the native pears, as Bartletts introduced by American missionaries were grown in that vicinity.

Feb. 17: We feel justified in lifting bodily from the February issue of the **Minnesota Horticulturalist** the following paragraph from the pen of Dr. Ernest Angelo, regarding pruning: "Plums bear considerable fruit on the one-year-old wood in addition to bearing on spurs on older wood. For this reason severe pruning of the plum will not do as much harm as would be done in the case of the apple. It should be remembered at all times that pruning is a dwarfing process. A tree left unpruned will come into bearing earlier

and be a larger tree at the end of a given time than will one that has been pruned regularly, provided all other conditions have been equal. Then why prune our trees? Pruning enables us to train the tree to such a form as will be an advantage in caring for the fruit. It should give the grower an opportunity to distribute load of fruit to the benefit of the tree. It allows sunlight to reach the fruit and thus produce better color. Insect and disease control is made easier through the ability of the grower to do a better job of spraying.

"The cherry-plum hybrids have a fruiting habit similar to the plums and should be pruned in about the same manner. As some of the varieties of this fruit have a bush-like habit of growth, it may be advisable to modify the type of pruning and select the main branches so as to develop a bush form. Practically no experimental work has been done in studying the pruning of the cherry-plum and hybrids, but with some of the varieties at least there is an indication that vigorous annual growth will produce stronger fruit buds. This vigorous growth may result from heavy pruning.

"If it is necessary to make cuts over two inches in diameter it may be advisable to paint the wound with white lead and linseed oil. Smaller wounds will heal readily without treatment provided the cut has been carefully made."

Feb. 19: In Flandreau a cottonwood tree 58 years old has finally been cut down. This tree was transplanted from the Sioux River Valley as a small seedling and had become something of a landmark and had attained a great height and a diameter of 50 inches near the ground. However, lightning injuries and old age having weakened it, it was deemed unsafe to allow it to remain standing.

In this connection some interesting results of experiments regarding the life, old age, and death of plants are coming from the University of Arizona, located at Tucson. Dr. Bakhuysen has detected an electrical condition characteristic of protoplasm, the basic living substance which is found in every form of life, including man. He finds the living protoplasm is divided into portions in a cell. There is, he says, a difference in electrical charge on the particles which make up these two portions, slight at life's beginning, greater during later years, but finally disappearing entirely in extreme old age.

As the electrical tension drops, the plant loses its power to retain water until when the water retention is very low the plant dies. Thus the life of plants is definitely limited, even as it is for you and me.



Good general description
HYBRID LILACS

E. C. Hilborn, Valley City, N. D.

The Flowers Our Grandmothers Never Knew

Did our grandmothers have lilacs? Yes, indeed. Many of the old lilac bushes planted by our grandfather's hand still stand at the end of the porch in the old home in the Eastern states. Its beauty and fragrance was enjoyed a century ago. Lilacs at that time and for many years thereafter meant the old common purple lilacs, *Syringa Vulgaris*. But grandmother never knew the modern hybrid lilacs that we enjoy today. So different, so improved have they become in the hands of the molding plant breeders that many of them would be hardly recognized as an offspring of our old common lilac.

Today in the better gardens can be found a broad list of lilacs with all sorts of variation, variations in season, early bloom, middle season, and summer lilacs; variations in the small flower itself, single flowers and double flowers; variations in size from some of the more delicate, refined hybrids to great massive blooms measuring ten inches long and six inches across. But the greatest variation of all and most valuable is the marvelous range of colors running the whole color scheme from white through light pinks, brilliant light reds, deep reds, lavender, sky blue and royal purple. Grandmother's garden knew none of these variations.

Lilacs are found throughout Eurasia, the common lilacs native throughout northern Europe. But across this broad double continent a great variation occurs according to the climatic conditions. In the midst of central Europe are found types known as Hungarian lilacs. These are very large, broad leaves with flowers blooming late which have given the same summer lilacs. Two outstanding varieties, *Villosa*, a creamy pink type, a profuse blomer and the *Josekea*, a finer flower but deep blue, are the two outstanding examples. The latter is such a shy bloomer that it has not found much favor. But *Villosa* is one of our most valuable sorts, always missing the frosts and ready to bloom heavily after other lilacs are gone.

In Persia, the land of extreme temperatures of cold winds from the north and terrific hot waves from the south, combined with periods of drought, has given us the Persian lilac. This is one of our most valuable sorts. It is aristocratic in bearing, refined, finer branched, small leaves and covered in the spring with a heavy mass of beautiful light reddish bloom. One of its hybrids, *Rothomagensis*, is perhaps our most valuable lilac. It loves a sunny location, thrives on

a dry hill or the south and west sides of our foundation.

Eastern Asia has given us another group. Most of these types run into very large and heavy forms known as tree lilacs, both the Chinese and Japanese forms growing into the largest plants of the lilac family.

But by far the most interesting group of lilacs are those referred to as French Hybrids. This term is not exactly correct, but its name has been secured because of the French breeders who led the field in this interesting cross breeding work. The French Hybrid lilacs represent the many wonderful crosses that have been produced with the common lilac as a base.

It is well to keep in mind that in all cases of the better named lilacs, plant breeders have eliminated the curse of the common lilac, viz., suckering. A common lilac wasts its strength producing a mass of suckers which are a constant annoyance and prevents a profuse flowering of the plant. In the crossed types this tendency does not appear. So the Hybrid lilacs are as free from suckering as the average shrub.

Another drawback of the common lilacs was its slowness to bloom. Plant out a sucker and nurse it along and you are fortunate if it blooms within seven years. But the French Hybrids are so prolific that they commonly bloom in the nursery row before a three-year-old plant is passed to the customer. They also bloom almost from the top down to the very ground. These qualities add greatly to their value and usefulness.

Over two hundred named varieties can be found in Highland Park, New York, or the Arnold Arboretum and nearly that many in Minneapolis city parks. In our nursery at Valley City we have forty-seven named varieties of lilacs and we have hopes that they will all be in bloom this late spring.

What are the best lilacs for the average planter to grow? Questionnaires have been sent out among the experts and while there is some difference of opinion the following list will give one a broad range of color of the choicest varieties. We offer them with a brief description. S equals single; D equals double.

Whites:

Marie LeGraye: S; Large panicles of white bloom borne in great profusion, refined, excellent for cutting.

Mme Lemoine: D; Larger plant than Marie LeGraye, large bunches of beautiful double flowers.

Mme. Casimir Perier: D; This is a superb



variety, easy to grow, suckers enough to furnish new plants.

Pinks:

Belle DeNancy: D; Double flowers in great panicles, satiny rose effect, a well known variety.

Leon Gambetta: D; Later than above, large cluster of beautiful pink flowers, undoubtedly the queen of all the pinks.

Reds:

Wm. Robinson: S; A rich deep pink, nearly red. The flower nearly always grows four spikes in a fine mass effect. There is a quality and richness about this that defies description. There should be a place in every garden for this beauty.

Charles X: S; One of the best known and oldest of the improved hybrids. A real red, strong thrifty grower, bears large trusses of reddish purple.

Congo: S; A very dark wine red. Can be recognized at great distance, striking, large and showy.

Blues:

Pres. Grevy: D; This is a beautiful light blue flower with a double tone. Tip of bud pinkish and the inside of the cup when open is almost white, yet the mass effect is blue, a delightful lilac.

Alphonse Laval: D; Light blue mingled with a rich pink, in a tantalizing combination, light blue shading to violet. Blooms very young and very freely in large masses, one of the very finest of all the Hybrids. Don't miss Alphonse Laval.

Ludwig Spaeth: S; Dark purple shading to dark violet, large, long dense trusses. Ludwig Spaeth is considered by many as the finest of Hybrid lilacs. Cut flowers bring high prices on the market. It is easy to grow, a generous bloomer and covers itself with great masses of purple flowers. A large striking bush.

The above list would bring great joy to every gardener. Lilacs are especially at home in the Dakotas and this interesting family should be made known to the home owners throughout our land. This group is free from disease, requires but small care and brings a range of color and fragrance to the garden found in no other group. Dakota has room for more lilac fans.

THE RELATION BETWEEN GARDEN CLUBS AND NURSERYMEN

L. D. Martelle, Beresford, S. D.

"The relation between garden clubs and nurserymen" is, through the very nature of each, a naturally cordial one. The nurseryman, on the one hand, depends upon the public—represented in concentrated form by the garden club

for his business, while they, in turn, depend upon him (represented here today also in concentrated form for their main source of supply of shrubs, flowers, trees, etc. I will endeavor to show in a few words that this relationship works to the mutual benefit of both).

The average nurseryman, especially the Dakota variety holds, himself ready and willing at all times to co-operate with and help garden clubs in any way within his power. He does this, not from a mercenary standpoint, but from a purely unselfish one; the same force which drew him into the nursery business in the first place prompts him to respond to any and all calls made upon him to assist in spreading the "Gospel of growing things." He is, first of all, a horticulturalist. Your daily duties may be that of a merchant, lawyer, or housewife, but you too are a horticulturalist. But your nurseryman through his daily contact is especially fitted to help you in many ways. Some of these are as follows:

- I. By judging your flower shows. His many years of experience makes him well qualified for the average show and most nurserymen have their specialties or "hobbies."
- II. He helps you to make your Flower Shows a success by setting up group displays of flowers, and often times by donating prizes of nursery stock.
- III. He is always available for talks before your Club on Horticultural subjects.
- IV. He supports, through his advertisements, the many magazines and other periodicals of gardening which you enjoy so much.
- V. His nursery "latchstring" is always out to the public at large, and garden clubs in particular, where you see at first hand many of the new things in different stages of development.
- VI. He will answer your many natural questions on horticulture either from his own accumulated knowledge or from his library.
- VII. He stands the expense of trying out first in his locality all new introductions in the horticultural field. Many of these, by the way, he must discard. If the general public were to do this individually, the expense would be enormous.
- VIII. He fosters and fights for legislation such as embargos on diseased nursery stock, conservation of wild timber, wild flowers, bird life, etc.

These are some of the ways in which your South Dakota Nurseryman co-operates with you; if you can suggest others he will be glad, I know, to oblige.

Visit your nurseryman often in order that everyone may enjoy life to a greater extent.



A READING LIST FOR THE STUDY OF FRUITS

Prepared by A. E. Yaeger

The following publications may be had free from the Publications Department at the North Dakota Agricultural College, Fargo, North Dakota.

Experiment Station

- 188. Fruit Culture for North Dakota.—Revised, 1930.
- 267. Gooseberries—1933.

The following publications may be had free from the United States Department of Agriculture or from your senator or representative, Washington, D. C.

Farmer's Bulletins

- 157. Propagation of Plants.
- 181. Pruning.
- 471. Grape Propagation.
- 660. Weed Control.
- 727. Fruit in the Great Plains.
- 776. Cherries East of Rocky Mountains.
- 887. Raspberry Culture.
- 901. Everbearing Strawberries.
- 917. Growing Peaches.
- 1001. Fruit Growing for Home Use.
- 1027. Strawberry Culture, West.
- 1028. Strawberry Culture, East.
- 1034. Strawberry Varieties.
- 1160. Diseases of Apples in Storage.
- 1204. Northwestern Apple-packing Houses.
- 1284. Apple-orchard Renovation.
- 1369. Bridge Grafting.
- 1398. Currants and Gooseberries.
- 1399. Blackberry Growing.
- 1400. Cranberry Fields.
- 1403. Dewberry Growing.
- 1457. Packing Apples in Boxes.
- 1458. Strawberry Diseases.
- 1488. Diseases of Raspberries and Blackberries.
- 1501. Nut-tree Propagation.
- 1518. Orchard Irrigation.
- 1522. Home Fruit Gardens on Great Plains.
- 1560. Marketing Strawberries.
- 1567. Propagation of Trees and Shrubs.
- 1579. Containers used in Shipping Fruits and Vegetables.
- 1588. Prevention of Frost Damage.
- 1591. Transplanting Trees and Shrubs.
- 1666. Controlling Orchard Insect Pests.
- 1676. Lubricating Oil Sprays for Fruit Trees.

Leaflets

- 68. Roadside Markets.
Magazine. (Monthly). Cleveland, Ohio. 50c
per year. American Fruit Grower.

The following publication on the study of

trees may be had free from the Publications Department at the North Dakota Agricultural College, Fargo, North Dakota.

Extension Circular

- 67. Trees, Shrubs and Plants.—Revised, 1930.
- The following publications may be had free from the United States Department of Agriculture, Washington, D. C., or from your senator or representative.

Farmer's Bulletins

- 744. Preservative Treatment of Timber.
- 1117. Forestry and Farm Income.
- 1123. Growing Hardwood Seedlings.
- 1177. Improvement of Farm Woods.
- 1210. Measuring and marketing Timber.
- 1405. Windbreak as a Farm Asset.
- 1453. Growing Coniferous Trees.
- 1591. Transplanting Trees and Shrubs.
- 1603. Shelter Belts on the Northern Great Plains.
- 29. The Farm Woods.—A Savings Bank Paying Interest.
- 30. Cutting the Farm Woods.

Leaflets

- 1680. Farmers in Northern States Grow Timber as Money Crop.

The following publications on the study of ornamentals may be had free from the Publications Department at the North Dakota Agricultural College, Fargo, North Dakota.

Experimental Station Bulletins

- 170. Perennial Flowers for North Dakota.—Revised, 1932.
- 224. Plants in the Home.—Revised, 1932.
- 269. Wild Flowers of North Dakota.—1933.

The following publications may be had free from the United States Department of Agriculture, Washington, D. C., or from your senator or representative.

Farmer's Bulletins

- 750. Roses for the Home.
- 1087. Beautifying the Farmstead.
- 1171. Annual Flowering Plants.
- 1306. Enemies of Chrysanthemums.
- 1311. Chrysanthemums for the Home.
- 1370. Dahlias for the Home.
- 1381. Herbaceous Perennials.
- 1495. Enemies of Flower Gardens.
- 1547. Rose Diseases.
- 1677. Lawns.

Mr. J. A. Munro wishes to call the beekeeper's attention to a book. "A Living From the Land," is the title of this useful book which recently came to my desk. The book discusses in a most



interesting manner the various branches of farming, including poultry raising, gardening, small fruits, beekeeping and other subjects of interest to those who make their living on the land. Possibly on account of being the secretary of a state beekeepers' association, the following paragraph from this book seems to me to be good advice: "The experience of successful beekeepers will be found helpful as a guide in taking the successive and orderly steps necessary to secure maximum honey crops. In many states, there are associations of beekeepers formed for mutual advantage and the promotion of the industry. The novice can hardly expect to learn unless he affiliates himself with such groups and attends their meetings. Subscriptions to a good bee journal is also desirable."

The book sells for \$1.50 and is published by the McGraw-Hill Book Co., 330 West 42nd St., New York City, N. Y.

RECIPES WHICH USE HONEY

(Developed by Prof. Constance Leebby and her class in home economics, North Dakota Agricultural College)

All Honey Nectar Jelly

3 cups water, juice of 1 lemon, 1 package of powdered commercial pectin, 3 cups of honey and $4\frac{1}{2}$ tsp. of fruit nectar. Nectar may be of any flavor you like. However, a flavor which is also red in color makes the most attractive jelly. Put the water and lemon juice into a large sauce pan, add the powdered pectin, and stir well. Bring to a hard or full rolling boil. Have the honey measured out so you can add it all at once. Continue stirring and when the boiling point is again reached, add nectar, boil for eighteen to twenty minutes or until heavy drops of jelly form on the spoon. Skim and pour into hot glasses.

All Honey Apricot Jam

Over four cups of dried fruit, pour 3 cups of cold water. Cover and let stand over night. The next day place the soaked material in its water on the fire. Keep closely covered and simmer until the fruit is tender. Cool. Then you may cut the apricots into fine shreds with scissors, or rub the whole mixture through a coarse sieve. The shredded product gives a very nice looking jam, while the pulped fruit makes a butter mixture. After whichever way you have prepared the apricots, put them back into the kettle with the juice, add 2 cups water and 1 package of powdered pectin and heat to the boiling point, stirring constantly, and add 4 cups honey. Have it measured out so that it may be poured in at once. Let come to the boiling point again. Boil

rapidly for 8-10 minutes. Stir frequently. Pour at once into hot jelly glasses.

Banana Honey Jam

Put three medium sized bananas through a coarse sieve. Measure the pulp. There should be 1 cup. Pour into a good sized sauce pan, add 1 cup honey, 1 tablespoon lemon juice, and 4 very level tablespoons of powdered pectin. Mix these ingredients and bring to the boiling point and boil hard for four minutes. Pour into hot jam jars or glasses. This product is a light amber color. Though this recipe is small, a larger portion may be made by measuring out twice the amount of ingredients.

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JEWELS OF THE PLAINS

Claude A. Barr, Smithwick, S. D.

To anyone who has observed through many years the life processes of the plants and flowers of the Great Plains, noted their responses and reactions to the vagaries of a difficult climate, the rapid changes winter and summer and the durations of trying conditions, nothing is more evident than that they have attained a remarkable adaptation and hardiness.

The handsome Crested Lavender Pentstemon, the dainty, pink tinted Easter Daisy, the white and silver Tufted Milkvetch, hugging the ground through the winter storms, very low in their evergreen, dormant habits, but perched as often as not on the gravelly brow of a slope exposed to the sweeping blast of the storm from the north, and again to the incessant hammering of ice particles in drifting winds from the west, are but examples of many.

It has been suggested that the plants of the plains are survivors rather than choosers of the extreme conditions of their habitat. Be that as it may, they have had untold ages in which to migrate to other climes, and the fact remains that very many species of this environment are to be found in no other part of the world. Often they are low of form, with the relatively large blossoms and brilliant colors commonly associated with flora of the high mountains, known as alpinas, and particularly suited to rock garden adornment.

The term Great Plains—Northern Great Plains, as they concern us—refers in brief to the western half of Nebraska, South Dakota and North Dakota, the portions of Wyoming and Montana lying east of the Rocky Mountains, and considerable portions of Saskatchewan and Alberta similar in character. This is the short-grass country, with altitudes from 1800 or 2000 feet up to 5000 and more.



One's first impression is an endless series of rolling ridges, grass below and sky above. Here and there are to be noted more conspicuous features, the frequent buttes, long reaches of badlands, low mountains, gravelly remains of ancient stream beds, many sandhill areas; and one comes to learn that upon these more rugged ranges the great numbers of the flowers find agreeable footing.

Some of the finest of these were described in North and South Dakota Horticulture, March, 1933, issue, and I now bring to you word of others, some of them quite rare and all of them attractive, but only to whet your appetites, for most of them cannot be had from any nursery or collector that I know of and there is no practical way to obtain them at present. But we may rest assured that sooner or later as the beauty and dependable hardiness of these natives comes to be known they will be made available, and as a famous Colorado collector has said of the Pentstemons, the way to make them available is to call for them whenever they are offered.

The coming June I expect to enjoy for the first time the blossoming of a new Pentstemon, found too late for flowers last summer in the heights of Pine Ridge. Several small plants and a quantity of seeds were brought home. It resembles *P. glaber* in leaf, but is a low plant with spreading stems that have an upward reach of eight inches. I hope it will be the fine dark blue *P. alpinus*, but if it is not it can be little less valuable for I have yet to see an indifferent flower among the plains representatives of this family.

Pentstemons have proven remarkably easy in my garden, and I have eight kinds. Several have been described hitherto. One which has not is the very rare albino form of *P. eriantherus*. The usual purple shades in stem and leaves are lacking in this and the large flowers are snowy white all except the great hairy fifth-stamen of luminous orange color. Another one, *P. glaber*, is a subject for larger work gardens or the border, growing to twenty inches and covering with its many stems more than as much space laterally. It is a medium to deep blue, often with touches of purple, and its densely packed spires of blossoms make a wonderful show.

That particular spur of Pine Ridge where the newest Pentstemon was discovered I think I must visit again. So many unexpected things are there and I am sure others await discovery. Growing in crevices on exposed knobs of the pinkish-buff sandstone that rims the heights was Hooker Sandwort, *Arnearia hookeri*, a prickly little plant somewhat like the needle-leaved Phloxes,

but larger, up to five or six inches, and spreading perhaps to eight. This also had blossomed and had ripe seed in mid-July. Its petals are white, narrow and sharp tipped, the flowers in clusters. It is prospering in the garden.

Thrill after thrill came as we made the climb above where the car could not go, up a timeworn trail over the rocks. In a pocket of soft sand enriched by the accumulation of duff from surrounding Pines were the queer, hexagonal box-like seed capsules of the Guinea-hen Flower, *Fritillaria atropurpurea*. It grows from a scaly bulb about four inches down, and is said to be very pretty, and easy. Certainly the seed pods are novel ornaments.

A short way on we came upon the last blossoms of another first time plant, *Townsendia grandiflora* possibly, though the petals were white, while the books say they should be purple or pinkish. Unlike its sister the Easter Daisy, *T. exscapa*, this plant has a branched stem and attains a height of six inches or more. Its charming blossoms are produced over several weeks.

(Continued in April issue)

CURRANT PLANTS

He have a fine lot of two-year-old Red Currant Plants—Wilder, Diploma and a few Red Lake.

These are all large fruited varieties; Diploma the largest, but Wilder has been our leading market currant for 35 years. Not more than 10 Red Lake sold in one order.

Prices: 20c each; 5 for 80c; 10 for \$1.50; 25 for \$3.35; 50 for \$6—postpaid within 600 miles.

JOHN ROBERTSON, Hot Springs, S. Dak.

RUSSIAN OLIVE

Sacrifice sale of 2,000 R. Olive transplants, to make room for other plantings. Shipped by express collect only. Order direct from this advertisement—25 or 50 at 100 rate.

	10	100
R. Olive tr., 3-4 ft.	\$1.25	\$9.00
R. Olive tr., 2-3 ft.	1.00	8.00
R. Olive tr., 18-24 in.80	7.00

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