

NORTH AND SOUTH DAKOTA HORTICULTURE

SEPTEMBER 1936



AGED COTTONWOOD TREE, NEAR BATHGATE, N. D.
SAID TO BE THE LARGEST TREE IN THE STATE.

634.05
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THE NIGHTHAWK



O. A. Stevens

Among the younger generation, at least, I have found frequently an idea that a nighthawk is a kind of hawk and feeds upon mice and other small animals. Such is far from the case, though they are considered to be somewhat closely related to owls. They are expert fliers and pursue their prey in the air. The prey consists of mosquitoes and other small insects which are scooped up in large numbers by the peculiarly wide-spread mouths of the birds. Grasshoppers, May-beetles and other large insects are often taken but flying ants and mosquitoes are among the main items.

The Old World relatives of the nighthawk are known as goatsuckers from a very old notion that they actually did feed upon goats' milk. Probably they were attracted to the vicinity of the flocks by the accompanying insects. The group as a whole contains more than 100 species, widely distributed. Two species and several geographical races of nighthawks are found in North America, extending all over the continent excepting the most northern part. In winter they are found over a large part of South America, thus traveling farther than most of our common birds. In keeping with their insect feeding habits, they do not reach our latitude until about May 20, the beginning of the frost free period.

The nighthawk has no song but a sharp call note which I used to think sounded like "speak." It is also described as a nasal "peent." The birds are not often seen flying in bright daylight, but usually, in early morning, toward dusk or on cloudy afternoons, or are heard after dark. Their swift and irregular flight, together with their size and sharp pointed wings, makes their identification easy. At times in their flight they take a sudden drop downward, checking themselves suddenly in an up turn with wide spread wing-feathers, the air rushing through the wings producing a loud booming sound. Was this the inspiration of the nose-dive of the aeroplane?

These birds are at home in both the country and the city. Their natural nesting places are on the ground or on flat rocks. No nest is made, but two eggs laid on the bare surface. The eggs are dull white, evenly marked with small spots or blotches of brown. They are elliptical in shape, about one and one-fourth inches in length. Frequently the nests are on flat, gravel-covered roofs of buildings, where the eggs are exceedingly difficult to detect among the stones.

In their behavior, as in their travels, the night-

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hawks are birds of extremes. Either they are very active or very inactive. In the open country, one finds them during the day dozing upon a rock or fence post. They seem so unconscious of their surroundings that one is always tempted to see if he can pick them up, but somehow they manage to come alive soon enough to dart away in their usual rapid fashion. In the migration season, a bird may be found on a limb of a tree or the roof of a building, remaining perhaps for several hours. Many times I have seen them thus on and about my house in town, once on the roof of an auto which stood in the street. Migrating groups of birds are often seen flying southward in late August or in September.



NORTH DAKOTA STATE HORTICULTURAL SOCIETY NEWS LETTER



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

The joint meetings of the North and South Dakota State Horticultural Societies, held August 20-21, were on the whole very successful. While the attendance was not as large as it might be, and we missed many familiar faces, we feel that the program was high class; and the exchange of ideas made informally was perhaps still more important. As usual, the attendance of local people was comparatively small. At the banquet, which was attended by about 75 people, an Honorary Life Membership in the North Dakota State Horticultural Society and the Oscar H. Will Memorial Medal were presented to Professor C. B. Waldron for outstanding service in horticulture. The tour was also attended by about 75 people. The meeting place for 1937 was left for the executive committee to select. Officers elected for the coming year were George Will, Bismarck, president; Theodore Piper, Durbin, vice-president; B. L. Schmidt, Lark, second vice-president; E. L. Shaw, Fargo, treasurer; and A. F. Yeager, Fargo, secretary.

Despite a record breaking unfavorable season the Garden Show staged by the Fargo Garden Society was surprisingly good. I am sure few people realized that so much good quality garden produce was to be found. The visitor who travelled the longest distance in order to attend our meetings was Mr. C. V. Porter, Menomonie, Wisconsin, who is a rather frequent visitor at our meetings. The secretary's report showed a considerable increase in membership from last year, and the treasurer's report a slight increase in the reserve.

If you have tiger lilies you have perhaps found small dark colored objects on the stems or on the ground near the plants and you may, as one of our friends did, consider them to be seed. In reality these are modified buds from the axils of the leaves, or really tiny bulbs. If they are slightly covered with soil and watered they will produce new plants. However, they should not be stored because they will dry out and die.

This year, especially, our tomatoes have showed the effects of heat by dropping their blossoms. During the periods of very high temperatures examinations of the plants showed that the stamens had shrivelled and contained no pollen. Thus, while the blossoms, unless examined closely, appeared to be abundant, in reality there was no chance at all for fruit to set any more than there was on corn on which the

tassels had been burned by the heat. When the weather became cooler, normal blossoms developed and most plants are well covered with fruit now. In our patch this has been a rather two-crop tomato year: the first extremely early crop which began ripening early in July, followed by a month when no tomatoes were present, and now the extremely late crop which may or may not mature. If your tomato plants have a good set of green fruit, we believe it would be well to cover the plants during the first frost period. Very often, after the first killing frost there is a period of several weeks when plants untouched by the frost continue to grow and ripen their crops. One Bison tomato field in 1935 which set its fruit almost entirely in August set such an abundant crop that a picking of 250 bushels per acre was made at one time in September.

GROWING THE JERUSALEM ARTICHOKE is the title of U. S. D. A. Leaflet No. 116. Incidentally, if any of you folks planted Jerusalem artichokes this year, we would like very much to get a report from you on their behavior and yield. If you did get a yield, were you able to sell the crop? This last is perhaps the most important point of all.

Last spring the North Dakota State Horticultural Society invested in a pound of Carpathian English walnuts, the hardiest known of this class, which were planted to get young trees for distribution. I am glad to report that there are 41 seedlings of this lot. Of course, it is rather doubtful whether these plants can withstand our winters, even though some of them do survive in Wisconsin. But we believe they are worth a trial at least. Speaking of nuts, we notice that while the black walnut is keeping its crop to maturity this year, all the butternuts have fallen off. Apparently the butternut, while cold resistant and an early bearer, does not seem to take so well to the heat and drouth.

From the breeding plots of the experimental grounds at Fargo five apricot selections were made this year for testing under propagation. Up to date, six grapes have been selected from the wild grape crosses for further testing; three of these are white, and three are blue.

It is now evident that some of the killing of plants during the summer was due to extremely high temperatures rather than drouth because plants which lost their leaves during the hot weather, as did most of the gooseberries, have now leaved out again. Even some of the evergreens did this.

While our apple orchard is mostly a sorry sight this summer, it is interesting to note the

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A STUDY OF THE EFFECT OF DROUTH ON TREES

Dr. E. N. Munns

The 1936 drought is one of the most serious and widespread the nation has ever experienced. Not only have there been untold suffering by the local residents and terrific losses in crops, but other forms of life over considerable areas are showing the effects of abnormally high temperatures and deficient precipitation. Just how serious some of these effects are remains to be seen.

In forestry and plant ecology, droughts are of considerable significance because of their effects on survival, growth, and behavior of trees and shrubs. Some species or individuals may be killed, others suffer severe injury, while still others may show remarkable ability to withstand the most adverse conditions. In times of severe drought, forest plantations suffer severely especially those composed of species not native to the locality or those badly abused as by grazing. In addition many native species that have been slowly invading drier sites or localities may be eliminated over large areas.

As information on drought resistance of trees and shrubs is sadly lacking, the present affords an unusual opportunity to obtain data of outstanding value. Consequently, it is hoped that those who are in a position to do so will take notes on the reaction of various plants to the drought. Such information is not alone of scientific interest but has great practical value in many current operations such as the reforestation program of the CCC, cultural operations in the forest, erosion and flood control, etc.

The Forest Service is undertaking the collection of data on the drought damage. In this it is seeking the aid of botanists, agronomists, foresters, meteorologists, and other interested individuals throughout the drought area. Consequently, anyone with observations on species behavior should communicate them to the Division of Silvics of the Forest Service at Washington, D. C. Data are desired especially on such features as the nature, extent, and character of the damage, the relative resistance of trees growing on different sites, the comparative ability of native and exotic trees to withstand drought and the nature and extent of the damage to stands or to shade or ornamental trees, shrubs, etc. A questionnaire covering these points has been drawn up to aid observers in reporting the effects of the current drought.

(Editor's note: We hope to hear from as many as possible of our readers in regard to the above and these reports will be relayed to the proper authorities.)

NORTH DAKOTA NEWS LETTER

(Continued from page 99)

relative ability of some few to withstand the extreme cold of last winter and the extreme drouth of this summer. Two of our crabapples, Dolgo and Florence, belong in this class; and Florence is one of the very few crabapples bearing a crop this year. Our old friend Whitney also seems to have the ability to take more than the rest so far as cold is concerned, as most of these trees have a fair crop. Large apples such as Anoka, Hibernial and Duchess are in very bad condition. Whether many of the trees will ever recover is a very serious question. In contrast to this condition of the apple trees, the apricots made a good growth and have had very beautiful green foliage.

This last year was a disastrous one so far as the transplanting of gooseberries was concerned. Neither fall nor spring plantings prospered. I am inclined to believe that much of the killing was due to the extreme heat this summer rather than to drouth. On the other hand, raspberries set last fall managed to make a fairly good stand despite all the grief. I believe it is safe to recommend fall planting rather than spring planting for these berries, especially if there is any moisture in the soil and the variety is hardy.

A friend from Nebraska asked whether there is a vineless muskmelon, watermelon or squash similar to the vineless cucumbers we spoke of sometime ago. Of course, there is a vineless squash represented by the bush squashes of summer, and we have heard of vineless muskmelon though we have not seen any. If there is a vineless watermelon it has escaped our attention to date.

Canadian seedsmen have been very much impressed with an edible soybean variety introduced by our Office of Foreign Seed and Plant Introduction as No. 81037. They had proposed such names as "Cat-eye" and "Fish-eye" for it, but our suggested name of "Agate" will quite likely be substituted and the variety made available soon to growers. The Canadians claim this variety is not only early but very drouth resistant and a heavy yielder.

Planting of small seeds like the primulas, digitalis, etc., may be facilitated by mixing them with ordinary talcum powder. Talc coated seeds become very conspicuous against the dark background of the soil, and are more evenly distributed uniformly. Such treatment is also beneficial to those seeds which have a high moisture content and are therefore liable to the development of mold. The talc treatment apparently has no adverse influence on germination, and it does accomplish the purposes above mentioned.—E. A. Merrit in HORTICULTURE.



PRESIDENT'S CORNER



F. X. Wallner
Sioux Falls, S. D.

In Tift County, Ga., was grown an enormous watermelon that has won several prizes in contests; it weighed 100½ lbs. That the south can do even better, we are assured in a recent news story of an Arkansas melon that weighed 125 lbs., and that cost its purchaser over \$20 to ship to his son, in a northern city. It is to be hoped that the boy had enough watermelon, for one meal at least.

If resolutions adopted at a recent meeting between the Chain store organizations and the National co-operative Council mean anything, Chain stores are going to discontinue the practice of using vegetables as loss leaders for the purpose of luring customers into their stores. Members of the Wholesale Fruit and Vegetable industry have for years deplored the practice, because it has depressed the market for the growers and has caused untold loss to producers as well as wholesale distributors who had to meet this unfair competition. The greatest benefit will come to the farmer who actually grows the produce and the distributor will not be forced to depress prices paid to growers in order to meet "loss leader" competition.

The Chain stores promise further reforms in the conduct of their business, as they agree to abide by the new Robinson-Patman Chain store law, just enacted by Congress.

A new fertilizer is expected to be shipped to this country next year, from Argentina, made from the ruthless destroyer of crops, the locust. It takes about 3 tons of locusts to produce one ton of high grade locust meal containing 9.66 per cent nitrogen and 12.40 per cent nutritive fats. The hoppers that are all over the garden, yard and shrubbery look fat enough to make good fertilizer, if we could only get them into a furrow and cover them up.

On July 27th, the warning was flashed by radio that late blight was increasing very rapidly in the potato section of Maine. One big grower, with an acreage of a thousand acres, got busy with two airplanes and dusted 70 acres of certified cobbles in less than 45 minutes. Fifteen hundred potato growers from all over the potato growing section gathered at 6:30 a. m. to witness this new way of combating blight in a hurry. The big growers were so thrilled with this first test, that another big grower in another county had his 60 acres dusted by 8 a. m. A little later

in the day, another 100 acres was dusted. The two planes expect to be kept busy dusting potatoes for the rest of the season. The expense is no greater than that of tractor dusting and it is done at once, or in a fraction of the time and there is no damage to the vines, while tractors damage the vines to the extent of 7 barrels per acre, but it is risky business flying only 5 feet above the vines at a 75 mile per hour clip.

Nurserymen of Texas have shipped 4 carloads of three year old seedless pink grapefruit trees to old Mexico in July and they look for a big increase in this item, in the future. The grapefruit now grown in Mexico is from local seedling stock and is inferior to the new Texas varieties.

Our tomato trial plots give a big surprise to everyone—some plants loaded with fruit, others with not a fruit on the vines. There has been very little sunburn, despite the high temperatures. Most all small vine types are covered with blossoms, while the large type vines are shy blossoming and shy fruiting. There are only about 6 varieties that are outstanding, among the 25 or more tested this season. No variety is bearing good fruit that has not had water once or twice a week.

Some one asked me a few days ago if I did not have another good garlic story, so here is the best of all, and I wish I was able to cash in on it as another party did, or tried to. A few years ago a party advertised in a national journal that for \$5.00 he would send the secret of how to make the garlic grow in one large bulb, instead of 12 to 20 small cloves in the one bulb. I thought it impossible, so did not part with the \$5.00 to find out, but last year I grew 2 plants of small top sets, smaller than peas. These sown thin in rows are producing bulbs almost as large as the 12 to 20 clove bulbs, but are in one solid bulb, like an onion. The secret is how to produce the little top sets.

The first "Exposition of Horticulture" will be held in Chicago, Sept. 12th to 20th, in conjunction with the International Live Stock Show. Horticultural groups and organizations hope to do for horticulture what has been accomplished for animal husbandry. The U. S. Department of Agriculture and most all of the Agricultural Experiment Stations of the United States and Canada, as well as many State Horticultural Societies, National Nurserymen's Associations, National Gardeners Societies, all the different National Flower groups and Fruit organizations are back of the movement.

Apples and other fruit, including tomatoes, will be only half a crop or less, in all states except Oregon and possibly California, due to the widespread drought and winter injury of the trees.



THE USE OF NATURAL ROCKS

R. A. Dunham, Jr.

A geologist would question the title of my paper by saying that there is no such a thing as a natural rock in this part of South Dakota for the rock found here is almost entirely of glacial deposit, which is not and perhaps cannot be denied. As a consequence the title should be Rocks and their use in the rockery or rock garden.

I first became interested in gardens and flowers some few years ago as an avocation or hobby to keep my mind out of mischief when not occupied by the duties of my vocation, the practice of law. Since then I have studied and experimented with flowers, plants and gardens and especially rock gardens and its plants until I have become so tremendously interested that I sometimes wonder if the garden shouldn't be my business and the law my hobby. But when I realize that, as someone has said, a horticulturist is one of God's noblemen, perhaps it's best for me to stick to my profession, but the garden I trust will always be my hobby.

Often, I have felt that it is essential to human happiness for one to have a hobby. Take the hobby of our former justice of the Supreme Court, Oliver Wendell Holmes, one of the ablest and highest respected of all who have sat on the Supreme Bench. A man who has written opinions second to none. His hobby was the reading of dime novels. Senator Dickinson of the State of Iowa. His hobby is gardening. I don't know anything about the Senator, his political viewpoint or his reputation. But I do know, if he's a gardener, he must have a lot of good to him. But it's a real pleasure to have a hobby of flowers and gardens. To study God's ways in nature. It affords us amusement and relaxation. It makes us new and different friends. It makes us interesting to other people and interested in life. It makes us forget the unfortunate and unhappy occurrences of the day in routine business. Many times I have left the office because everything seemed to go wrong during the day, to work among my flowers and it seems that just the association with nature's flowers and plants gave me a better and happier outlook to start the next day. But enough about that for my subject is Rocks.

Rocks in the garden are of two types. First, those for use in the rockery, rock wall, tower or outdoor fire place and any other project in which the rocks are used as the central object. The second type of rock for gardening is that used in the rock garden or natural garden, a garden where one is attempting to avoid the artificial and imitate a landscape of nature. To one who finds a particular fascination in rocks and stones,

their formation, structure, color, etc., the first type has its appeal. The latter type appeals particularly to the person who realizes that the presence of a rock is essential to some plants, such as alpinists which in nature live from the moisture it obtains from the rock.

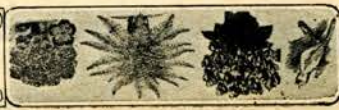
There are many beautiful, colorful and peculiarly shaped rocks and stones that can be used to advantage in a rockery where the stress is laid upon the rock rather than the flower. Take for instance the rockery of the gas station manager of Dell Rapids. He has used rock as the basic feature of his rockery which represents in miniature the Black Hills of our state. His rockery, in my estimation, is perfection.

Rocks have a certain beauty and mystery about them. To some a rock is a rock. To others a rock is a thing of beauty and a mysterious creation of nature just as a flower, a tree or a blade of grass. Our Black Hills have many beautiful rocks and stones, particularly in quartz, rose and white.

To me every rock is a mystery. I look at a rock and try to visualize in my mind just how that particular rock was created. For instance, take this piece of what I call my picture rock. It was formed by the action of manganese seeping into the rock and leaving its deposit. Later when the rock was split the resulting landscape picture appeared. Petrified wood is a mystery to me. I had always presumed that petrified wood was formed by the turning to stone of a piece of wood. But it is not. Wood is vegetable matter as is a flower and is perishable. The petrification is the process of replacement of the organic tissue by mineral substance. As such particle of the plant decays it is carried off in the form of gas and its place is then taken by a particle of imperishable stone which preserves even its structural appearance and the result is petrified wood. To me there is a fascination in knowing that fact and when I look at a piece of petrified wood I try to imagine the forces of nature that created it.

But a rock garden. One should think of a rock garden as a natural garden, an imitation of nature itself, with its trees, rocks, mosses, lichens, grasses and flowers. In order to visualize the proper rocks for a rock garden, I quote with respect the definition of my friend and advisor Mr. J. E. Mitchell, an enthusiastic rock gardener and nurseryman of Barre, Vermont. He says: "A rock garden is man's feeble attempt to imitate on a small scale, the glorious majesty and beauty of a mountainside." If this definition is kept in mind when one is planning and constructing a rock garden the result can be but an imitation of a picture that only Nature could paint. In a garden of this type, Nature would

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HORTICULTURE

NORTH DAKOTA SOUTH DAKOTA



FROM OUR MAIL BAG

Our mail bag bears evidence that July and August are slack months in garden work. Very few inquiries of general interest have been received. No doubt extreme drouth has lessened the garden enthusiasm of many people.

After attending the meetings and banquet of our Horticultural Society, I could not however help but feel that it takes more than adverse weather conditions to break the spirit of the true garden lover. Mr. Hilborn, as toastmaster at our banquet, regarded horticulturally minded people as missionaries. Indeed they are missionaries spreading the garden spirit. By means of their work and through their enthusiasm, they gain many followers. I believe that the program of our banquet and meetings was an expression of faith in the horticultural future of our state. Certainly horticultural faith was severely tried this year by the prolonged period of heat and drouth. Undaunted by adversities, these gardeners are already planning their program for 1937.



Victor Lundeen

Miss Grace Peterson has sent us a description and sketch of their irrigated garden. She reports a good crop of tomatoes and ground cherries. After seeing some of the quality vegetables displayed at the Fargo Garden Society Fall Show, we are convinced that most garden crops do exceptionally well in North Dakota when generously supplied with water. Of special interest was the exhibit of vegetables from the irrigated gardens of Mr. Carl Houkum near West Fargo.

We have a request for information in regard to fall planting of onion seed. This is not a practise to be recommended for North Dakota. Early spring planting is more successful. If fall planting is practised, it would need to be done just shortly before freeze-up so that the seed would not germinate until the following spring. Then too, early growth in the spring is endangered by alternate freezing and thawing to such an extent that the crop may be completely destroyed by the unfavorable weather conditions. It is best to delay seeding onions until April 15 or later when weather conditions are favorable.

We have a report from Mrs. P. W. Peterson of Aneta, N. D. stating that she had heard that the N. D. A. C. had announced chokecherries as being poisonous this year. We know of no such announcement and believe that chokecherries and other native fruits of this year are as desirable as ever for use in jams, jells and sauce.

Bargain Offer

ORDER DIRECT FROM THIS AD

Coral Lily, this is a beautiful rock garden Lily and can be planted any place in the border. Blooming size bulbs, \$1.00 per dozen prepaid.

Regal Lily, Henryi Lily, Umbellatum Lily, Tiger Lily, Single and Double, all large blooming size bulbs, 25c each; \$2.50 per dozen prepaid.

Chinese Elm Seedlings Special offer, mention North and South Dakota Horticulture. Per 100 prepaid

6-12 inch seedlings.....	\$1.50
12-18 inch seedlings.....	2.00
18-24 inch seedlings.....	2.75
2-3 foot seedlings.....	3.50

DYBVIG NURSERIES
COLTON, S. DAK.

If a meager dozen of plants ceased to grow in America, our commercial beekeepers would have to go out of business. Most flowers yield little or no nectar, from which bees make honey. About three fourths of the supply is furnished by clovers.—COUNTRY LIFE.

We have been sent a watermelon seed packet on which the planting instructions caution the planter to plant it a distance from other melons, cucumbers and squashes as they mix readily. The sender inquires if these instructions are correct. Watermelons will cross with other varieties of watermelon and citrons but it is impossible to successfully cross, even by hand, watermelons with cucumbers and squashes. It is a common belief that such crosses do occur but experimental work has shown such crosses to be impossible. A statement of this kind on the part of a reliable seed company indicates a lack of knowledge concerning the melon groups. Even if such crosses should occur, there would be no effect upon the season's crop. Effects would only show up when a crop was produced from seeds which had resulted from such a cross.



SECRETARY'S CORNER

W. A. Simmons

Many people, seeking alibis for their own want of success, have intimated that anyone could raise fine fruit under the ideal conditions that exist in John Robertson's orchard. To give to such, a more realistic idea of those ideal conditions, here is a paragraph from a recent letter from Mr. Robertson: "Indications are that this will be one of the years when all birds, insects and animals in the vicinity will gather into the orchard for better feeding. Outside vegetation is all dried up, so living things are looking for green and tender things to feed on. Squirrels are starting to cut apples from the trees; rabbits doing more than ordinary damage; porcupines climbing into apple trees and biting and breaking off small limbs with fruit on. That is another of the many little jobs—getting out some blocks of wood with shallow auger holes filled with a mixture of salt and strychnine, for the porkers. We had trouble with a coon eating eggs and hens, that happened to nest out in the brush, finally catching it in a trap. There is plenty of the old time pests, with some newer ones for variety, but grasshoppers are most general and worst of all."

According to experiments conducted by Donald Comin, M.S., at the Ohio Agricultural Experiment Station at Wooster, Ohio, the two vegetable crops making the greatest response to the application of manure are tomatoes and cucumbers. The recommendation is made that if but little manure is available, it be used on these two vegetable crops, where the greatest profit will result from its use.

Here is an interesting letter from our old and much appreciated friend Professor H. L. Lantz of Ames, Ia. Writing under date of July 18th, to Mr. John Robertson, he says: "Emerging from our unprecedented winter into an almost unprecedented summer of heat and drought, I thought perhaps you would be interested in knowing what is going on down in Iowa. For more than two weeks we have had temperatures every day ranging up to as high as 113 here in Ames. We got almost no rain in June and none so far this month, and the drought conditions are becoming very acute. Our fruit trees came through the winter in excellent condition, although it was evident that the buds in certain varieties like Delicious and Starking were more or less injured by the cold. Varieties like Joan, Ames 471 and Edgewood all set a moderate crop of fruit. Jonathan set a fair crop and, surprising enough, Willow Twig set about the heaviest crop of all. Our trees of Ames 471 bloomed late and set quite a heavy crop. The fruit, however, is borne in bunches and really should be thinned

for best results. If we get no further rains I doubt whether the fruit will mature very well, although the orchards have been given sufficient cultivation to conserve the moisture fairly well. Sharon, wherever it bloomed, set a good crop of fruit. Hawkeye Greening bloomed fully but set scarcely any fruit at all. We have a number of wide crosses in Prunus, some of which involve peach and plum crosses. These trees in the nursery row practically all came through with little or no injury. The blooming season was rather unfavorable and only a few fruits set. We have been making a desperate effort to save the raspberry crop by irrigation, but even so, the high temperatures have reduced the yield considerably. Our good friend Dr. A. F. Yeager has been with us the past two weeks, putting the finishing touches to his Ph.D. degree work. Dr. Yeager has certainly done some fine work for the Dakotas. The vegetable crops people here have his tomato strains growing in the trial gardens, and all of them have set a fine crop of fruit in spite of the hot weather."

A shocking story comes from Missouri, according to HOOSIER HORTICULTURE for August. Here are the gruesome details: "An interesting short article recently appeared in a July issue of SCIENCE, written by Victor H. Schmidt, of Kansas City, Mo. He recently rigged up a magneto as an amusement device for administering mild shocks among the youngsters and their playmates. Later the same device was used in connection with a pair of steel rods in wet soil to make the earthworms crawl out of the soil. One day while he was engaged in a rather laborious task of digging elm borers out of a tree with a pocket knife, the idea occurred to him that the magneto might be used for that purpose too. Consequently, when two nails were driven into the bark a few inches apart in the affected area, and the nails attached to the magneto, with the turning of the crank, the elm borers came out within a very short time. Subsequently, digging in the electrically treated bark proved that the borers had vacated 100 per cent. Mr. Schmidt states that the system is much less laborious than digging out the borers and far more amusing. He believes that a magneto a little stronger than his would be very valuable to orchardists and commercial tree surgeons in handling the problem of removing wood borers of various species."

In a letter to the writer, under date of Aug. 7th, Dr. Lantz of Ames says: "During the past week or ten days I have been going over some new early apples which we have under test, and I think that you might be interested in these because they seem to be rather above the average for hardiness. Very likely, however, some

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NORTH DAKOTA BEEKEEPERS' ASSOCIATION NEWS NOTES

Beekeepers Meet at Wahpeton

Hot weather and distance seemed to be no hindrance to the fifty or more delegates who attended the summer meeting and picnic of the North Dakota Beekeepers' Association held at Wahpeton, North Dakota on July 15. A review of the registration list shows that a few came from rather distant points including Sioux City and Mason City, Iowa; and Warren, Thief River Falls, Robbinsdale, and Minneapolis, Minnesota. Most of those in attendance, however, were from southern North Dakota and adjoining area in Minnesota.

We were fortunate in having Mr. L. C. Dadant, of the American Bee Journal Co., Hamilton, Illinois, to take part in the program. In his discussion of research to determine the possibility of breeding a strain of bees which would be resistant to American foulbrood, he said that under certain conditions, some colonies have shown tendencies to clean up American foulbrood but so far the results have not yielded a "disease-resistant strain."

Mr. W. J. Braun, President of the Wahpeton Commercial Club, welcomed the beekeepers and later in the day introduced the Wahpeton "Little German Band" which furnished the music. Wahpeton can well be proud of its Band and its beautiful wooded park where the convention was held.

Mr. Norris Ellingson, of Moorhead, Minnesota, in relating his experience on the wintering of bees reported that hives packed with straw and wrapped with tar paper cover, wintered practically the same as hives grouped together and protected by tar paper only. The loss of colonies with the two methods were 15 per cent and 14 per cent respectively, which also included spring loss. Charles Engle, Thief River Falls, Minnesota, reviewed experience with Italian and Caucasian bees. He said that his Caucasians were good honey gatherers, they built up satisfactorily and are gentle bees but their only annoying characteristic is the over-use of propolis. Apparently there is not a great deal to choose between these two races. Marvin Huckle, Deputy Bee Inspector, in discussing results of apiary inspection for the past season, pointed out ways in which beekeepers can cooperate with the inspection service in combating American foulbrood. Above all, he pointed

ed out the need for careful handling of bee equipment and prevention of robbing among the bees. Disease eradication is a community problem and beekeepers must cooperate in stamping out foulbrood before it becomes widespread. He cited examples where careless and indifferent beekeepers had neglected their colonies with the result that they served as a center of spreading foulbrood to neighboring bee-yards. He especially warned beekeepers against feeding honey of unknown source to colonies and suggested that wherever feeding was necessary to prevent starvation to use sugar syrup.

Wallace Manilkowski, President of the Association, spoke of a recent trip which he had made to Texas and commented on the National Beekeepers' Meetings to be held in San Antonio, Texas, November 24 and 25. Several of the beekeepers present indicated their intention of driving down for the meeting this fall.

This past year's results with one-inch celotex insulation board as protective covering for beehives was poor as compared to that of the previous years' survival results of 90 per cent and 100 per cent respectively. This past winter, however, the survival was only 65 per cent in colonies wintered in hives covered with the one-inch insulation board and further protected with a wrapping of building paper. The heavy loss was largely attributable to the fact that workmen engaged in digging a ditch, during mid-winter, had disturbed a number of colonies towards one end of the row and it was these hives which failed to survive. It is planned to continue the experiment with the addition of other insulation board materials.

Commercial beekeepers of the Red River Valley are organizing a honey marketing cooperative and have elected Mr. Gustaf Thal of Mayville as secretary-treasurer of the organization. Mr. Perry Hemphill, extension agent in marketing at the North Dakota Agricultural College is assisting the group. The purpose of the organization is to aid in the marketing of the 3 million or more pounds of honey produced in this area.

"Package Bees and How to Install Them" is the title of a new bulletin written by C. B. Good-erham, Dominion Apiarist of the Canadian Department of Agriculture, Ottawa, Canada. It recommends the use of 2 pound packages except in provinces where the season opens late, the 3 pound size is preferable. Another recently issued bulletin by the same office is entitled "Honey and Some of the Ways it May be Used." It discusses the use of honey (Continued on page 106)



NORTH DAKOTA'S LARGEST TREE

Harry Graves

Located approximately four miles southwest of Bathgate, in an isolated spot on the banks of the Tongue River, stands a majestic Cottonwood (*Populus deltoides*) which people of that part of the State have christened with the title of "North Dakota's Largest Tree." While there may be trees that are taller, trees that have a larger limb spread, or trees with a greater diameter breast high, it is the belief of many that, all things considered, this tree is deserving of its title.

With approximate dimensions of height, 90 feet; diameter breast high, 6 feet; diameter at base, 12 feet; and a limb spread of 97 feet, the tree towers above its neighbors and can be detected for miles. Although the tree's location is such as to make it quite inaccessible, a well marked trail has been beaten to its base by the many visitors who come annually to view it and carve their initials in its rough bark.

S. W. Hodgson of Cavalier, who with his son is pictured with the tree, recalls that it was known as "The Big Tree" when he immigrated to North Dakota from Ontario with his parents in 1881. Mr. Hodgson also recalls interesting tales recounted by an early trader named Lashmaniere who passed through this territory with the long trains of Red River carts that carried freight from St. Paul to Winnipeg. According to Mr. Lashmaniere, the Indians used the tree as a landmark and camped beneath its boughs while hunting buffalo in the region. Deep trails worn about the tree by these native Bison as they wended their way from the nearby plains to the Tongue River for water could be easily discerned by early settlers.

Located on a low-lying tract of ground often inundated by floods, the Cottonwood has withstood well the years of drouth that have played havoc with so many trees in the Dakotas. Barring accidents, this patriarch of the fringe forest, of which it is a part, bids fair to serve as an object of interest for generations to come.

BEEKEEPERS NOTES

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in the making of bread, rolls, cakes, cookies, candy, ice cream, marmalade, fruit butters, sandwich fillings, honey icing, and the sweetening of breakfast fruits with honey.

* * *

There are more prizes than ever before to be offered in the Third National Honey Cookery Contest under the auspices of the American Honey Institute, according to an item in the American Bee Journal of the July issue. Entries

must reach the Crockett Hotel, San Antonio by November 20th. The classes include: Honey Fruit and Nut Bread; Honey Fruit Butters; and Honey Fruit and Nut Candies. Write the American Honey Institute of Madison, Wisconsin for details. The National Honey Cookery exhibit will be a feature of the National Beekeepers' meetings to be held in San Antonio, Texas, November 23-24.

* * *

Mr. Charles Houghtaling, of Emmet, (Wells County) North Dakota, reports that bees were working, in large numbers, on the bloom of water-parsnip according to a note passed on to this office by Professor O. A. Stevens. This is an interesting report as it appears that the plant has not previously been recognized as a honey plant or pollen source for bees.

* * *

To date this year Manitoba has purchased packages of bees from the United States to the extent of \$89,281 in value according to word from Professor L. T. Floyd, Provincial Apiarist of Manitoba. Other provinces follow with Ontario, \$27,019; Alberta, \$23,080; Quebec, \$19,198; British Columbia, \$11,700; Saskatchewan, \$4,651; Nova Scotia, \$422; New Brunswick, \$284; and Prince Edward Island, \$17.

* * *

Any beekeeper interested in a time saving method for removing bees from honey supers should read the article entitled: "Carbolic Acid Method of Removing Surplus Honey" written by Dr. W. E. Dunham of Ohio. You will find the article on page 492 of Gleanings in Bee Culture of the August issue. Here are the advantages which he cites for the method: "It avoids lifting supers twice; it is a great time-saver as the bees are driven out of the supers almost instantaneously; it necessitates only one trip to the apiary for the removal of the crop; and it prevents any "rob outs" which occur in the bee-escape method when supers are not bee-tight. It is economical, as a one pound bottle of crystals is sufficient to remove several thousand pounds of honey." Care must be used in the handling of carbolic acid as it may cause serious burns upon coming in contact with the skin. The details concerning the carbolic acid method of removing supers is too lengthy to be outlined here, —hence, we refer you to the article cited above.

* * *

The 1937 acreage of sweet clover bloom will depend largely on the young plants getting a good start this season. Where rainfall is not sufficient for the young plants to get established this season there will be few of the plants in bloom next year because the common sweet clovers are biennials.

then should be prepared for plants that thrive in an acid soil. For this acid bed I would suggest that soil from under hemlock or oak trees be collected or the soil treated with tannic acid or aluminum sulphate. My authority for the above statement is from Dr. Edgar T. Wherry, of the Bureau of Chemistry, in an article entitled "Cultivating Wild Flowers," he says: "While our most vigorous wild flowers are relatively indifferent to the chemical character of the soil and will grow almost anywhere, the delicate ones that are most admired for their beauty (and are most likely to be exterminated by careless picking) are extremely sensitive in this regard. Some grow best in soils that are acid, some in soils that are alkaline (the opposite of acid) and still others in neutral soils (neither acid or alkaline.) Before such plants can be successfully grown in cultivation, it is necessary to ascertain their soil preferences and to adjust the acidity of the new location accordingly." I had always presumed that the beautiful rododendron and mountain laurel would not grow in this country, but an experiment in drainage and soil acidity proved to me that this contention was wrong.

These few suggestions, I trust will be helpful to you if and when you should build your rock garden. Of course, the building of a rock garden is a matter of choice of the individual, whether it be a rockery, a stone wall garden, a rock garden, a wild garden or a natural garden and will be, when completed, your ideal conception of a rock garden.

There is no truth in the old belief that cucumbers contain a poisonous juice which can be counteracted by soaking them in salt water. The soaking merely wilts and toughens them.—COUNTRY LIFE.

Food as well as drinks for crops now flows in some irrigation ditches in southern California. A little ammonia gas is mixed with the water, and extensive tests have shown that plants thrive better on this liquid diet than on solid fertilizer.—COUNTRY LIFE.

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have porous rocks to hold the moisture for the wild flowers which entwine their roots about the rock. It would have the homely rocks, covered with lichens and mosses which scientists tell us is nature's way of changing that rock to new soil and furnish life to its flowers just as the mosses that collect on the dead logs are at work returning to Mother Earth the materials the tree-children took from her years ago. These weather-worn rocks are ideal in Nature's garden.

In the past five or six years that I have worked with my rock garden, I have been as any gardener, always realizing mistakes in my garden and ever changing it from year to year. I have felt when preparing this article that if I might point out a few fundamental principles in constructing and maintaining your rock garden, then this articles might be acceptable. I realize that in doing so I will in a sense be getting off my subject but being a lawyer it probably would be expected.

First, plan your rock garden. Make a rough outline to show where your mounds are to be, where you will place your large rocks, your irregular pool. Generally, decide in your own mind what your efforts will result in.

A rock garden can be built on level ground, although it should have some sort of a slope to obtain the desired effect. On level ground if I were planning a rock garden, I would excavate from two to six feet deep and throw the dirt in a high sloping bank on three sides. The bottom of the excavation should be flat with an irregular pool in the center, or if a pool is not desired a nice specimen evergreen in its place. The entrance should always be from the open side.

In so constructing a rock garden of this type it is vitally necessary to construct a form of drainage. Drainage is absolutely essential to the existence of the rare and beautiful wild and alpine plants which are used in the garden, the same as is the case in the plants' natural habitat. I would suggest that a layer of drainage material for sub-irrigation, such as small stones, sand, cinders, or coal ashes be spread over the banks of the slopes in the stage of the construction. Ten or twelve inches of growing soil should then be placed on this drainage layer. The moisture will then pass through the soil to the drainage layer to be carried off or retained according to the angle of construction.

Bear in mind also the fact that alpine plants thrive best under certain soil conditions, some in alkaline, some in neutral and some in acid soil. If they are planted in soil that is not to their liking they literally go on a hunger strike and perish. A certain portion of the rock garden

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USE OF ROCKS





UTILIZING TIN CANS

John S. Robertson

Tin cans may be put to many useful purposes instead of being cast aside in the dump. Many persons are using them to advantage; but it is to others who may not have thought of the advantages of using tin cans in connection with the transplanting of certain plants, that I am writing this short article.

Many different devices are on the market for protection of newly set plants, but I do not know of anything that has much advantage over the common tin can, that can be had comparatively free. The gallon size is best with most plants, but the quart and other sizes may be used according to the division of plants being grown. It is a good idea to procure the cans some time ahead of the time they will be needed, and cut the ends out neatly so they will be ready for use. If taken care of during the period of each year they are not in use, they will last for several years.

There are many different kinds of plants that it pays giving protection for a period after transplanting to the field. This includes vegetables, flowers, and fruits such as strawberry plants; but in this we will have in mind the tomato principally, because it is most commonly grown.

As each plant is set, have a can ready to place around it. The can should be pushed into the ground an inch or two, and at an angle that will protect from direct rays of the sun. In a few days the can should be straightened up and set so the plant is in the center. Some of the advantages in use of tin cans around tomato plants are, protection from winds and cold, cutworms and other insects. During a cold spell the cans may be banked with dirt, and a board cover placed over the top in case of a frosty night. However, if cutworms are numerous a part of the dirt banking should be removed soon as the cold spell is past.

"A promising new apple has been bred at the North Dakota Experiment Station by Professor A. F. Yeager. It is about the size of the Whitney crab, but is a deep red. It has excellent eating qualities. It is now known as North Dakota No. 5, but will probably be named next year, when it is hoped the variety will be ready for first distribution. The cross was originally made between the Dolgo crab and the Delicious by means of pollen obtained from a Delicious apple tree in Missouri and sent through the mail in an ordinary envelope. It was preserved for a month until the blooms of the crab were ready." — Walter J. Hunt, in **SUCCESSFUL FARMING**.

SECRETARY'S CORNER

(Continued from page 104)

of your South Dakota folks have tried these varieties, but I have not seen them mentioned in any of your literature. The Melba, one of the Canadian McIntosh seedlings, ripens just a little ahead of Duchess, but it is infinitely better to eat out of hand. It is really a very nice dessert apple. The tree has a real record for hardiness. The Early McIntosh, from the New York Station, is a delicious apple to eat out of hand and is just now about prime for eating. It has a little better color than Melba and is a little milder in flavor. We also have the Milton, which ripens about the latter part of August. It produces a wonderful tree, under our conditions, but has not been very productive, up to date. It is of excellent size and of beautiful solid red color, and the flavor is very similar to that of McIntosh. It has the fault of dropping badly. However, for a home orchard, this would not be particularly objectionable. We are enjoying some cooler weather, and a few nights ago got a half inch of rain here at Ames. However, this is a mere drop in the bucket as compared with our needs.

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