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NORTH AND SOUTH DAKOTA HORTICULTURE

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GARDEN OBSERVATIONS

Mrs. M. W. Sheafe, Watertown

Continuing our observations of plants that thrive even in extremely dry weather, will take the globe thistle as the next one for consideration.

Echinops (rito)

If you are interested in material for winter bouquets and nearly every one is, the above mentioned perennial plant will add to your collection, used in a bouquet, as a cut flower or as a garden ornament. The common name (globe thistle) describes the plant very well as the flower forms a perfect globe of blue and steel. The root is long and carrot like, hence is not so soon affected by drouth. Seeds start easily if sown in the autumn, but will not bloom until the second year. Cut the thistles before they begin to turn dark, if wanted for decorative use.

Hemerocallis or Daylilies

If you care for a fool proof plant that will endure all sorts of abuse and will greet you each year with a smile and will also supply you with abundant bloom, for a long season, either wet or dry, this plant will be the one. In this northwest climate where the choicer lilies are somewhat uncertain, and at best require very careful planting and covering for the long winters, the daylilies are a great joy. There are a number of species but this writer is only familiar with four of them that are growing in my garden: Flava (lemon lily); Fulva (brown or tawny); Kwanso (double golden bronze), and Dumortieri, an orange colored, low growing plant, that makes a pretty border, blooms in early summer. Through the interest and effort of Dr A. B. Stout a former Wisconsin man, now in charge of the New York Botanical Garden, many new hybrids have been introduced. While very much to be desired the price is prohibitive to many gardeners at the present time.

Among the newer sorts, there is great diversity of flower form, color, habit of growth and season of bloom, has been obtained, reds and pinks, in attractive shades, have been developed but are not yet on the market.

Cinnibar and Mikado are two of the newer ones now offered to the trade, the latter is described thus: Foliage medium, coarse, ascending, curving. General level about 20-24 inches. Flower stems rise 10 inches higher. Leaves remain freshly green and tidy until heavy frost. Flowers five-inch spread. In the middle of each petal there is a large blotch of dark and almost purplish red in sharp contrast to rich orange of rest of flower. Season midsummer. While the bloom lasts only one day, they continue for so long and are equally good for cut work. Another admirable quality is their freedom from disease or insect enemies.

A correction on my observations on Statice in the September magazine next the last line, thus, "resembling somewhat the perennial gypsophila," which comes earlier, instead of later, as printed. Presume I copied my notes wrong.

NORTH DAKOTA STATE HORTICULTURAL SOCIETY SEPTEMBER, 1930, NEWS LETTER

C. B. Waldron, Secretary, Fargo, N. D.

All membership dues in the North Dakota State Horticultural Society may be sent to C. B. Waldron, State College Station, Fargo. While arrangements have been made to publish the News Letter in conjunction with the South Dakota Society, the North Dakota Society still retains its identity.

The plant physiologist tells us why a plant that goes into winter in a dry condition and in dry soil is more apt to winter kill than one which is generously watered before the ground freezes. The story, though interesting, is too long to tell here but it is entirely convincing, particularly as it is based upon years of observation and experiment.

What does a perennial plant, woody or herbaceous, do in the fall? To the casual observer it seems to stop all activity with the falling of the leaves or the dying down of the stems. As a matter of fact, if one could see underground he would discover that certain important processes are still going on. Some of these, like the chemical changes, are to be determined only by the chemist, while the others, like the growth of new roots, are very obvious to one who would take the trouble to dig. The growth of new roots in the fall applies especially to plants which have a large amount of stored food in the underground parts, but it also is true to a certain extent of all trees and shrubs. This fall growth of new roots is stimulated by warmth and moisture. This suggests that we water and mulch our plants during the latter part of the season.

Raspberry plants have had a pretty hard time in North Dakota during 1930. A number of growers have sent in specimen branches from their plants wondering if the poor condition is entirely due to dry weather or partly due to disease. Investigation shows that dry weather almost wholly accounts for this condition. It is true, of course, that certain pests like the red spider are much worse in dry weather, and almost any plant disease is more likely to attack a plant which is making a feeble growth. Some raspberry plantations were observed that were making a satisfactory growth and were in perfect health. These are growing on a rather sandy type of soil, having a porous clay subsoil. It has long been observed that that type of soil will stand severe drouth better than the so-called heavy soils.

Inquiries are coming in as to the advisability of fall planting of trees and shrubs. We usually say that we plant in the fall if we can and in the spring if we have to. The writer usually does most of his planting in the fall and advises other people to plant in the spring. If fall planting is done early, the ground kept moist and freezing is delayed by heavy mulching, fall planting is the best, as it induces root growth which will help the plant in the spring. Plants like the coniferous evergreens, currants, etc., that mature early should be planted in the fall, the evergreens preferably in August and early September. Plants that keep on growing late in the season had better be planted in the spring unless one uses unusual care in transplanting. Small trees and shrubs can be made dormant early by stripping the leaves off.

The "Yard and Garden Contest" movement is gradually spreading and several towns in North Dakota, some of them with only a few hundred population, had such contests this season. There is probably no one thing that will stimulate improvement of the home grounds more suddenly and surely than to stage one of these contests. It is the only thing that we can think of offhand in which you win if you lose.

Several of the counties in North Dakota have been putting on farm vegetable garden contests through the women's clubs. The writer has had occasion to judge some of these contests and was quite astonished to see what has been accomplished in many cases even under severe

weather conditions. When women tell of how many hundred pints they have put up from gardens varying from a tenth to a quarter of an acre, you can readily see that the women at least have attacked the problem of farm relief in a most intelligent and efficient manner. They are not concerned with high or low prices or cost of production; they have taken the precaution to see that their families are well fed until the next season comes, regardless of what may happen.

At the last meeting of the State Horticultural Society at Grand Forks, August 21 and 22, there was about the usual number in attendance and the exhibits were varied and attractive. It is interesting to note that people who a few years ago hardly knew one plant from another are now familiarly calling many of the lightoned varieties of gladiolas by their first names. This is one instance in which familiarity does not breed contempt, and one wishing to take lessons in enthusiasm should hang around the flower shows, even though it is put on by the newest of amateurs.

The officers elected at the 1930 meeting were:

H. C. Cooper, Abercrombie	President
E. A. Arhart, Grand Forks	Vice President
Mrs. Margaret Doheny, Devils Lake	Vice President
W. B. Overson, Williston	Vice President
C. B. Waldron, Fargo	Secretary
E. L. Shaw, Fargo	Treasurer

Since the election of officers, Dr. Cooper has found that he will be absent from the state for the next eight months or more. For this reason he has tendered his resignation and the vacancy will be filled by the executive committee, which consists of all the officers. The next meeting will be held at Jamestown, the dates to be decided later by the executive committee.

Inquiries have come in as to the time to plant seed of the Russian olive, honeysuckle and some of the forest trees. All seeds having a hard coat, like the Russian olive, honeysuckle, nuts and acorns, should be planted in the fall or else mixed with moist sand and put in a box and allowed to freeze over winter. We have found that Russian olive seed planted in the spring failed to grow that year but seed planted in the fall grew readily the following spring. In case the ground is very dry it would be well to water it so as to get the full effect of the freezing. Seeds of the Russian olive can be furnished by the Agricultural College at a cost covering the postage and the labor in gathering it. This tree seems to have been but little affected by the drouth the last two years.

EVERGREENS FOR THE ROCK GARDEN

When you see long rows of small evergreens in the nursery, fat little spruce and pines, fairy tall junipers—have you not wished that they would never grow much larger so you might have some of them in your little rock garden? Well you can—just pick out the tiny trees you want, have the nurseryman dig them up and pot them for you or you can pot them yourself, if you are very careful not to let the roots become dry. Use as small a pot as possible, water well and sink the pot in the rock garden, it will grow, but very slowly. Two Douglas fir grew not more than an inch in six years. I wondered if they were really in a healthy condition, so took them from the pots and planted them in the border, did they grow? Nearly six inches. So I repotted one and put it back in the rock garden where it is doing nicely; a tiny Mugho pine is also staying put, instead of overshadowing the rock behind it.

You may have a tiny evergreen forest in your rock garden, pines, spruce, fir trees, junipers, arbor-vitae. Try it.—Wisconsin Horticulture.

EXTRACTS FROM THE DIARY OF A TRAVELING MAN

W. A. Simmons

August 5. Our friend, J. Pluvius, seems to have been taking a long vacation in Yellowstone Park this year and to have forgotten the rest of the country. In the park rain has come regularly and everything looks green and fine. It rained nearly all night at Gardner, Mont., last night and it rained hard in the park today. They have been troubled with young cloud bursts this year, causing rock slides that block some of the roads. The one last night blocked the road between Mammoth and Gardner for a while but was cleared up this morning.

As usual, I bought some candy to feed to the bears but seeing none, ate most of it myself; now I know what makes the bears wild. I see that I shall have to be more careful in my selection of candy hereafter. As usual I sent some postcards home. I would rather have sent the rain home, but the postmaster claimed that it was unmailable.

All the stores in the park are complaining about the light tourist travel this year and of the visitors carefully abstaining from spending any money. They deny that there was any special demand for shirts, despite the large number that were supposed to have been lost in Wall Street last fall. Uncle Sam seems to have "loosened up" unusually well this year, as I have never before seen so much road building going on.

The rains in the park have been of benefit to the irrigated districts in keeping up the level of the streams that rise there, and they have also simplified the work of the forest rangers in preventing fires and in supplying food for the animals that are pastured there.

August 6, Bozeman, Mont. I had a very pleasant visit at the State College here with Dr. Harrington and Professor C. C. Starring, horticulturists in charge. Professor Starring is a native son of South Dakota, being born near Huron. He lived several years at Sioux Falls and is a graduate of Brookings. They have a fine campus and group of buildings at the college but are handicapped like most of their brethren in other such stations by lack of ground and by insufficient appropriations, saying of the latter that they were compelled to pinch each nickel till the buffalo was buffaloed and the Indian pleaded loudly for mercy.

It seems never to have occurred to founders of such institutions that future directors of the station might desire to raise something on the grounds. They are making the greatest possible use of the limited ground space they have in their plant breeding and have done some very fine work, chiefly along vegetable lines. They showed me some very fine rows of Professor Yeager's sweet corn which they value very highly for its quality and its earliness, which latter quality is a lifesaver in their short growing season at their altitude of 4800 feet.

They told me that the Montana Horticulture Society was almost entirely confined to the commercial growers in the Bitterroot Valley. They have regular annual meetings but have no publications, and their proceedings are of scant benefit to the residents of the eastern part of the state, where conditions are very different and where the amateurs predominate.

August 13. The landlady at Judith Gap, Mont., has some original pillars to support her flower pots. They are made of four foot lengths of pine logs. The logs are about one foot in diameter and have the bark left on. They stand on end on the floor, thus bringing the tops of the flower containers to about five feet above the floor level. She has the pots filled with drooping plants like crab cactus, ice plants, ivy, foliage plants, etc. She has just installed a new lot of logs and said that the old ones which these replaced had lasted four years, which she thought was about their limit, since after that time the bark loosens and begins to scale off. The logs made a very pretty rustic effect.

August 15. Reports recently issued tell of 100,000 acres started on the road to reforestation this year by new plantings of conifers. This reminds one forcibly of the classical example in arithmetic of the cat

that fell in a well 60 feet deep, climbed up two feet every day and slid back three feet every night, a situation our Chicago friend would like to see every cat in the land in, no doubt. As long as three acres are destroyed by fire to every two acres planted, we are not likely to get ahead very fast in our supply of timber, but it is at least encouraging that some effort is being made in that direction and in the 24 wet years that are said to be impending, we may be able to keep the forest fires in check. Substitutes are so rapidly taking the place of wood that we are not apt to feel the loss of the forests from a utilization standpoint. It is on our watersheds that the loss will be felt, and there no substitute for trees exists.

August 22, Grand Forks, N. D. The meeting of the North Dakota Horticulture Society was held in the farmers' rooms of the courthouse and was most enjoyable as usual. President Cooper presided in his usual pleasant manner and also gave a very good talk on peonies, emphasizing the importance of giving the plants plenty of water in the fall when new feeder roots are being formed. Without moisture at this time, these new roots are not formed and no satisfactory blossoms come in the following summer.

Dr. T. E. Barber of Grand Forks gave a very instructive talk on gladioli, of which he produced some wonderful specimens to show that he knew what he was talking about.

Professor Yeager's talk was on selecting fruit and vegetables to display at fairs and shows. He said that if one was in doubt about the kind of specimens to select, to send his wife to the market and observe the kind she picked out for table use. She would not choose the largest ones obtainable but would choose uniform ones of medium size, and Dr. Yeager said that these were the sort to win prizes. In a case of this kind, a bachelor would be severely handicapped, but Dr. Yeager offered no suggestions for a situation of that kind.

Dr. Waldron reminisced about his early experiences in talking horticulture in the state when he really had very little to talk about, since so little of a hardy nature existed. He contrasted that day with the present day, when the various plant breeders of the northwest have given us such a wealth of hardy fruits.

Dr. Walster of Fargo presided at the banquet as toastmaster in his inimitable witty manner.

On Friday morning we were loaded into automobiles and taken for a tour of the beautiful parks which Mr. Max Kannowski, the park superintendent, keeps in such excellent condition.

We then visited the farm home of Mrs. Fannie Heath five miles southwest of the city. Mrs. Heath is a pioneer of horticulture in North Dakota and has done a great deal, both by example and with her gifted pen, toward beautifying the state. The farm was filed on in 1878, then just a piece of raw prairie, though it is hard to realize now that is was ever such. Many trees and rare shrubs now adorn the place, and Mrs. Heath has established a veritable wild flower arboretum but she does not neglect the improved flower, though I think her heart is with the wild ones. She has about every hardy variety of cacti in a large bed and in the center of one large spreading plant the tamest striped gopher I ever saw has established his home. How he ever goes in and out without being impaled on the cactus spines is beyond me, but once in he is safe, as no four-footed enemy could get at him without undergoing great suffering.

Mrs. Heath has a new wrinkle in the culture of the regal lily which certainly works with her soil and may with all soils. She sprinkled vinegar around all but two and the lilies so treated had produced many fine blossoms, while the two left as a check had grown only about a foot high and had failed to bloom at all.

WATERING LAWNS

(Thomas W. Hobart wrote the following which was published in the Daily Argus-Leader)

Why do so many people dig large basins around their trees and sink tile near the tree trunks, wasting tons of water by pouring it there? These same people, in case of a shower or downpour of rain, can find shelter by gathering under a tree. Why? Because it is dry there and will be for hours, despite a heavy rain. Nature plainly shows by this that she does not water a tree at the base surrounding the trunk.

For an hour or two following a rain there is a steady drip, drip from the outside rim of the foliage to the ground. Nature again showing us where the water is really needed and where the feeding roots are located. There are very few feeding roots located under a tree's foliage, the roots there being mainly holding or brace roots.

It seems impossible that any home owner who has occasion to walk or drive through any tree lined street after 10 o'clock in the morning, would fail to notice the large, dried out half circles extending far into each lawn from the foliage rim of trees in the parking. Plainly showing where the feeding roots of the trees have already extracted the moisture from the lawn that had been applied the night before. Is it any wonder that it is hard to keep up a good lawn when the water that the trees and lawns both need is wasted by pouring tons of it in a place (the base of the trunk) where neither can make use of it? The facts are that the writer in the last 20 years has demonstrated time and time again by actual tests covering a whole season each time, that one-half the water wasted in this manner in Sioux Falls would, if applied evenly all over the lawn, keep every lawn and tree and shrub in the city in perfect condition, and oh what a relief to the overtaxed pumps at the city pumping plant. OH, WHAT'S THE USE?

Last Sunday morning while taking an early constitutional, I ran across a man out at 7:30 a. m. watering his lawn, a steep terrace, which was about the greenest and prettiest lawn I had seen. As I stopped to admire, he remarked:

Morning Watering

"Neighbor, I think I've made a discovery. Up to this spring I have done all my watering at night, like all my neighbors and had hard work to keep this terrace growing at all. In fact, it was always about like these (indicating the other lots on either side). This spring it was easier for me to water in the morning than at night. My neighbors declared I would waste the water and burn up the lawn because the water would exaporate away in the sun and do no good. But look at it after all this heat. Compare it with the other lawns and I also believe that I'm using less water than they are. I know I'm using less than when I watered at night because my city water bills are less even in this hot weather. Now, what's the answer? I wish someone would tell me."

The writer made a mental note of that, thinking that the explanation might be of some use to readers of this column. The answer is just this:

Plants Rest

Plants, like most animals except specimens of the genus homo, rest at night. The feeding roots gradually stop taking up moisture as evening approaches and the process is nearly dormant by 9 p. m. The process commences again at about 10 a. m., or when the sun is well up in the heavens. Evaporation of water from the soil keeps up to a greater or less degree all night, depending on how dry the air is. This hot dry weather that we are experiencing causes the action to be very rapid all night long so that by sun up the night applied water is about one-half gone without any chance to benefit the plants.

The soil evaporation from sun up until 10 a. m. is so rapid as to do away with the balance of any moisture that might exist. So that when the plants commence to feed there is but very little moisture left for them to use. Is it any wonder that lawns dry up and turn brown? There

is little or no evaporation going on while watering in the morning, as the application of water stops the capillary evaporation action of the soil during the watering process and for about one-half hour after. Then the capillaries get in action again and evaporation commences. Morning watering that is carried on up to 8 or 9 o'clock manifestly leaves considerably more moisture in and on the ground for the use of the plants when they commence to need it at around 9 or 10 o'clock.

It follows that the same amount or even far less water when applied in the morning will give far better results than larger quantities applied at night.

Are you one of the many who think that cold water hurts lawns? I wish I could get you to let a 25 or 50 pound chunk of ice melt on a spot of your lawn. Keeping the chunk off the grass so that it wouldn't smother it, you'd see the grass do some growing.

One-half the water used in the nightly sprinkling, if applied all at one time once every week or ten days, immediately after mowing, would keep the majority of Sioux Falls lawns in perfect condition.

GARDEN NOTES

F. X. Wallner, Sioux Falls

The Canadians won first, second and fourth in the National Cauliflower contest at Milwaukee last month.

The new celery champion is from Indiana and he won with a new celery—"Meisch Special".

September 17, our new red water lily is still blooming but the white and yellow ones have had no blossoms for several weeks.

Earliana and June Pink Tomatoes are giving us big fruit even late in the season, proves to me that they are worth while as we also pick two weeks before the late ones come into bearing.

Wish someone could tell us if spinach should be sown in September or late in November for wintering over here in the Northwest.

September 19, Special Garretson Fall Fair Notes:

Judging the fruit, grains, corn and vegetables is a big day's work. I used to think it sort of a holiday and I do enjoy this day, but to place everything properly, especially bushel entries of corn and the ten ear samples of yellow corn is a real task. It is also a pleasure to explain to the losers why their products did not win.

I also noticed better selection in tomatoes, carrots, beets and potatoes.

The plums and apples were not so plentiful so that I still claim the tomato to be "the Fruit Supreme for South Dakota," even the three plates of yellow plum tomato looked like yellow plums.

Some of the corn exhibitors could hardly believe I had my first lesson in corn selection for the World's Fair at Chicago in 1893 and won nine premiums at the International twenty years ago.

September 19. Picking lots of cucumbers, tomatoes and peppers today as frost is again predicted but I hope we escape it for another week or more.

While visiting Mr. Robertson's Nursery and orchards one sees many interesting things. A Canadian Chokecherry grafted on the native Black Hills chokecherry several feet from the ground caused the bark of the stock to change in appearance. It is taking on all the characteristics of the bark of the cion.

On August 12th Mr. Robertson gave me some of his last year apples which he had kept in cellar storage since picking. The Golden Delicious was in exceptionally good condition. Melba was not in as good condition. It was firm but had lost more of its flavor.

The wasps were carrying a considerable part of Mr. Robertson's raspberry crop away. These pests together with the porcupine are some of the things with which he has to contend.

THE SLATE-COLORED JUNCO

O. A. Stevens, Fargo, N. D.

This is one of the smaller birds of the sparrow family which can be identified without difficulty. The slate color of the back and breast with the contrasting pinkish white bill, white underparts and outer tail feathers is sufficiently distinctive. The fact that they appear in such large numbers is another reason why they are well known. In our region the juncos are seen chiefly during migration and are about the first spring birds to appear in numbers about our houses.

These birds winter as far north as southern South Dakota and through most of the eastern United States. Very often they have been called snow birds. Like others of their family they feed upon seeds during the winter. After a light snow in late fall I have seen them eating the dandelion seeds from the late heads which stood above the snow. Under solitary plants of lambsquarters, pigweed or marsh elder the snow would be covered with tracks, thus showing another feeding place.

At Fargo the juncos appear the last week of March and are very common until the last of April, a few remaining until nearly the middle of May. In the fall a few arrive the middle of September and most of them have gone by the end of October. Their migration thus extends over a considerable period but it may be only a few days that they are present in great numbers. This has been very noticeable in my back yard especially since I began trapping. In the spring of 1929 I took 67 birds there between April 7 and 13 but only 72 during the whole spring.

The juncos are gentle, friendly birds. They have a cheerful trill for a song and a "tsip" call note. A sharp click seems to be an alarm note. I remember one time when a small group of blackbirds flew into a grove where a large flock of juncos were gathered. There was a chorus of click, click and then silence.

The summer home of the juncos is in the northern woods, as far south as northern Minnesota and New York and farther in the mountains.

The nest is made of grasses and rootlets, often placed under a log or the roots or top of a fallen tree. The eggs are bluish white, finely spotted with brown.

The slate colored is the kind which is found all through the eastern states. Several kinds are found in the western states. The white-winged junco, which is quite similar to the slate-colored except for the white bars in the wing and more white in the tail, nests in the Black Hills. An occasional bird of this or of some of the other western forms may wander eastward. Quite a few specimens, especially in the fall are more brown on the upper parts or brownish below the wings but these are most likely to be young birds of the ordinary slate-colored junco.

REFORESTATION IN MINNESOTA

Ray P. Speer, Past President, Minneapolis

The problem of reforestation in Minnesota is a big one. To the north of us, covering nearly the entire upper half of the state, lies a region peculiarly fitted for the production of timber, yet for the most part entirely denuded of the virgin forests of pine and spruce which once covered it. There was a time when it was a producer of tremendous wealth, a builder of fortunes that have since taken rank with the great fortunes of the world; now, for the most part, it lies there, a barren waste—unproductive; grown up to aspen, brush, scrub oak, jack pine and popple; a great gap in our economic scheme.

How are we to be able to restore this great area to some measure of its original condition? How are we to be able to make those millions of acres blossom again, give continuous labor to countless thousands of men and women and turn back into the channels of trade a revenue which will make this vast region as valuable to us as the rich agricultural section

lying along its western and southern borders? Such is the problem—one of more tremendous importance has never faced the great state of Minnesota.

In the solution of this problem the nurserymen of the state have a great underlying interest. Their first interest is that of citizens bound up in the welfare of the state. There is no group of men in civil life more familiar with the underlying principles of correct reforestation than the nurserymen; and, appreciating the enormity of this problem, they approach it with deeper concern and more thorough understanding of its intricacies than almost any other lay body.

Then, again, the nurserymen are intensely interested in the problem because, so many of the solutions which have been offered have had such a bearing on their own business. Reforestation implies the raising of trees of various kinds, and the nurserymen of the state are engaged in the growing of trees. That the abuse of certain schemes for reforestation might easily wreck the business of many of the great nurseries of the state, which it has taken millions of dollars and decade after decade of time to build, does not often occur to the thoughtless. Yet the nurserymen are well aware of these perils and perhaps this is the greatest of all reasons why they are so concerned with the matter.

In large part the nurserymen of Minnesota have very decided and uniform opinions on reforestation. It is a question which has been discussed by them at numerous conventions and gatherings over a long period of years. It is a proposition which has been debated by them at numberless legislative committee hearings. It is a problem which has furnished the bone of contention in at least several state wide political campaigns. Out of all this discussion, argument and speech making has come a rather united idea as to what constitute a proper solution of the problem. It is this common opinion which I shall endeavor to present. There may be slight variances of opinion here and there, but for the most part I am convinced that I am about to present the common attitude.

In the first place most nurserymen believe that a considerable acreage in the forest area can be either reclaimed for the most part by natural regeneration, as the forester terms it, or planted with stock which has come up naturally in great abundance in other districts where seed-trees are plentiful. I have heard this view expressed at many meetings by men whose judgment in other matters is to be greatly respected.

On the other hand, it is the belief of other nurserymen, and a large number of state and federal forestry officials that there are areas that can never be reclaimed by natural planting, and that in practically all of the rest of the area a very large amount of planting by man would be necessary to attain the best success.

I am not prepared to state which group is entirely right, for undoubtedly there is a big measure of truth in both positions. But as far as both camps are concerned, there is united belief that some planting by man is necessary, and in this, as far as the nurserymen are concerned, lies the crux of the problem. For, as long as some planting must be done, how, asks the nurserymen, is it to be accomplished? Is the state to be permitted to engage in the business? Or are the private nurseries to be called upon to raise the material by contract? Or, still farther, is some of the material to be raised by the state and the balance supplied by private nurseries? It is in a discussion of this phase of the reforestation problem that most of the argument lies, whenever nurserymen get together.

Now there is no question about where the big majority of the nurserymen of the state stand on this matter. There might have been a question about it once upon a time, but there is no question about it now. Their opinion on it was well expressed in a certain resolution adopted at the last meeting of the Minnesota State Nurserymen's Association, just a year ago. It was as well expressed in the official opinion arrived at by the

legislative committee of the association and presented by them before the senate and house committees at the last session of the legislature.

This opinion can be expressed in a very few words. It is that the Minnesota State Nurserymen's Association is in no way opposed to the establishment of a state nursery, or the right of the state to raise its own plant material for reforestation purposes, as long—and permit me to use capital letters in spelling the words—AS LONG AS THE TREES ARE RAISED IN THIS NURSERY, ARE CONIFEROUS TREES INDIGENOUS TO THE STATE, AND CONSEQUENTLY USEFUL FOR REFORESTATION, AND AS LONG AS EVERY PLANT RAISED IN THIS NURSERY IS ACTUALLY USED IN BONA-FIDE REFORESTATION.

Was there ever a fairer attitude than this? Can such an attitude be construed by anyone as being injurious to the public interest or anything other than public spirited, generous and whole minded to an extreme degree? I say this because, in the face of this opinion arrived at unanimously at the last convention of the State Nurserymen's Association, there are some who still believe us selfish, unpatriotic and utterly opposed to the public welfare.

To those who persist in expressing such opinion I say that there is not the least foundation to it. I say that no other body of men has ever taken a fairer, less selfish attitude than this. For, in our admission of the right of the state to engage in the same sort of business as nurserymen are engaged in, our only request has been that whenever the state shall decide to go into such a business it shall restrict itself entirely to the original purpose for which it has been created, and—I spell it in capital letters again—KEEP ENTIRELY OUT OF THE LEGITIMATE FIELD OF PRIVATE PRACTICE WHICH HAS BEEN BUILT UP BY SUCH ARDUOUS EFFORT AND OVER SO MANY TRYING YEARS, BY THE NURSERIES OF THE NORTHWEST.

This serious concern of the nurserymen may be ridiculed by some. Could it be possible, you may ask, that the great state of Minnesota might do otherwise? Alas! There is plenty of reason for such concern, for there are numerous instances where other states have gone into the nursery business and, with the most laudable intentions, only later to distribute through devious channels the larger part of their output to thousands of persons no more entitled to get free trees from the state than free loaves of bread or free suits of clothes, free automobiles, free houses or free rides on the railroad.

In our own instance I can see no fear of this if the law that establishes a state nursery is a right law, if its administration is conducted in an honest way and—let me use capital letters again—IF THE NURSERYMEN OF THE STATE EXERCISE THEIR GIVEN RIGHT TO CONDEMN THE FIRST ACTUAL VIOLATION OF THE LAW AND TAKE INSTANT STEPS TO PROTECT THEIR LEGAL RIGHTS IN THE COURTS. I have a good enough opinion of the people of this state to believe that they would not countenance such practice, once it was revealed to them.

Personally, I cannot take any other view. I, for one, do not want the solution of this great problem delayed. I want this problem solved soon and in the right way, for the solution of it and will aid materially in making us a more prosperous state and a better state in which to live. And, if plant material for reforestation must be raised by some one, I am perfectly willing to admit the right of the state to do it, as long as our interests in all other fields are protected.

The nurserymen of the state not only want all this done, and done well, but they want to throw their wholehearted support behind any plan for the extension of fire control, the elimination of all those diseases and insects that prey upon our forests and seek to destroy them and the extinction of all those animal parasites that live on young trees and cut down the stands of trees that come up either naturally or as a result of the work of man.—Minnesota Horticulturist.

THE GLADIOLUS AND ITS CULTIVATION

Dr. T. E. Barber, Grand Forks, N. D.

It is given to few flowers to rise from comparative obscurity to be a flower of fashion in three continents, to have journals and societies established in its interests, and to possess a host of admirers, continually increasing in number and enthusiasm. Such is the proud position of the gladiolus today and the reasons for its popularity are obvious.

Firstly, the glorious beauty of the flower itself and its rapid and continuous improvement in the hands of plant breeders, so that for brilliancy, delicacy and variety of color combined there is now nothing in flowering bulbs to compare with the gladiolus. Size of flower and length of spike also have increased greatly, and to those who have known only the dull reds and purples, which are still the sole representatives of gladiolus in many gardens, the gorgeous and delicate loveliness of many modern varieties will come as a revelation.

Secondly, its great adaptability. A nurseymen expects to hear of some localities in which his particular specialty fails to succeed, but in the case of the gladiolus the rarity of such complaints is remarkable.

It is a simple and easy matter to raise new gladiolus of third rate order. The varieties of superfine quality come, as a rule, only by the way of much patient labor and many disappointments. Hence the superfluity of the one and the comparative scarcity of the other.

It is not given to any one plant breeder to raise more than his due proportion of "the world's best." Therefore the gladiolus specialist who aims high is called upon to gather in from all sources, ruthlessly rejecting all but the gems.

Remarks as to planting being stressed by growers:

The Soil

A rich, deep soil is preferred although some of our finest bulbs come from the light soils that have been properly enriched. One can grow gladiolus spikes on nearly any kind of soil if proper attention is paid to fertilization, watering and cultivation.

As to the kind of fertilizer one needs, each locality must be worked out by itself, our agricultural college can give us all the information we need along this line and then the required chemicals may be added.

Here in the Red River Valley our chief needs are the phosphates. Old barnyard manure if used properly is fine in small areas but in large plantings the scarcity and the foul weed seed enter into some of its undesirable qualities.

In planting select a situation that gets lots of sun, although on hot days new shoots and buds are liable to burn one will still be ahead in the sun rather than in a shady situation where the flowers will not do their best.

In planting the out soil should be moist but not wet and it is not a good plan to water heavily directly after planting.

Plant no 1-2-3 bulbs three to four inches deep in our heavy soils and possibly a little deeper in light soils. Smaller bulbs may be planted shallower as many of these one will not want for blooms but for increase of stock for the following year.

Bulblet planting, germination storage and growing is a problem all by itself so the outline following is practiced in our planting and our percentages of failures have decreased since following this method.

As early as the ground can be worked after frost leaves we trench our ground and level the bottom; then add fertilizer and rake in; then sow the bulblets, usually very thick, in rows about four inches wide; then we cover about one and one-half inch and pack the soil; then if the ground is foul with weed seed we use the hillier and hill each row three or four inches but don't pack this time.

By hilling we protect the planting from the wind blowing off its soil, from freezing and also which is important, we get rid of the weeds in our rows. This is brought about by simply taking a rake and taking

off about one inch of the soil at intervals of the portion thrown up by the hills so that about the time the new shoot appears at the level of the ground we will have all the surplus raked off and will have your bulblets showing in the rows and your ground will also be free of weeds.

In preparing bulblets for planting, some soak them in warm water, some crack the shell, some peel them entirely so that this must be worked out on the basis of the amount one is planting. We crack some, also peel some of the real expensive ones and the extremely hard shelled ones we soak in sulphuric acid for 10 minutes and burn the shells off.

In harvesting we leave the stock in the ground as long as we dare unless frozen down and in case of frost as we had last year on the 16th of September. We will begin to harvest as once the foliage is killed one must lift at once before you lose the tops as they rot quickly after a killing frost and it surely delays one's harvesting.

We store in tray 24 by 30 by 5 with wire bottoms and in a basement by themselves and where we can keep the humidity around 60-70 and temperature around 40-45.

Common Diseases to Gladiolus

Dry rot plants will grow normally for six to eight weeks then the leaves of the plant turn yellow and become brown and dry, the stems will bend and will decay at the surface. The old bulb will be found decayed and the young bulb will be small and covered with scales dark in color.

Hard rot is manifest on the leaves by small brown purplish discolored areas more or less circular in area, the color later turns to a reddish brown or black and are visible on both sides of the leaves. The bulbs when harvested will show water soaked areas of a reddish brown color on sides and lower half of bulb.

Scab or neck rot is first visible as tiny specks of bright reddish brown color slightly elevated and on the basal portion of the leaf sheaths. The spots enlarge and become like burned out spots and the margins resemble charcoal. The bulbs from affected plants are not always diseased, but if so is evident by brown patches on the husks or bulb which becomes black and gives the appearance of burned tissue.

Badly infected stock should be destroyed while some may be treated by the use of mercurial preparations such as bichloride of mercury 1-1000 solution soaking bulbs 20-30 minutes.

Much credit should be given some of the older breeders in developing this wonderful flower. They were working with material year in and year out that we can not imagine the beautiful creations of today could have been bred from such lowly stock.

Today our breeders have thousands of named varieties of all shades and forms to work with so as a result we are having at the present time a great many introductions, some are worthy and many fall by the wayside. A few of the foreign originators that are outstanding are Errey Brothers of Australia with their Marmora, A. W. Woodful, Red Lory, Mrs. S. A. Errey, Canberra and Victor.

Pfitzer of Germany has given us recently Blue Triumphator, Heavenly Blue, Albratross, Yellow Perfection, Schwabenmaedchen and Stuttsgardia.

Mair and Sons of Scotland have given us Berty Snow, Jessie, King George, Irene, Queen Mary, Senator, John Ramsey and many others.

In America we have many breeders and a few outstanding ones are Diener, Coleman, Fisher, Salbach, Ellis, Kundred, Groff, Crow and a host of others that have produced one or more flowers of quality and are entitled to be enrolled in the Hall of Gladdom as true workers along the lines of improvement of our most popular flower—the Gladiolus.

The Raspberry Mosaic that does so much damage in many parts of the country does not seem to thrive so well in many parts of the Hills. It does not kill the plant in this region as it does in other places.

Last summer blight killed some of the apple trees in the Hills. This occurred in old orchards that received little or no attention. This summer one would expect much more blight but instead many trees show very little of it.

HORTICULTURAL NOTES

Oliver Strand, Field Foreman Horticultural Department, N. D. A. C.

Many inquiries have come to this office about the blossom end rot of tomatoes. This is due to drouth and in a season such as we have had this year it takes an enormous amount of water to overcome it.

Several samples of Black Haw have been sent in for identification, with inquiries as to whether the fruit is good to use. We have never heard of it being used for culinary purposes but would like to hear from anyone who has used it.

Our seedling potatoes, which have been at a standstill nearly all summer, are growing some tubers now and a few more days without frost will give us something to plant next year. There will surely be a natural elimination of the late potatoes.

Our new tomato which has been known as M-6-2 is now called "Progress." It shows definite improvement over the Red River variety, being larger, fully as early, a heavier yielder and does not have the russet appearance on the stem end that Red River had in certain seasons.

Jumbo tomato, which was always much larger than its sister tomato, Agassiz, seems to be smaller than the latter this year. It is remarkable what a difference there is in the tolerance or lack of tolerance of some plants in different seasons. It is the wide tolerance of such plants as the Earliana tomato, the Senator Dunlap strawberry and the Golden Bantam sweet corn that enables them to hold favorite places as varieties for such a long time.

The onion harvest is about complete in the Red River Valley for this year. This industry is pretty well established here in the valley now and this has come about in the last 10 years.

In our rush to get the last iris premiums sent out we failed to include the name of the variety, which is "Perry Blue," a Siberian iris.

PREACH THE VIRTUES OF HONEY

Get the nectariverous habit, folks! Eat more honey. Keep the bees busy gathering the nectar of plants, the most delicious and healthful of nature's store or foods.

The Bee Industries Association of America and its subsidiary, The American Honey Institute, have undertaken the task of making America a "land flowing with milk and honey."

It is strange, but true, that the consumption of honey has not kept pace with that of much advertised sugars made from sugar cane and roots. The beekeepers have come to the conclusion that it is lack of advertising that has kept honey behind in the market race. It may be so. We sincerely hope the American Honey Institute will bring about a very general honey eating habit.

What a sermon the American Honey Institute can preach on the goodness of honey! Honey has been a delectable food of man since before the dawn of history. Next to the apple, it is the oldest food in literature and has been crowned for virtues by all nations in all times. The Old Testament scintillates with honey. Samson, the strong man, ate of it. It is praised in song and story.

Our grandparents knew its virtues and used it both for food and medicine.

Why honey has been so neglected in recent years is past our comprehension, except that other sweetenings have been easier and cheaper to procure.

Honey is food for young, middleaged and old.

Honey is a promoter of health and is of surpassing value as a preventer and healer of throat and lung troubles.

Honey is superior to the ordinary sugars in that it is safe to eat by

(Continued on page 16)

NORTH DAKOTA BEEKEEPING NOTES

J. A. Munro, Fargo, N. D.

A comb honey packaging machine has recently been developed and placed on the market by Mr. C. W. Aeppler of Oconomowoc, Wisconsin. Those who have used this machine claim that it is a real time and labor saving device.

The various sugars have been rated for comparative purposes according to their degree of sweetness, states Dr. P. M. Nelson of the Department of Foods and Nutrition, Iowa State College. The following is an extract from her article entitled "The Place of Sweetens in the Diet" in the September issue of the American Bee Journal: "Using cane sugar (sucrose) as the measuring rod and 100 as the starting point, they rate in the following order: fructose, 173; invert sugar, 123; sucrose, 100; glucose, 74; xylose, 40; maltose, 32; rhamnose, 32; galactose, 32; raffinose, 23, and lactose, 16."

So far as can be ascertained, the yield of honey this past season for North Dakota has been the lowest on record. Indications point to the crop being only about 50 per cent of normal. The unusually dry season has been largely responsible for this condition. A letter from F. C. Bennett of Jamestown (Stutsman County) written under date of September 15, states in part: "Early in July the prospects were good for an excellent crop, but the bees quit work about July 20 and since then the hives have steadily lost in weight." W. F. Boylan of Carrington (Foster County) writes that it has been a very poor year for honey production in Foster County. He attributes this as due to the lack of rain, with consequent killing out of sweet clover, during the past. Ben Gilbertson of Milnor (Sargent County) reports a small yield of honey but states that colonies are in excellent condition for wintering.

Beekeepers should have the following bulletins as they are of special interest at this time:

Farmers' Bulletin No. 1014, Wintering Bees in Cellars, and Farmers' Bulletin No. 1012, The Preparation of Bees for Outdoor Wintering.

These bulletins and a number of others on beekeeping are for free distribution. Address your request for copies to the Secretary of Agriculture, Washington, D. C., or to your senator or representative in Washington.

CITY FLOWER SHOW EXCEEDS ALL RECORDS

Evans Porch Filled With the Flowers—Large Crowds See It Each Season

The porch of the Evans Hotel was a riot of color and bloom Tuesday afternoon and evening during the fourth annual flower show which drew the best displays of flowers and the largest crowd in its history, showing the growing interest felt in this event by the town.

At long tables across the three sides of the porch and down the center nearly 500 vases were filled with almost every variety of flowers known to this section and many which were new.

Cuttings from a variety of tamarack known as the Smoke Bush, grown by Mr. and Mrs. F. O. Butler, huge double sunflowers on stems more than 12 feet tall, grown by E. H. Klock, gladiolas, roses, sweet peas, down a list of 40 or 50 varieties long, and sent in by flower lovers from town and country, each one was worthy of special mention.

The Hot Springs Greenhouse had a beautiful table which, while not competing for prizes, added greatly to the success of the show and showed super-blossoms in a number of varieties.

Grover Pelton, sponsor and originator of the show, has worked for two weeks, talking to flower growers, soliciting prizes from the business houses and people interested and attending to all the little details. And

while he did not exhibit flowers for prizes this year, since he is now in the flower growing business at the Riverside Gardens, he had many bouquets there of flowers grown on ground which was sod at this time last year. His mother, Mrs. Inez Pelton, raises many flowers at her home in town and came in for her share of prizes.

The vegetable table also attracted its share of attention, with mammoth samples of garden vegetables. One squash grown by George Babb measured more than a yard, and one cucumber, grown by Mr. Pelton, over 18 inches.

A full list of prizes and those who gave them will be given tomorrow.—Hot Springs Star.

PREACH THE VIRTUES OF HONEY

(Continued from page 14)

those on a diet for diabetes and many other ills, since it seems not to have the harmful effects of other sugars.

There are many ways to feature honey in the diet as, for instance, flavoring certain breads and pastries and ice creams; eating it with cakes, as cakes and honey, to vary from cakes and syrup. The writer finds a most delicious dish, for occasional eating, is shredded wheat biscuit and honey. Crush the biscuit in a bowl, pour on honey, pour on cream, mix, eat slowly.

Bread and honey has been the delight of children, middleaged and old people since the making of bread.

There are a thousand ways in which honey can be introduced into the meals—breakfast, lunch, tea, dinner and supper.—The Hotel Monthly.

The annual membership fee for the South Dakota State Horticultural Society is one dollar. Send a first and second choice of free premium together with the one dollar to R. W. Vance, Secretary, Pierre, S. D.

South Dakota Premium List

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| 1.—Anoka apple, usually bears the second year. | 8.—Peony, white, one root. |
| 2.—Lilium Elegans, red, three bulbs. | 9.—Chinese Elm, 18-24 inches, two trees. |
| 3.—Gladiolus, 12 bulbs. | 10.—Dolgo crab, that good jelly crab, one tree. |
| 4.—Iris, three varieties. | 11.—Haralson apple, the large red winter apple, one tree. |
| 5.—Oka Cherry, one plant. | 12.—Latham raspberry, three plants. |
| 6.—Peony, red, one root. | |
| 7.—Peony, pink, one root. | |

The annual membership fee for the North Dakota State Horticultural Society is one dollar. Send a first and second choice of free premium together with the one dollar to C. B. Waldron, Secretary, Fargo, N. D.

North Dakota Premium List

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| 25.—½ lb. Golden Gem Sweet Corn. | 32.—2 Chief raspberry plants. |
| 26.—Pkt. Bison tomato. | 33.—12 cuttings of red-twigged willow (Salix Britzensis). |
| 27.—Pkt Progress tomato. | 34.—Pkt. Purple Ground Cherry. |
| 28.—Pkt. Buttercup squash. | 35.—1926 Horticultural Handbook. |
| 29.—2 Pixwell gooseberry plants. | 36.—1928 Horticultural Handbook. |
| 30.—2 Abundance gooseberry plants. | |
| 31.—2 Ash Leaf Spirea (Sp. Sorbifolia) plants. | |

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