

NORTH AND SOUTH DAKOTA HORTICULTURE

SEPTEMBER, 1933



Lily Pool at the Home of H. E. Beebe, Ipswich, S. D.



BEST STRAWBERRY VARIETIES FOR WISCONSIN

From all the important strawberry producing sections of the state come reports that the Beaver variety is gaining in popularity.

Mr. H. H. Harris writes: "Our Beavers and Premiers were nearly equal in productiveness this season, but the Beavers are running all 'fancy' while the Premier often go into the 'standard' grade because of more small berries. The Warfield and Dunlap all, or nearly all, go into the standard grade. Our first pickings of the Beaver were very good. One of the pickers picked 112 quarts in five hours."

Mr. W. H. Hanchett of Sparta writes: "This season again demonstrates that the Beaver is unsurpassed as the most desirable market variety for this section for in spite of winter injury and heavy rains during blossoming season which washed off the pollen interfering seriously with proper pollination, the Beaver came through with a fair crop of fine berries."

Mr. John Black of Bayfield harvested his first crop of Beaver this year and stated that they produced practically twice as many berries as the Senator Dunlap. Furthermore, at the end of the season the Dunlap were not worth picking due to their small size, while the Beaver held up in size very well.

Some other growers around Bayfield report that they will discontinue the Senator Dunlap in favor of the Beaver.

Aberdeen Very Prolific

Perhaps the most prolific variety we have yet seen is the Aberdeen. At Warrens, Sparta and Bayfield it has been tried out for several years and the set of fruit on the stems is sensational. Several growers stated this year that they will extend their planting next year. The only trouble we have seen with the Aberdeen is that the heavy set of fruit bends the stems to the ground and careful mulching will probably be required to produce clean fruit. Its marketing qualities will also have to be observed further before recommendations can be made for increased planting.

The new variety Bellmar did not yield as well as the Beaver and the berries are rather too dark for a good market berry.

Blakemore also falls short of the Beaver in yield, but it holds up well on the vine and can be picked every four days if desirable. Mr. W. H. Hanchett thinks that three pickings are enough for the entire season.

Other Varieties

According to Mr. H. H. Harris, the Empire State variety is the poorest or the greatest failure of any he has tried for some time.

The Clermont looks very good. It has a nice finish and holds up as well as the Beaver

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at the end of the season in size. It is a variety that should be tested further.

For a berry for home use, one of the best we have tasted is the Red Heart. It is of unusually fine quality. It is a light yielder and too dark for a market berry, but any grower who has a patch of them will find that the family will want them for home use. Red Heart should not be confused with Red Gold. The latter is a failure in Wisconsin.

Mr. O. G. Mills of Bayfield who is trying out a number of new varieties finds the Aberdeen to be a very heavy cropper but inclined to have green tips which may or may not be a detriment to the crop. He finds the Bellmar is a poor cropper.

Warfield should be discarded. By comparison of the Warfield variety with some of the newer kinds, our impression would be that the Warfield should not be grown in Wisconsin. It is very much inclined to leaf spot and the berries are much smaller than such varieties as Beaver and Premier, so that as a market berry it is very inferior.

We have seen quite a few trial plantings of Dorsett and Fairfax, the new varieties from the U. S. Department of Agriculture. They looked unusually good during late June and we hope that they will come through as good producers.—Wisconsin Horticulture.



WILD FLOWER GARDENS



Purley L. Keene

Wild flowers may be used to great advantage in the development of our yards and gardens. There are several distinct methods which one may use in arranging them about the yard. Those who are enthusiastic lovers of nature will undoubtedly develop a small part of their yard as a wild flower garden. We also find that many of our native wild flowers may be used to advantage among our ordinary garden annual and perennial flowers. In fact, many of our garden flowers are not far removed from the wild state. Occasionally, we have certain portions of the ground which are rather difficult to handle; we have trouble in making plants grow in these portions of the ground due to soil conditions. Those places may be ideal for the wild flower garden.

There need be no limit in the size of the wild flower garden, or in the size of the home grounds in which a wild flower garden may be used. It may be adapted to the 50 foot lot or to the large country home provided proper precautions are taken to develop the soil and site.

The ideal plan, as most people look at it, is to have the wild flower garden as completely wild and naturalistic as possible. A portion of the yard should, preferably, be set aside for this garden alone. Portions of the garden may be sunny, other portions may be in the shade, but in either or both situations one should have adequate background composed of native shrubs and trees. This background for the setting should be composed largely of native plant material, planted in irregular patches. Occasionally some of the shrubs which we may wish to use will be found growing plentifully in the wild state and can be dug from this source. Others may have to be purchased from nurserymen. We do not, however, desire specimen material; neither are they planted far apart so as to give us individual plant beauty but rather close together so as to allow them to develop more or less into a thicket with the taller shrubs and small trees in the background and the lower and medium shrubs in the foreground.

Any portion of the private or service area of the grounds may be used for the wild flower garden. It is not considered proper to plant or locate it in the public area, or the front yard. Neither is it considered practical to use wild flowers for the foundation planting about the house. It is more desirable to use a small

area back of the garage or along the rear property line, or the narrow strip along the north side of the house when the house faces east or west. Some out of the way corner which is not too completely planted up, or a corner planting having trees and shrubs makes an ideal setting for woodland flowers.

When wild flowers are used in the perennial border they add to the early spring bloom of the border. Many of our wild flowers are particularly late in blooming and are not injured by the early fall frosts. These, when added to the perennial border, prolong the season of bloom in the fall of the year.

Soil Preparation: Success with our wild flower garden depends largely upon the texture and preparation of the soil. Most wild flowers, whether they are found in the woodlands or in the prairie, like a soil reasonably well supplied with organic matter. They will not usually do well in heavy clay soils, especially if this soil has come from the excavation of the cellar or basement. On the other hand, the same wild flowers, if given the proper soil, will do well.

Professor Victor H. Ries in his bulletin on "Wild Flowers and Shrubs in Our Gardens" has this to say in regard to soil preparation:

"The first requirement for growing the majority of our woodland wild flowers is that the soil contain a relatively large amount of organic matter (humus). Since it is seldom that the soil around our homes contains this material in sufficient quantity, it will be necessary for use to add it. Some people prefer to obtain this material from the woods but there is no reason why it cannot be obtained in other ways. If, each year, we save the leaves from our trees, pile them in the back corner of the yard and allow them to decay, some very fine leaf mold will result in a year's time. It is also possible to decompose straw in the same manner.

"If these materials are not available, equally good results may be obtained from the use of peat moss, which may be purchased from a local florist or nurseryman. If your soil is a heavy clay, the addition of a liberal amount of sand will be beneficial. By the time the soil is ready to be planted it should be roughly comprised of equal parts leaf mold, soil, and sand. This material should be at least 6 inches deep, and preferably deeper.

As previously stated, soil preparation is essential if you wish to transplant these natives of the woods. Prof. Ries says that "If you are not going to make this effort, you should not attempt a wild flower garden."

Drainage is another item to consider in the preparation of the wild flower garden area. Most wild flowers do not like to stand in wet situations. If the area is lower than the surrounding soil, it would be desirable to raise the



level of the area so that water will never stand or remain for any length of time over the soil devoted to wild flowers. It will usually not be necessary to use drain-tile in securing adequate drainage of the garden.

Many of our wild flowers are tolerant of soil acidity. They will be found growing in slightly acid or slightly alkaline soil. Other wild flowers like a distinctly acid soil. This is particularly true of many of the ferns and other plants commonly found growing in bog-like situations. Where the acidity of the soil needs increasing, an application of acid peat moss, tannic acid, or ordinary hard wood sawdust is beneficial. Forest soil and leaf mold also adds to the acidity of the soil. Usually an application of this material should be made once a year.

Most wild flowers will be found to respond to the use of fertilizers. These may be applied to good advantage in the form of composted barnyard fertilizer. Where this is not available we may use a complete commercial fertilizer, such as Vigoro, Sacco, Old Gardener, and several other complete commercial fertilizers which can be purchased on the market. Early spring is perhaps the best time to apply the fertilizer. Two or three pounds will be adequate for 100 square feet.

Our native wild plants will undoubtedly prove hardy and need only light winter protection. However, if we attempt to grow flowers from other sections of the country we will find they sometimes require a mulch of leaves and peat moss during the winter. In fact, all wild flowers will be benefited by a liberal mulch of leaves in the fall. These may be allowed to remain in the garden during the next spring and summer. They will add organic matter and also tend to add to the natural effect of the wild flower garden.

Anyone desiring a list of the more desirable wild flowers may secure the same by writing to the Horticultural Department at South Dakota State College, Brookings, S. D.

SOME EXPERIMENTS WITH SHELTER BELTS

There are many problems in connection with growing shelter belt trees in this state which are of more than ordinary interest to the average tree planter. Some of the more important are the distances that trees should be spaced, whether they should be clean cultivated, whether a hay or straw mulch should be used instead of cultivation, or whether the trees should be just planted and neither cultivation or mulching carried out, and whether trees for shelter purposes should be pruned or left unpruned. It is of considerable interest to me while traveling around the country to get people's views concerning these subjects. About 99 44/100 per cent

of farmers are in favor of severe pruning and about 50 per cent in favor of some type of mulch. Their ideas of severe pruning are to make trees grow tall and the idea of mulching is to prevent weed growth and conserve soil moisture. That these ideas are wrong I will endeavor to show a little later on. On the question of spacing distances, opinions differ widely, the majority, however, are in favor of giving the trees "plenty of room". I do not propose to discuss spacing distances at this time but will confine my remarks to the methods of growing trees after the actual planting operation has been carried out.

In 1918 there was set out on the Northern Great Plains Field Station at Mandan, a series of 5 blocks of trees for the purposes of comparing clean cultivation with mulching of hay and straw, and with neglected cultivation, neither cultivation or mulching being practiced, and to compare methods of non-pruning with methods of moderate and severe pruning. These series of blocks were planted in duplicate, one block being spaced 4 by 4 feet and the other 4 by 8 feet. Two blocks therefore received clean cultivation with no pruning, 2 with clean cultivation and moderate pruning, 2 with clean cultivation and severe pruning, 2 with a coating of a hay and straw mulch, and 2 were entirely neglected. Each block contains 10 rows of trees, each row being 26 trees long. The species used in the order of their arrangement are buffalo berry, sharpleaf willow, boxelder, ash, boxelder, N. W. poplar, ash, boxelder, redwillow, and tartarian maple. Moderately pruned trees were kept to one single central trunk and trimmed to a height of about 2 feet. Severely pruned trees were kept to one central trunk and trimmed to a height of about 4½ to 5 feet.

The results in 1932 of these different treatments show the best growth and survival to have been made in the blocks of trees receiving clean cultivation and no pruning, blocks which are clean cultivated and moderately pruned are a close second. Blocks which are entirely neglected rank third, blocks which are clean cultivated and severely pruned rank fourth, and the blocks under the hay and straw mulch rank lowest in height and survival. Some of these results are contrary to public opinion and are the opposite of what most people would expect. There are, however, very logical reasons for each of the results. Very little need be said about the clean cultivated blocks which were non-pruned and those moderately pruned and which ranked first and second, respectively, in growth and survival. Trees in these blocks have suffered practically no winter injury and with the exception of Northwest poplar and red willow, can all be classed as in good condition. A minimum



amount of labor keeps these trees in a clean condition. Very wide differences are apparent between clean cultivated blocks which are severely pruned and those which are non-pruned and moderately pruned. Severely pruned trees suffer heavy killing back each year and have suffered a heavy mortality. Three species have killed out entirely under this treatment. The severe pruning prevents the trees from establishing any overhead shade resulting in the soil being subject to excessive evaporation by sun and wind. The removal of a large part of the leaf area also tends to rob and stunt the growth of the tree through cutting down the food supply. The severely pruned trees are useless as a shelter belt as there are no lower branches to prevent wind and snow from sweeping through and they require considerably more labor to prevent weed growth. The popular impression is that if you want a tree to grow tall, it should be trimmed up. It seems exactly the opposite is true. Trees which are under a hay or straw mulch have suffered the most severe top-killing of any treatment in the series. This top killing is becoming more pronounced each year. They tend to become shallow rooted which is not a satisfactory condition for trees in a dry-land area. This factor may be responsible for the heaviest mortality taking place under this type of treatment. The use of a hay or straw mulch may have several detrimental effects on tree growth and survival. It prevents light rainfall from reaching the soil, the moisture all being held in the mulch resulting in the roots of the trees coming up to the surface of the soil, it presents a serious fire hazard when used in close proximity to farm buildings and it forms a harbor for rodents which often times completely girdle the trees under the mulch line. I have seen some of our farm plantings which have been mulched in which every tree has been girdled by mice. The trees did not survive for very long afterwards. Mulching also presents a possible danger in holding the roots of the trees in a frozen condition after the tops begin to shoot in the spring. Killing back in the tops of the trees is bound to result from an occurrence of this nature. The control of weeds in trees which are mulched is considerably more of a problem than the control in trees which are not mulched. It is true that a heavy coating of hay, straw, or manure, will prevent very much weed growth for the year in which it is applied. After that time, however, a rank growth develops which it is impossible to control except by the use of more mulch which will in all probability carry in an additional crop of weed seeds to come up the following year. We have frequent opportunities of comparing

methods of clean cultivation and mulching in our farm shelter belts. I came across a rather striking comparison of the two methods in northern Montana last year. Two of our five-year shelter belts were planted two miles apart. The trees making up these two plantings were dug from the same field, shipped the same day, and planted under the same conditions. One belt was mulched shortly after planting with straw and in the other one clean cultivation was and still is carried out. Less than 20 per cent of the trees were living at five years old in the planting which was mulched, the tallest trees not being over three feet high. In the planting which has always been clean cultivated, the trees were 100 per cent living and varied for the different species in height from 6 to 15 feet. People for many miles in that community have watched these two plantings and have come to the conclusion that "mulching does not pay". Very little winter injury has occurred in the neglected blocks but the height growth and survival is somewhat less than clean cultivated non-pruned trees. These neglected trees are neither cultivated or hoed and very rarely have more weed growth than can be found in a number of so-called clean cultivated belts of trees. The close spacing distance under which the trees are planted and no very heavy losses in stand have undoubtedly helped in preventing excessive weed growth under conditions of neglect. If the trees had been spaced 16 or 20 feet square as many people would like to space them the weed problem, survival and growth would probably have been entirely different.

To sum up the results at the present time, clean cultivation with no pruning or very moderate pruning is the best treatment. Personally, I would recommend pruning to an extent that would develop a tree with one single central trunk rather than have three or four main trunks from the ground level. Where several trunks are left, considerable snow and wind breakage takes place. Side branches could be trimmed off this trunk which is left to a height of about 1 foot above the ground. Severe pruning and mulching are the most unfavorable forms of treatment for growth and survival. Entire neglect of cultivation practices is not as good as clean cultivation but is decidedly preferable to the use of a hay or straw mulch. On the question of mulching I might add that mulching may not be harmful to tree growth in sections of the country which receive a more favorable precipitation than we do in western North Dakota. Prof. Cheney of the University of Minnesota in a publication issued last year came to the conclusion that mulching of trees after the planting became 9 or 10 years old, may be of some benefit.

NORTH DAKOTA HORTICULTURAL SOCIETY NEWS LETTER



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

Since the time of our annual meeting your secretary has had the pleasure of making a trip by auto to the Pacific Coast, accompanied by the family. You might be interested in some of the horticultural impressions picked up along the way.

In going west from Fargo through the Badlands and that part of Montana east of the mountains the feature of most interest was the evergreens. One can hardly fail to be impressed by the creeping juniper growing on the hillsides where even a cactus has difficulty in maintaining a foothold. The upright types of cedars showing so much variation in their general outline, in their size, density and color of foliage would seem to me to offer a splendid opportunity for some interested person to select out of the native wild stock unusual and valuable varieties for naming and propagation.

I have heard for years of the great genius of the French hybridizers in recognizing the value of the native mock orange (*Philadelphus*) of western United States and in making use of it to help in the production of the new named varieties. After this summer's trip I cannot see how anyone could fail to recognize the beauty of this native wild shrub. Beginning with the mountains of Montana and ranging westward wherever there were mountains between here and the sea coast, this was the most outstanding feature of the landscape. There were literally millions of these wild bushes, anyone of which would be classed as an unusually beautiful shrub in any dooryard. Despite the fact that we journeyed down the Pacific coast at the time when the mountains were aflame with the blooming rhododendrons, it was, nevertheless, this mock orange which made the deepest impression.

In the cultivated and irrigated lands of Oregon and Washington I found considerable change in the crops being planted as compared to 17 years ago when I lived there for a short time. Apples are being replaced by pears in many places and nut trees are coming into their own. Where English walnuts were rarities at that time, there are now large orchards in bearing and many more coming on. The filbert which has always been imported is now meeting American competition. Thousands and thousands of young trees are just coming into bearing on land which was once planted to loganberries and prunes.

Throughout all the Coast region of Oregon where there is sufficient moisture, the rose rules the flower kingdom. While a rose fancier might revel in the great abundance of this flower, your secretary and the family as well found them rather monotonous after the first million or two, and the sight of a good old-fashioned flower garden full of blues and orange brought exclamations of delight. Nevertheless, it is a great sight to see a hedge of roses as tall as one's head, covered with huge double blossoms nearly as large as a peony.

While at Portland we had the good fortune to get in touch with our former president, Dr. H. C. Cooper, who is associated with the North Pacific Dental College located there. Upon our disparaging remarks as to the possibility of their growing good peonies there, we were taken to a cold storage plant where there were great tubs of peony blooms which had been stored for a month. The quality of these blossoms indicated that it was possible to raise peonies. Dr. Cooper, himself, has a considerable quantity of peony seedlings coming on and is propagating one which looks to be a winner.

After driving down the Pacific Coast, going through huge forests for mile and mile, seeing great logs being tossed about by the ocean and piled in disorder at the point of high tide, one must be impressed with the fact that there is still some uncut timber in our great country. On the advice of men of the Oregon Agricultural College, we traveled south along the coast into northern California where we struck the Redwoods. The impression the Redwoods make upon a plant lover is indescribable. Huge trunks thicker through than a car is long extend upwards for over 300 feet, and these stand so close together that it is impossible to take a picture underneath them. Redwood trees, unlike most other evergreens, sprout from the stump or from the sides of fallen trunks. In walking along the top of one of these fallen monsters one repeatedly came upon great clusters of sprouts springing up from the side of the old trunk. Along with the impression such great trees make upon one is the equally deep impression made when one sees blocks off of trees 6 feet through being sawed up and split with a wedge for fire wood.

While our family passed up the World's Fair, for which we had been saving for a number of years, there is not one of us from "yours truly" down to the 5-year-old boy who would exchange this month's trip to the West for any other trip of like duration. It is hard to realize, with the wonderful road system we now have and with our splendid cheap cars, how much can be seen for so little money. Pictures which will never



be forgotten, though not of a horticultural nature, are the intense blue of Crater Lake, the 28 inch Rainbow Trout which the daughter caught, Old Faithful Geyser in Yellowstone, the magnificent Teton Mountains, and Jackson Lake where your secretary blew himself for some Mackinaw Trout fishing. Despite it all, it is rather interesting to get back in the old familiar experimental plots and see what nature is doing in the way of adapting more crops to a difficult situation. Truly, coming home is one of the best parts of any journey.

* * * * *

There are two new bulletins which some of you might like to have, both published by the North Dakota Agricultural Experiment Station. Bulletin 269 is "Wild Flowers of North Dakota". The author is O. A. Stevens and there are a goodly number of excellent pictures. Bulletin 270 is entitled "Some Edible and Poisonous Mushrooms of North Dakota" by H L Barnett. It is well illustrated and describes some methods of cooking mushrooms as well as giving information on identifying common kinds.

A call from the National Federation of Garden Clubs asks for the names of some active garden clubs in North Dakota with their officers. If you happen to belong to one or are an officer, please send in the name of your club with its list of 1933 officers.

Our walnut crop is rather light this year but there should be a few nuts to distribute if you are anxious to have some, provided of course that we are able to harvest the crop before the squirrels or boys get them. Please send postage. Butternuts are somewhat more plentiful than walnuts but we have more difficulty in saving a crop of them because the trees are small.

Just now, August 11, muskmelons are beginning to ripen. As usual, since its introduction, Golden Champlain is giving us a trifle the earliest melons. The quality might be improved upon but it is, nevertheless, better than some.

Radisson plum has made an unusually good showing this year. Several people who have some have expressed their intention of planting more.

EXTRACTS FROM THE DIARY OF A TRAVELLING MAN

W. A. Simmons

August 5th: Dr. J. G. Horsfall of the New York Agricultural Experiment Station at Geneva has discovered that by dusting seeds of most garden crops with a dust that resembles in appearance powdered lipstick a great increase in yield can be realized. The dusting powder is red copper oxide. Black copper oxide seems to be ineffective. The red dust turns the seeds pink. It coats readily merely by shaking the seeds in

a can containing a few pinches of oxide. Two handfuls of the oxide are said to be enough for four acres.

The crops most strikingly benefited were spinach, chard, cucumbers, melons, tomatoes, peppers, egg plants, peas, carrots, and beets. Little benefit was noted in celery, onions, and lettuce. It is said to protect the sprouting seed from attacks of certain invisible fungi which lurk in most soils, allowing nearly every seedling to reach the air. The crops also grow faster because they are unhampered by so many parasites continuing to feed on the growing roots.

August 6th, Great Falls, Montana: I was over in pretty Gibson Park observing the flowers this morning. The principal flower show was being put on by the phlox, which was at its best.

As an edging plant they have used the new Golden Gleam double nasturtium this year. When Nature rewards kind treatment of a plant by making us an outright gift of something different, a mutation, the result is always interesting, though we may differ in our opinions as to whether or not it is an improvement. While I recognize the fact that it is just as reprehensible to look a gift nasturtium as a gift horse in the mouth, personally I think I like the old single ones better. One can look down the throats of those and make sure no diseased tonsils are present. The double nasturtium I would class with the double tiger lily, interesting but adding no additional beauty to the original.

August 17th: Driving south toward the Park today from Livingstone, the mountains had an uncanny, ghostly appearance, caused by the smoke from forest fires. A small army of men have been fighting these fires in the mountains between Livingston and the Park for several days, but everything is so powdery dry, success has not yet rewarded their efforts. Usually the Park area and the surrounding mountains have plentiful rainfall even when drought grips the balance of the state, but this year apparently no favorites have been played and the state is all dry in the same degree.

Montana has made enormous improvement in its road system in recent years, its five cent gas tax giving it adequate revenue for the purpose. They now boast 1200 miles of oiled road, and this section leading to the north entrance to the Park at Gardner is part of the oiled section.

Inside the Park the road system has practically been rebuilt in the past three years, grades have been cut down and the roads widened and oiled.

I was in the Park but about five hours today as my business is confined to Mammoth and Old Faithful, so I saw only a few of the wild animals. These were confined to a few black bears; a rockchuck as they call them here, probably because they have rocks chucked at them instead of wood; and a few women. I had no difficulty



getting the two former varieties to eat out of my hand but have never had any success with the latter.

I was able to take in one matinee performance of Old Faithful, but this was rather disappointing as it seems the depression has hit the old geyser too and it seemed to have much less water to play with this year and lacked power to throw it to the usual height.

While the papers state that visitors to the Park have increased ten per cent this year, it seemed to me that I had never seen so few people there. Park authorities are already beginning to wonder how they will winter the grazing animals this year and they fear it will be necessary to slaughter many of them in order to prevent them from starving.

I went out the west entrance and passed the night at West Yellowstone, where as soon as the sun went down the weather changed swiftly from summer to early winter and one made a hurried search for coat and vest that one had not donned for weeks. Newspaper reports at the time had it that early in February the mercury descended to 69 degrees below zero here. On questioning my customer regarding this, I was told that that report was a libel on their fair city, that the real figure was 71 below zero. Others told me the mercury went to the ground which was frozen so hard it could not go farther.

August 18th, Bozeman, Montana: Today I came up through the beautiful Gallatin Canyon, where at each turn a beautiful scenic picture confronts one and where kodak minded tourists would be apt to go broke buying films.

I passed a large number of C. C. C. boys working on the roads and converting dead and down timber into cord wood. From what I saw of the boys at work, the thought intruded that if harm came to them it would not be caused by overwork. Most of them were nude from the waist up and had accumulated a rich mahogany color that would allow them to pass as genuine native Americans on any Indian reservation, provided the Indians did not consider them a shade too dark.

In my opinion the creation of the C. C. C. was one of the finest things our President has done. Heretofore all available work had been given to married men and there was absolutely nothing the boys could do but steal a car and hold up a filling station. Their presence this summer in the national forests has been a great help in keeping down forest fires which, thanks largely to them, have not been serious despite the unusually dry conditions.

It was a great relief to get into the irrigated district near here and see real crops in the shock and splendid green fields of beets and alfalfa. I was out at Trident today, the birthplace of the Missouri River, where the three pretty little riv-

ers, the Madison and Gallatin coming from the Park to the south, and the somewhat larger Jefferson hailing from the west form a combine or river trust to make for larger river business and to save labor in getting through the mountains. Lewis and Clark were there in 1805 and named the three rivers after important Democratic statesmen. If it had been delayed until this year, the names would probably be Roosevelt, Hull, and Dern. One cannot avoid sympathizing with the two stalwart captains who had so toilsomely followed up the Missouri River to this point, only to have it blow up in their faces, as one might say, and split up into three nearly equal parts.

I have had much the same experience with roads on Indian reservations, where I would be driving along confidently on a well-traveled road when suddenly it would split up into three parts, each of which ended in a track going down a prairie dog hole.

August 20th: Friend son sends this cheering crop report taken from the sometimes veracious columns of the Argus Leader: "Frank J. Huntimer of the Colton area rolled into town today with some livestock and a whale of a potato crop story.

"I've got seven acres of potatoes planted on a side hill," Mr. Huntimer explained. 'I dug into one hill the other day and nine bushels of potatoes rolled out before I could close the hole again.'

"That, true or not, is Mr. Huntimer's story and he sticks to it."

THE BRONZED GRACKLE

A. O. Stevens

The grackles are among our most familiar birds and are well known, yet there is considerable confusion regarding their name. Very commonly they are called "purple grackles," apparently because that name is given greater prominence in most books. I find also that the iridescent males often are recognized as grackles, while the duller females pass as mere "blackbirds". The purple grackle is a bird of more limited distribution, found only along the Atlantic coast from New York to Georgia. It was naturally the form met with by Mark Catesby and described in his Natural History of Carolina in 1731 as "The Purple Jack-Daw". It was not until 1869 that Robert Ridgway gave a separate name to our birds of the interior which range north to Great Slave Lake and west to the Rocky Mountains. The Pacific coast seems to be without grackles, though the Brewer's blackbirds which are also quite common in our region, takes their place to a considerable extent. Quite a few people too, wish to call our birds "boat-tailed grackles", but those are limited to the Gulf Coast region.



The large size and black plumage of the grackles seems to have branded them in the mind of most people as relatives of the crows. The best authorities, however, do not consider them at all closely related. As already noted, Catesby associated them with jack-daws, which are European birds of the crow family. It may be questioned whether this natural association is not responsible for much of the ill repute which falls upon the grackles. Certainly they are regarded unfavorably by most people.

It is difficult to say how far this general prejudice is justified. The birds congregate in large flocks, they are noisy, they do at times damage green corn and sprouting grain, they are accused of destroying the eggs and young of other birds. A detailed study by the Biological Survey, U. S. Department of Agriculture, of over two thousand stomachs showed traces of egg shells in only 37 and bones of a young bird in only one. Mr. F. E. L. Beal, author of the report and of many others of similar nature, commented that very few of the statements of the grackles' destruction of young birds and eggs were based upon original observations. Many kinds of birds do occasionally destroy eggs and young birds and grackles would be more likely to be observed in the act than would most of the smaller species. Many writers insist that the grackles are a serious enemy of the smaller birds. At least they may be a nuisance in several ways where they collect in large numbers.

Mr. Beal's report indicated that the chief damage done by them was in destruction of grain, of which corn was by far the largest item, amounting to 37 per cent of the total food. The largest part of this was taken in February and March and would be waste grain to a considerable extent. On the other hand, the birds eat large numbers of destructive insects. Grasshoppers, comprising 7.3 per cent of their total food, comprised the largest item, with May beetles second on the list.

In our own yard we find the grackles interesting and they have not shown bad habits, but we have only a few individuals at a time. They arrive quite regularly the first week of April, and during the spring they are especially on the watch for table scraps or other refuse on account of the scarcity of other food at that season. They are fond of bread and their habit of soaking the dry pieces in water is frequently observed. With respect to traps they are cautious and it is always amusing to watch them trying to reach the bread in the trap without being caught. Their most common method is to reach under the end of the drop trap as far as possible then give a sudden leap backwards. After several successful ventures they are likely to become bolder, but when a few are

(Continued on page 108)

CORES, PITS AND SEEDS

Chas. McCaffree, Librarian State Society

At the request of the secretary an attempt will be made to furnish some seasonal copy for the Horticulture Magazine which has so well represented our society. I will be pleased myself if I may render a service to the cause and to our society.

Peony Planting Due

Peony planting is seasonal during September and October with advantage in the early planting. The peony will give for the Dakotas more fine bloom than any other flower. It fits into our season and growing it shows good judgment as well as choice taste. The roots likely may be purchased this year cheaper than ever again. They are priced lower this year than for the last 20 years. Advancing costs will surely have to be reflected in nursery prices by next season. But a small stock of peony plants cost so little anyway that all who plant gardens may have some. The nurseries are offering some really thrilling club offers.

Beginners should understand: 1. Selection should be made of favorite and various colors and the range extends from the deepest red, almost black, through all shades of red and pink to pure white; 2. A long season of bloom can be arranged by selecting early, mid-season and late blooming varieties and still further extended by planting the early ones in warm places like the south side of a white house and some of the late ones in partial shade or cooler surroundings like the north side of a house, though not close, five weeks of the bloom should be possible, some late ones may be cut in bud and kept a considerable time in a cold cellar or longer in refrigeration. (I kept Sioux Falls grown blooms this early season of 1933 so we still had a bouquet on the table July 4th though it had begun to look somewhat tacky and I used only cellar storage.) 3. The roots will reward care just as will potatoes and need only the good care given potatoes; 4. The roots should be planted so the "eyes," or shoots, will not be more than two inches deep when settled. This is very important. I like to mud them in unless the ground is quite moist. Anyone who may get a bucket of water can do that. 5. The roots should be set at least three feet apart, and four is better if they are to be left for years; 6. Peonies will make a good front yard hedge, always green during the growing season; 7. All nurseries of the Dakotas have peony plants for sale, even the rarer varieties can be found at some and one has over 500 varieties, one of the important plantings of the United States. It is best to buy of your nursery where the roots will not have to be out of the ground a long time.

Iris go with the peonies nicely and may be



planted at the same time if all desired planting has not been made. These two are our best flowers.

Happy Day For Horticulturists

Both passengers and provisions loaded a dozen cars which started the second day program of the Summer Meeting, at Gitchie Manitou, Iowa's State Park, comprising the northwest corner of the state, the latter because a picnic dinner was the first event scheduled. The Hawkeyes have evidently recognized the southernmost outcropping of the Sioux Falls jasper so their own people would not go out of the state for we saw much more showy rock formations on the South Dakota side later in the day. But it is a pretty place with the timber fringed Sioux forming the state line and with several stone walls 30 or 40 feet high.

President Robertson presided at the picnic dinner and in the journeyings of the day with his usual evidences of good judgment and Secretary Vance was diligent in his efforts, especially helpful because of his thorough scientific knowledge of plants. Contest of the state flowers advertised proved double barreled, 25 states to name the flowers and 25 flowers to name the states. First place was taken by Margaret Wallner, still in the grade school, and second by Wm. Svanoe, a horticultural student at State College.

Garretson sent a very hospitable committee to lead the caravan along the hilltop state highway overlooking the Sioux Valley to the east and the Cactus Hills, of Indian interest, to the west, a pleasing sight. The Palisades with 100 foot sheer rock walls topping the Splitrock River were visited first with particular attention given to the impressive King, Queen and Chimney rocks. This was the center of the gold rush 40 years ago. "Color" may still be found but it cannot be recovered profitably. Variety of the plants here would interest any horticulturist for gooseberry, fern, lily of the valley, poison ivy, oak, hackberry and beech were crowded into a space only a rod square. The Garretson people piloted the visitors to the famous Devil's Gulch of plum rock walls from 60 to 100 feet high with the gulch so narrow that Jesse James is reported to have jumped his horse across when he was cornered by officers. Displayed also was the big dam constructed this last winter with relief money, of solid stone resting on the natural rock foundation for the 300 feet of its extent and meeting the rock at both ends. It makes a fine lake, amply used this 103 degree afternoon.

Dell Rapids Next

Our hosts conducted to their fine little city which is not surpassed in our state for some extensive and artistic construction with cobble stones and its finely arranged home grounds,

promoted by the Dell Rapids Flower Society with a decade of successful history. Mayor Henderson and the President, Mrs. Olson, of the Garden Club, and other interested citizens directed to the Dells, which with the Palisades near Garretson should certainly be included in the state park program suggested by Dr. Hansen and forwarded by President Robertson at the Sioux Falls meeting. The mayor gathered the visitors out on a few acres platform of the jasper rock which the cleft bounding the channel of the Sioux shows to be at least 75 feet deep. With this firm foundation he invited the society to choose Dell Rapids as the meeting place next January, which the executive committee later accepted.

Trip Ends at Nursery

The program was to close with a visit to the Dybvig Nursery near Colton and not only the participants of the day trip were there but several other auto loads joined in the drive about the nursery, inspecting a few hundred thousand ponderosa pine, more than a hundred thousand lilies and other products which this nursery grows for wholesaling to nurseries further east, particularly evergreens for which it has established a reputation. Most striking at the nursery is the double row of Black Hills spruce with branches spreading about 30 feet and the picnic tables spread under the arch of the long branches whose tips touch the ground. No direct sun ever gets inside that shelter. On these tables Mr. and Mrs. Dybvig with the help of the older of their nine very attractive children served a fine picnic supper. H. N. Dybig, present owner, was born on the place and grew up in the nursery conducted by his father until he took it over some fifteen years ago. He spoke of the big spruces with so much pride that some assumed he had planted them. His mother heard this with what seemed a wise smile. Questioning her brought out that he could not have been over three years old when they were planted and digging the prairie sod would have been a rather a severe test even for one with his abundant energy, in fact they may have been in before his time altogether.

A short meeting of the executive committee members present was held just as the shadows from the tall evergreens began to stretch far out and the genial Dr. Ross invited the society to hold the summer meeting next year at his town, Milbank, which was promptly accepted. The cars started in all directions, north, east, west and some back to South Sioux Falls, the starting place for a very enjoyable day to the group, congenial on the subject of horticulture.

* * * * *

Secretary Vance writes that he recently called on President Robertson at his Hot Springs orchard and found an apple crop of about 6,000



bushels maturing with no hail this year. Mr. Robertson's State Fair exhibit this season should surpass his usual fine showing. It is too bad we can't all visit his orchard and sample the wealthies and McIntosh reds.

* * * * *

A large grower of tomatoes in southeastern South Dakota states that Prof. Yeager's new Bison is the best tomato for this state and there is no need for any other. Ours are going strong this last of August, better than the four or five other varieties.

* * * * *

The Purdue Experimental Nursery has again demonstrated that cultivation of the windbreak pays. In a four year test the cultivated section had twice as many trees alive as the uncultivated plat and those trees which had been cultivated were two years ahead of the others. But cultivation should be shallow. Another thing: in a comparison of two year seedlings and four year transplants the four year trees grew more rapidly and a higher percentage survived.

* * * * *

Another drive last month up above timber line in the Wyoming Rockies brought reminder of the persistence shown by the evergreens. When the cold and the wind are too severe to allow them to grow erect they send their branches in all directions only a couple of feet from the ground, spreading 20 to 30 feet. The spruces and cedars clothe the richest valleys of the mountains, dig in on the most exposed, most bleak rock walls and finally at high altitudes they are the last to yield in the advance toward

an impossible climate. No other trees have given a better account of themselves in the exceptional dry weather during the last few years. Who raises an evergreen plants a monument to himself.

* * * * *

Our Dr. Hansen is receiving delayed recognition now for introducing the Crested Wheat Grass from the eight inch rainfall region of Siberia something like a quarter of a century ago. The dry seasons of this western country are bringing a demand for it now. The present price would indicate a profit in producing it for two pounds cost me 92 cents last spring. His getting that grass was an inestimable service to our country.

* * * * *

How about some new tulips next month's issue?

* * * * *

Any inquiries or suggestions which will help make this an interesting column will be greatly appreciated. What is the news of horticulture in South Dakota?

PLUM POLLINATION STUDIES

By Professor W. H. Alderman and Ernest Angelo
Division of Horticulture, University Farm

Paper No. 284 of the Miscellaneous Series of the Minnesota Agricultural Experiment Station, August 1, 1933.

It has long been known that both hybrid and native plums grown in Minnesota are self-sterile and require cross pollination to produce fruit. After the improved hybrid varieties had been grown a few years it became apparent that they were not only self-sterile but in many cases, were cross-sterile as well. Since varieties that had appeared to be mutually inter-fertile in breeding experiments in the greenhouse failed to successfully pollinate each other in the orchard it became apparent that practical pollination studies must be carried on in the open under natural climatic conditions. Preliminary tests in 1930 and 1931 were unsuccessful because of adverse weather conditions but during the last two years successful studies have been made with a large number of combinations.

The chart gives a graphic summary of the pollenization work done in 1932 and 1933. Additional data have been secured with regard to a number of other varieties which have not yet been introduced. These data are included in the present report but the information will be available as a guide to nurserymen and fruit growers whenever these new varieties may be introduced.

An inspection of the chart will readily show that nearly all the commonly grown hybrid varieties are entirely worthless as pollenizers. Important exceptions to this are Toka, Hanska, and Kaga which are listed as good pollenizers for a few of the hybrids. Upon the other hand the native varieties De Soto, Surprise, Wolf, and Wyant are excellent pollenizers for practically all

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THE MANDAN NURSERIES

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the large fruited hybrids, and New Ulm and Rollingsstone are nearly as good. It is probable that most of the native plums either wild or cultivated will prove to be good pollenizers.

An outstanding exception among all the varieties studied was Goldenrod, which failed to produce a single fruit although 26 pollenizers were used upon it. This variety, in its present location at the Fruit Breeding Farm, has never produced a crop but formerly in another orchard it set fruit reasonably well. It is to be hoped that ultimately a satisfactory pollenizer may be found for this variety.

Plum-Cherry Group

Among the plum-cherry hybrids it is evident that Compass and Nicollet are the best general pollenizers for all members of the group which have been studied thus far. An interesting blossom condition was discovered in the Nicollet which may explain the cause of the frequently reported cases of failure of this variety to produce satisfactory crops. On short and weak growing branches the pistil (female part of the flower) was missing in nearly 90 per cent of the blossoms but on strong growing branches the blossoms were perfect and appeared to be stronger. Maintenance of a vigorous shoot growth on this variety may be necessary for successful fruit production.

The time of blooming is an important consideration in cross-pollination because the varieties concerned must obviously be in bloom at the same time. In northern Minnesota this factor loses some of its significance, since in that latitude the sudden transition from winter to summer tends to force all varieties into bloom at the same time. In the central and southern part of the state the spring season is more extended and varieties tend to group themselves into early, mid-season, and late bloomers. Of the large fruited hybrids Radisson, Superior, and Fiebing bloom early while nearly all the others would be classed as mid-season. Hanska, Kaga, and Toka have a blooming season which overlaps on both the early and mid-season groups in the latitude of the Twin Cities. Assiniboine is a native variety of the Canadian species *Prunus nigra* and blooms very early. This and probably other varieties of the same species are particularly valuable as pollenizers for Superior and Radisson. Upon the other hand varieties derived from our common wild plum *Prunus americana* (De Soto, New Ulm, Rollingsstone, Surprise, Wolf, and Wyant) bloom later and in northern Iowa are said, in normal years, to be too late to be satisfactory pollenizers for the general run of hybrid varieties. At the Fruit Breeding Farm their season overlaps with all except the earliest blooming hybrids. For the southern districts it is suggested that Hanska, Kaga, and Toka may

be used in place of the natives. The plum-cherry group in general are late bloomers although there is some variation with Sapa blooming about mid-season.

Varities Pollinated

Pollenizers	Elliot	Goldenrod	Hennepin	La Crescent	Mendota	Monitor	Radisson	Red Wing	Superior	Tonka	Underwood	Waneta	Nicollet	Oka	St. Anthony	Tom Thumb	Zumbra
Anoka		P															
Assiniboine	F	P															
De Soto	G	P	G	G	G	G	G	G	G	G	G	G	G	P	P	F	G
Elliot																	
Fiebing																	
Goldenrod																	
Hanska																	
Hennepin																	
Kaga																	
La Crescent																	
Loring																	
Mendota																	
Monitor																	
New Ulm																	
Pembina																	
Radisson																	
Red Wing																	
Rollingsstone																	
Superior																	
Surprise																	
Toka																	
Tokata																	
Tonka																	
Underwood																	
Waneta																	
Wolf																	
Wyant																	
Compass																	
Nicollet																	
Oka																	
Sapa																	
St. Anthony																	
Tom Thumb																	
Zumbra																	

G—Means good pollenizer; F—fair; and P—poor.
—Minnesota Horticulturist.

THE BRONZED GRACKLE

(Continued from page 105)

captured, they shun the place for a time and rarely is an individual caught the second time.

The nests are rather bulky affairs composed chiefly of sticks, strings, and other rubbish. They share the misfortunes of other species in becoming entangled in the strings. On one occasion we discovered a female caught in a tree near her nest in this manner. She was banded and released to be found dead the next spring within a few rods of the same place. She had escaped further misfortunes for an entire year and returned to the same place only to fall a victim of unknown cause. Another bird found hanging in a tree across the street, was also one which we had banded the previous year.

The eggs are a little more than an inch long, green or bluish, spotted with brown. During the nesting season the pairs may be well distributed, but when the young are able to travel the birds largely disappear from our yards. About the first of September we see them gathering together in large flocks and moving toward the southern states where they spend the winter.