

NORTH AND SOUTH DAKOTA HORTICULTURE

JULY, 1933



State Fish Hatchery, Where Many a Sportsman's Days Pleasure is In the Making



THE KINGBIRDS

O. A. Stevens

Few birds are better known or are more characteristically American than the common kingbird. The family to which they belong is purely American and is abundantly represented in the tropical region, for only about ten per cent of the 350 species come as far north as the United States. The common kingbird's summer range extends to the southern provinces of Canada from ocean to ocean, and covers all of the United States excepting the southwestern portion from western Texas to central California. Over all this area we find the same form of the bird, no variations having been described. They retain their tropical characteristics, for their time of arrival is very close to that of the last frost and with the first frost of autumn they are gone again to spend the winter with their relatives in the countries from southern Mexico to Bolivia.

The name seems to have come from the very obvious habit of the birds to pursue crows and hawks. Linnaeus had placed them with the shrikes. Audubon called them "tyrant flycatchers" and by one of those unfortunately frequent twists of names they came to be called "Tyrannus tyrannus"—doubly tyrant. The name is hardly merited, since for the most part, they are mild and harmless. Their constant vigilance against crows and hawks renders their presence an advantage to the poultry yard as well as to the host of small birds which nest in the same territory. Thomas Nuttall, one of the early American naturalists (1830), mentioned that when the birds had recently arrived and had not established their nests, they were timid and readily chased by various other small birds.

The name "bee martin," which is so often applied to them, also seems to be of early date. Thus we find in the journal of Lewis and Clarke a note that in western Montana, "the bee-martin or kingbird is common to this country although there are no bees here." Studies of their food habits by the Biological Survey, U. S. Department of Agriculture, seemed to exonerate the birds of this charge, when the stomachs of 665 individuals yielded only 61 bees of which 51 were drones. Still there are not a few people who consider the kingbirds a menace near the bee hives. Grasshoppers, beetles, flies, moths, many other kinds of insects, and an item of ten per cent of fruits were included in the above mentioned analysis of the food eaten by the birds. Personally, I was always skeptical about the fruit for birds which are so obviously insectivorous, until I had occasion to see them swallow berries of chokecherry and dogwood. Nuttall wrote that they ate various wild fruit but would not touch raisins, grapes, cherries or other cultivated sorts.

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The nests are usually placed at a height of fifteen or twenty feet in the fork of a tree and are composed of a considerable quantity of twigs, weed stems, grass, string or almost any material which happens to be available. In the open country other locations may be utilized and nests on top of fence posts have been recorded. Mr. E. T. Judd of Cando, North Dakota, states that they frequently make use of binders or other farm implements as nesting sites. One nest which I found last summer was in a small dead willow standing in a ditch which contained about a foot of water. The nest was thus entirely exposed and was less than three feet above the water. The eggs are usually from three to five in number, white or creamy with spots of reddish brown.

Kingbirds belong to the group known as "songless perching birds." They are by no means quiet but make a continual chatter which may be decidedly tiresome if they are nesting close by. At times this note has a scolding tone, but more often it is quite without any

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NORTH DAKOTA HORTICULTURAL SOCIETY NEWS LETTER



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

The tendency among good potato growers in recent years is to use the weeder and harrow more before regular row cultivation starts, and to give less row cultivation than used to be the case. Another thing, practically all cultivation experiments show better yields from level cultivation than from hilling. Nevertheless, many growers still continue to hill their crop because some hilling tends to prevent sunburned tubers and makes digging easier. The New York

Experiment station has found that potatoes stored at 65 to 68 degrees F. for 8 to 12 days after digging keep much better and there is less rot than where they are immediately put into a temperature of 39 to 44 degrees.

The Missouri Slope Gladiolus Society will have its annual show August 18-19. Anyone is welcome to exhibit. The show is to be held at Mandan, North Dakota.

Mr. Nyden, of Hebron, says that he saved his small garden truck from grasshoppers last year by having sweet corn planted around it. The grasshoppers stayed in the corn.

Mr. F. W. George, of Aberdeen, S. Dak., in answer to my inquiry about the Silver Lace Vine, says that it is a rampant grower; that it comes up strongly from the ground each year and that the root apparently does not kill out. He seems to think considerable of it.

Farmers Bulletin 1587 covers the subject of Mushroom Growing for Amateurs.

The Beaver strawberry, which seems to be gaining popularity in Minnesota and Wisconsin, has not appeared to be superior to Premier at Fargo. For that matter, both it and Premier have winter killed somewhat more than Senator Dunlap and Dry Weather.

The New York Cornell Experiment Station states that low-yielding apple orchards are frequent where there is a slow draining subsoil two feet or less from the surface; those having poorly drained subsoil showing mottling are inclined to be shallow rooted. Deep rooted orchards are more likely to be productive.

Farmers Bulletin No. 1696 discusses the possibility of fruit improvement thru the selection of sporting branches for propagation.

While we are accustomed to seeing only the red Poinsettia, there are varieties which are pink and other which are white. These have never been popular.

Success has been reported from France in the development, by breeding, of strains of cats

which will catch rats. Some of those interested seem to think this is a way to solve the rat problem.

"Home Storage of Fruits and Vegetables" is the title of extension publication No. 174 of the Washington State College, Pullman, Washington.

According to O. A. Stevens, of the State Seed Department, an individual weed may produce as much as a million seeds, and there are weeds which have seeds so small that it takes 375,000 of them to weigh one ounce. The moral is: Plant weed-free seed and do not permit any weeds to produce seed in your garden.

According to the Ohio Experiment Station, tomatoes sprayed with Bordeaux mixture evaporate more water from their leaves and are more subject to blossom end rot than those not sprayed. On the other hand, spraying with oil sprays such a Volck decreases the rate of evaporation. They think an oil spray in a dry season would materially decrease the amount of blossom end rot.

Loaded refrigerator cars are now being lifted bodily into ships, then lifted out at the end of their ocean trip and placed back on the rail track. In this way products under refrigeration are not disturbed and the cost of shipping is said to be much reduced.

The English "Gardener's Chronicle" reports that when parsnips are to be grown for exhibition, an individual hole may be bored for each plant. These holes should be at least 2½ feet deep and are filled with light textured soil. Only one parsnip is allowed for each boring. Thus you can see the pains taken in producing a fancy product in Europe.

"Gardening Illustrated" reports a new dwarf group of perennial asters secured by crossing Aster Dumosus with Aster Novi-belgii. These varieties are said to reach a height of only 6 to 9 inches.

The New York Experiment Station has found that some of the sour cherries are self-sterile. Among those especially mentioned is "Homer," which is a variety sometimes planted in this state, tho we have not found it to be as hardy as expected.

"Hoosier Horticulture" reports that paint made of Bordeaux mixture has proven more satisfactory than ordinary paint for covering pruning wounds. The paint is made by mixing dry Bordeaux with raw linseed oil until the proper consistency is arrived at for painting.

"Roses for the Home" is the title of Farmers Bulletin No. 750.

The prediction is made that the potato industry in the future will market more potatoes in consumers packages, that is, bags or boxes



which may be carried home by the purchaser from the store. It is also predicted that potatoes will be cleaned better. Open mesh bags of 15 pound size are proving popular.

"The Fragrant Path" is the title of a new book published by the McMillan Company. The price is \$3.00. It deals with garden plants which produce more or less pleasant odors.

"The Rock Garden" is the title of special bulletin No. 228 of Michigan State College. It consists of 82 pages.

Rev. H. N. Tragitt, of Dillon, Montana, states that Pixwell gooseberry has a much more pleasing aroma than other varieties.

We know of a few Catalpa trees which have lived a goodly number of years here in North Dakota and which sometimes bloom. However, Catalpa is hardly to be recommended for general planting.

The U. S. D. A. says that fluorine compounds have been used as a substitute for arsenical sprays. However, there is evidence of the deleterious character of certain fluorine compounds. The presence of fluorine on fruits and vegetables shipped in interstate or foreign commerce will be regarded as a basis for action under the Food and Drugs Act.

Mr. Scouten, of Eckelson, says that his Riverside Spanish onions kept much better in storage than other varieties last year.

Mrs. C. S. Brown, of York, recommends banking winter onions like celery as a means of getting a better quality of green onions in the spring.

Some of our people are becoming impatient in wanting new potato varieties which we are working for, to be distributed for trial. It is not a simple matter to pick the best two or three seedlings out of 12,000 and then increase the selected ones up to a quantity sufficient for a wide trial.

A correspondent suggests grafting Russian Olive onto Siberian Pea tree and thus get a shrub as hardy as the Siberian Pea and one which the blister beetles would not bother. Unfortunately, if such a graft could be made—which is very unlikely—a part of the tree would be Siberian Pea and the other Russian Olive, each part as distinct as they ever were. Crossing can only be done thru the blossoms and by the planting of seed.

A correspondent in the "Flower Grower" says that the following mixture will rid plants of red spider: 1 teaspoonful of carpenter's glue dissolved in a pint of hot water. This should be cooled and used as a spray.

Groundcherries are known in England under the name of Cape Gooseberry. Incidentally, we have some work underway with this much neglected plant.

When one is considering irrigation, he very often fails to appreciate the amount of water necessary to do a good job. The statement is made that one should apply two inches of water at one time in an orchard. This will require pumping 100 gallons of water per minute for ten hours, for one acre.

In comparing our membership list with that of other Horticultural Societies, we find that we have more annual members than either Michigan or Maryland, both of which have a strong commercial horticulture industry.

Tests by the U. S. Department of Agriculture have not shown that glass which transmits ultra-violet light is superior to ordinary glass for growing plants.

A recipe for tomato cocktail developed for commercial canners is as follows: Tomato juice, 1 gallon; salt, 2 1/10 ounces; sugar, 4 4/10 ounces; white pepper, 1/100 of an ounce. This seasoning is added to the hot juice just before canning. Perhaps some of our people who can tomato juice for home use will like to try this.

U. S. D. A. Press Service says that seed corn maggot damage to newly planted potatoes—which likely means black leg infectoin—may be checked to some extent by disinfecting and cutting the potatoes and storing them for ten days or two weeks at a temperature of 55 to 65 degrees where the humidity is high, before they are planted.

Technical Bulletin 113, of Michigan Experiment Station, East Lansing, says that the problem of dealing with the grit cells in pears is one that must be solved by the breeding of a new variety. Culture has little effect.

The English "Gardeners Chronicle" states that it is probable the failure of house plants in America is often due to the fact that we maintain a house temperature of 70 degrees, whereas the standard house temperature for England is 55 to 60 degrees.

What is your ideal for a good cooking potato? Mr. Millar, of Edinburgh, Scotland, says, "It is one that after boiling or steaming is white, dry, and mealy well into the center, as shown by its cracking nicely. It should not go soapy before it is ready and it should retain its whiteness for some time after cooking."

T. P. Mackintosh, in the "Gardeners Chronicle" (English) says that with some potato varieties the commercial desirable type is unhealthy. Disease-free plants of the same variety are commercially undesirable. He also says that in their experiments they found it possible to take top cuttings from badly infected plants and produce a stock having practically no mosaic from them.

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SUMMER CARE OF THE GARDEN



Purley L. Keene

In one bulletin we find the following statement: "Bugs and weeds are always with us." How true this is! We must continually combat these pests. During hot weather the damage done by these pests is much more noticeable and detrimental to the plants than during the spring and fall when plants are making more growth. They seem to thrive best under conditions that are not ideal for plant growth. Our summer weather, especially during July, is frequently very hot and dry, which seems to encourage the growth of weeds and bugs and to discourage the plants. If we do not watch closely this is the time of year when the bugs and weeds will take our garden. It behooves us, then to watch more closely these two pests during the summer months than at any other time of the year.

Irrigation to keep the plants growing thrifty helps, but even though we irrigate, or if rains continue, hot weather is always dry because the heat evaporates an enormous amount of moisture from the soil and also causes an enormous amount of water to be transpired from the foliage of the plants. Cultivation becomes vital now not only to cut down the weeds which are competing with the crops, or soil moisture and food, but also to create and maintain a dust mulch which will prevent evaporation of moisture from the surface of the soil, thus conserving it for the plants. It is not wise to cultivate deeply during this time of the year for by so doing we frequently draw moist soil to the surface where it will lose its moisture. Shallow, frequent surface cultivation is the order for the coming weeks.

In irrigating your garden or watering your lawns, it is well to concentrate on one portion at one time. Instead of trying to water the whole garden on the same day or evening, concentrate on one portion of it and give this portion a thorough soaking so that it will be wet down from 8-12 inches. The next day or evening, take another portion of the yard or garden. Such a soaking will last a week. Light waterings or irrigations encourage the growth of roots in the upper portions of the soil where they will be injured by drought when the watering is delayed for several days. The most successful lawn maintainers water their lawns only once a week. Those who give the lawn its daily shower bath usually have trouble during the hot, dry summer. Evening and night is by far the best time of day for watering, for less moisture

will be lost by evaporation into the air than if the watering is done during the day.

The few weeds which may have been missed during cultivation and which gain considerable size may most readily be disposed of by hand pulling, placing them in a sack or basket and removing them completely from the garden. This is especially true with creeping jenny, pig weeds, pusley, which persist in continuing to grow even after they have been pulled or hoed out.

Another argument in favor of weed control is the fact that weeds—and especially the rag weed—and other wind-pollinated weeds are particularly troublesome to those affected with hay fever. To reduce the pollen in the air, destroy the weeds—especially rag weeds. They should be pulled up by the roots or cut down. Attacks on rag weeds should be made before the weeds bloom and distribute their pollen. **Destroy all rag weeds before the first week in August.**

This is the season when additional fertilizer will be beneficial to the gardens and lawns. The fertilizer which was applied earlier in the spring at the time of seeding has probably been pretty well used up so that an additional application of a readily available commercial fertilizer will be decidedly beneficial in helping the plants through the summer.

The commercial fertilizers which have come into such common use during the last few years for home garden fertilizers are especially valuable because of their effectiveness, ease of application and lack of noticeable odor. They are secured in powdered form and contain concentrated plant food. It is easy to apply too much. Light applications should be made and cultivate or worked into the soil. It is well to purchase those which contain all three of the fertilizing elements: Nitrogen, Phosphorus and Potassium. Nitrate fertilizers, especially nitrate of soda and sulphate ammonium are readily available and strong stimulants of vegetative growth. These fertilizers are frequently used for leaf crops—such as spinach and lettuce. They have also proven very beneficial for tree fruits and lawns. Complete fertilizers, however, are more satisfactory for general use. In applying the commercial fertilizers, care should be taken not to get the fertilizer too close to the stems of the plant or upon the foliage of the plant. A handful scattered over an area of 6 to 10 square feet is usually sufficient; or, if more accurate amounts are desired, one pound to 100 square feet would be a liberal application for this time of the year.

This is the time of the year to prune our spring flowering shrubs. By the pruning of shrubs we do not mean the trimming of the outer tips and the shaping of the shrubs into regular and symmetrical forms. Shrubs, as a general rule, look much more artistic and beautiful if left to take their natural form, sending a



sprig out here—another there, in all directions. If you trim them up they look too artificial. By pruning shrubs we mean the removal of the oldest canes, making the cuts close to the crown of the plant or the surface of the soil. This thins out the bush and gives the new shoots an opportunity to receive some sunlight. A moderate amount of this type of pruning will help to hold the bush at a moderate height and at a reasonable size. Old, unpruned shrubs frequently grow so tall and large that they become unsightly and too large for their location. Particularly is this true in foundation plantings.

The vine plants which are used on trellis about the porch or on pergolas or arbors may have grown so vigorously that there will be danger of their blowing off of the trellis if the excessive foliage, shoots which extend out into the air from the trellis, are not removed. If the Englemann ivy which grows on brick and stone buildings has made such a vigorous growth this year that there is considerable danger of it breaking away from its support, it is best to remove the outward growing shoots.

New grafts should be looked at to see that no girdling is taking place due to too tight wrap of the string or muslin, to see that the wax has not peeled away or cracked off of the union. In clipping grafting where both sides have grown the weaker one of the two may be pinched back so as to encourage the growth of the other. All suckers from below the union may be pinched back or removed entirely in order to encourage the growth of the adopted top.

During the time of frequent rains which we sometimes have during the spring, fire blight appears to be more serious than usual. Experiments conducted at the experiment stations of New York and Massachusetts have shown that moderate, light, early pruning discourages fire blight. The reason for this is that fire blight is always more serious on vigorously growing trees. Trees which are pruned heavily tend to send out vigorous shoot growths the following year; hence it is much better to prune trees lightly each year than it is to give them a severe pruning at any time. Experiments conducted at the experiment station in Wisconsin show that spraying with bordeaux appears to be beneficial in controlling blossom blight caused by the fire blight bacteria. They seem to favor a 1-3-50 mixture, which means one pound of copper sulphate, 3 pounds of lime, and 50 gallons of water. A trial with lime alone at the rate of 3 pounds to 50 gallons, omitting the copper sulphate, reduced the blight although it did not give as good control as the bordeaux mixture. Applications made at the time of blooming gave the most satisfactory control. Those who find their apple trees in-

festated with fire blight at the present time may check its spread by pruning out the infected twigs, or new shoots. Care should be taken to see that all cuts are made far enough back so as to remove all infected portions. The pruning tools should be disinfected with a solution of corrosive sublimate frequently. The pruning wounds may also be treated with the same disinfectant—corrosive sublimate, 1-1000. (CAUTION: Corrosive sublimate is a POISON.) All of the pruning should be removed from the orchard and burned. Where the disease has worked back into a main limb or trunk and caused a canker, canker should be cleaned out and disinfected, shellaced, or painted with white lead.

Among the most serious insect pests which we find attacking a large number of plants is the Red Spider. This pest is especially serious on hedges and evergreens. It can be controlled by three methods: First, by syringing the plant with a forced spray of water. Those of us who have pressure can wash off our plants with a forced spray from the nozzle of the garden hose. A syringing once a week for several weeks will usually control the Red Spider effectively. Especially is this true with the hedge plants. Second, the dusting of the plants with finely divided sulphur—commonly known as flowers of sulphur, or sulphur dust. Third, and probably the most effective method of controlling Red Spider on evergreens, is the spraying with a glue mixture, using one pound of glue—ordinary, cheap sizing glue—to 10 gallons of water.

In the control of all insects, the first step is to determine the nature of the pest; second, the best method of combating, and third, doing a thorough job of spraying, using the right materials.

EXTRACTS FROM THE DIARY OF A TRAVELING MAN

W. A. Simmons

May 15: Tests have been conducted at the New York experiment station to determine whether or not a given cherry variety is capable of pollinating itself. From these tests it was found that the Homer cherry set very few fruits to their own pollen, while the Early Richmond set considerable fruit. This probably accounts for the Homer cherry's reputation of being a shy bearer.

May 19: I was very unfortunate in having to make my annual visit to Glacier Park too early to see any of the wild flowers in bloom, but the spectacle of the snow-clad mountains almost compensated for the lack of blossoms. I had never seen so much snow; the mountains were fairly plastered with it. Many roads through the mountains were covered with drifts



30 to 40 feet in depth, which Government workers were striving to remove, and it was thought that June 15th would be the earliest date that the roads could be opened. With such perfect winter protection and so much moisture, tourists visiting the Park in mid June should see a marvelous flower show this year.

May 24: We were asked by several anxious readers as to the best method of prolonging the blossoming period of the dandelion. As reproduction is the second law of nature and the dandelion is propagated mainly from seed, it would seem the best way to make it an all season bloomer would be to pick the blossoms daily.

Our method is to do this with a dandelion rake operated by some energetic younger member of the family each evening. One does not deny himself of the blossoms for a single day by this method, as "come dawn" the place is fairly ablaze again with the handsome yellow flowers, and we count on having them with us until Christmas.

I was rather surprised to receive on inquiry as to the best way to exterminate them. The best plan we can think of is to have a neighbor who is fond of dandelion greens and allow him or her the freedom of the premises.

In cutting the greens the dirk should be plunged as deeply as possible into Mother Earth and a good share of the root as well as all foliage removed. The dandelions bitterly resent this treatment to such an extent indeed that much of the bitterness is carried over into the cooked product. Dandelion greens is rather an acquired taste but it can be managed by anyone who is fond of the taste of quinine.

May 26: I was passing Bainville, Montana, today when a couple of unroofed and scarred up elevators reminded me of the cyclone that occurred there about a week previous, so I drove up town to observe the damage. The cyclone came in from the south and passed right down the center of the main street, but unfortunately the street was not quite wide enough to accommodate it, so it removed a number of store fronts on one side and several filling stations on the other.

People who came in to see the ruins were amazed that though the storm flattened the filling stations it had not lowered the price of gas at all, which was still 7½ cents per gallon, higher than just across the state line ten miles farther east.

There were no fatalities, though several people in a restaurant were somewhat injured, the proprietor most seriously as the customers all made their escape without paying for their suppers.

June 5: I was home this year during the iris and early peony season and found Lord of June lording it over the lesser members of the iris

tribe. It is hard to imagine a flower that gives so much and asks so little as the iris. True, its season is not long, but while it lasts it has no rival and even after its blooming season is over, its large, fleshy leaves have architectural value.

On my arrival home Friday evening our peonies were still in the bud stage, but on Sunday morning these too were in full flower. In fact, due to the intense heat of this month, all flowers have been most fleeting; here today and gone tomorrow, as Mrs. Gould of Minneapolis expresses it.

Some of the early bird roses were in bloom, such as Harrison's yellow, Agnes, Dr. E. M. Mills, and Tetonkaha. Blue flax in the garden made a beautiful shimmering foil for the iris each morning, but it was evidently a charter member of the six-hour club and closes up about noon.

Fruit is a total loss with us this year. Hail denuded the trees of leaves last August, and when new leaves appeared many apple trees seemed to think it was spring, blossoming and even in some cases setting new fruit. Though many of the trees blossomed this year, there was not strength enough in the fruit buds to sustain the fruit and most of it had already dropped off and none promised to attain size.

June 6: I had a pleasant visit with our flower authority, Mrs. M. W. Sheafe of Watertown, whose fine articles in our magazine have been of such interest and value, this morning. She was in her garden admiring a lovely Peruvian Daffodil and I stopped to help her. As usual her garden was beautiful and worth going a long way to see, though this spring she mourns the loss of many iris, several peonies, and all her Regal lilies. It is hard to account for the loss of these hardy things.

Watertown usually has much snow but last winter was an exception. It is possible that these plants, used to having a heavy snow mulch, had become somewhat tender and found themselves unable to survive without it, while in our garden a hundred miles south snow covering is the rare exception, not the rule, but still these plants manage to live through the freezing and thawing of our winters. This winter killing was general in Watertown and by no means confined to Mrs. Sheafe's garden.

June 12: I found our good friend, Dr. A. F. Yeager, busy as usual today but he found time to take me out through the orchard for a close up of some of the results of his plant breeding work.

First he showed me an apricot tree about 15 feet high, showing no indications of having passed other than a restful and healthful winter, and loaded with fruit now about an inch in diameter. He also has hundreds of second generation seedling from this tree coming on.

A very interesting apple tree was his cross



of the Dolgo crab with the Delicious apple. This also was loaded with fruit, showing the characteristic shape of the Dolgo parent but already much larger than the Dolgo crab attains at maturity. He told me the apple attains a size of over two inches in diameter and has much of the Delicious flavor.

This should become a commercial apple in the Dakotas at least, and he has it under propagation. In my experience with the Delicious at Sioux Falls, it seldom exceeds that size when grown on its own stem, and in Dr. Yeager's cross the apples appear in clusters instead of singly as is the habit of Delicious.

Formerly we often privately dubbed the ever-bearing strawberry the never-bearing, as varieties then in existence produced fruit so grudgingly the robins almost starved to death in harvesting them. This characteristic has been entirely changed in Professor Yeager's "dry weather" strawberry. I have never seen the most prolific June bearing sorts so loaded with fruit as the dry weather plants were showing today. This variety should be taken up by our nurseries and increased as rapidly as possible.

In cherries Mr. Leslie's introductions are being propagated and seedlings raised from them. These are very hardy and will push the sour cherry belt far north.

In tomatoes the especial goal being sought just now is increased earliness, after which quality, smoothness, and size will receive attention, in the endeavor to give us something better than our present best, which are Red River, Bison, and Jumbo, all Mr. Yeager's origination.

The gooseberries, Abundance, Pixwell, and Perry, were fairly loaded with fruit, making Mr. Yeager's statement that boys often picked a bushel in an hour seem entirely probable.

Dr. Yeager has an extremely interesting bulletin out about gooseberries which is very much worth having. Anyone in the state may obtain it free of cost by writing the college while those out of the state should inclose the customary out of the state fee of ten cents.

In this bulletin Mr. Yeager tells of his work in obtaining these greatly improved varieties and also how to grow, prune, and care for the plants and also, as is his custom, what to do with the berries after obtaining them. He tells how to make pies like Mother used to make, also how to make spices, jams, and jellies, beyond your Mother-in-law's wildest dreams.

Many of his roses were in bloom, some of which will be introduced soon, and others used in further crossing work. Dr. Yeager is doing some wonderful work with very slender means. I wonder why it does not occur to some rich man to endow him with about a million dollars and let the world have the benefit of his vision

and his hard work, unrestricted by a financial handicap.

July 17: A Minneapolis club recently held a flower show, wherein the only competition was to see who could bring the loveliest blossoms for all to enjoy. There was no judging or awarding of prizes, and consequently no disappointments or heartaches. We wonder if this is not the ideal sort of flower show and if more would not enter exhibits if this friendly and unselfish spirit of emulation controlled the occasion.

CONSERVATION

The more we have of anything the less we appreciate it; also the longer a thing has been in existence the more it is forgotten. It is to the new things, the things that we cannot have that we give the most attention. Many people today look with scorn upon the pig, chicken, cow or bushel of wheat that they pointed to with pride a few years ago when prices were high, although the food value remains the same. There are only a few people who take things seriously and do their own thinking. Some organizations are built up for the purpose of stabilizing our valuable assets.

Areas of our outdoors have been set aside by our states and Federal Government as forests and parks. The purpose of this is to prevent them from being carelessly or unwittingly destroyed. We, in South Dakota, are more especially interested in forests and trees because we have so much prairie and open country. We have 50,000,000 acres of land in South Dakota with less than 4% of this area in natural forests and over 75% of this 4% of timbered area lies in the Black Hills. More acres of our natural forests are being harvested or destroyed than are being grown. The same is true of our artificially grown trees such as windbreaks, woodlots and orchards. Much time and effort has been spent in getting the old plantings established. Many laws were passed extending advantages to those who would plant trees.

The Federal Government passed the Timber Culture Act of 1873. This is what has generally become to be known as the tree claim law. The Federal Government was very liberal in the enforcement of this law and did much to bring the advantages of this law before the people. In fact, the people were given regular sales talks to get them to take advantage of this law.

Our own state passed our tree bounty law in 1890. This law is still in force but has not come to the attention of many of the younger people. The law is as follows:



TREES

Session Laws 1927.

Section 8045. To Whom Paid. Any person who, after the year 1920, shall have planted and successfully cultivated the number of forest or fruit trees or shrubs prescribed by this article and who shall have complied with the provisions of this article, shall be entitled to a bounty of five dollars, (\$5.00) per acre, on not to exceed ten acres, each year for the period of ten years, to be paid by the board of county commissioners of the county in which such trees are located, out of the general fund of such county; provided that such person shall continue to comply with the provisions of this article.

Section 8047. Number of Trees to the Acre. To secure such bounty there shall have been planted not less than one hundred and fifty trees to the acre, and there shall be not less than one hundred living trees per acre in any year for which such bounty is paid. Provided, that any trees or shrubbery planted after July 1st, 1927, may by resolution of the Board of County Commissioners passed at the first regular meeting of such board in January, of each year be required to be arranged and planted substantially as follows:

(a) Elms, ash, black walnut, box elder, native cedars, Black Hills spruce, oak, cottonwood, willows, or other trees of like character not herein specifically mentioned, in rows forty feet apart and such trees twelve feet apart in each row.

(b) Russian olive and Cargans in rows thirty feet apart and such trees five feet apart in each row.

(c) Apple trees in rows forty feet apart and such trees forty feet apart in each row.

(d) Plum, pear, cherry, or other similar varieties not herein specifically mentioned, in rows thirty feet apart and such trees thirty feet apart in each row.

(e) Caragana, artisma, buckthorn, spirea, common lilac, and other similar varieties of shrubs not herein specifically mentioned in rows thirty feet apart and such plants one foot apart in each row.

(f) Lilac, snow ball, and other shrubs of a similar variety, not herein specifically mentioned, in rows twenty feet apart and such plants five feet apart in each row.

Another means of encouraging the planting of trees is carried on through the U. S. Field Stations. The U. S. Great Plains Field Station at Mandan, North Dakota, is the station that serves our part of the country. West of the one hundredth meridian a certain number of wind-

break plantings are allowed to be made. The soil must be prepared, the trees planted and cared for as directed by the U. S. Station. Some of these plantings have proved to be good examples in the different communities. The main reason for success seems to be that the land must be prepared and that the trees must be clean cultivated. The trees must be fenced from livestock and the trees must be wrapped and protected from mice and rabbits. The reason we do not have more trees is not because good trees are not purchased and planted, but because the ground has not been properly prepared and the trees have not been cultivated and kept free from weeds. The keeping of the farm livestock and the wild animals from damaging the trees is as important as the cultivation. Our new trees, the Chinese Elms, are greatly appreciated by rabbits and they must be protected until quite large.

Many people will say, but why all the fuss and talk about tree planting? A few of the many reasons are to prevent erosion on our steep slopes, so that the soil does not all move down hill and wash entirely off your place, or blow away as sometimes happens when a tornado-like storm passes over your place. The effects of erosion caused by removing trees cannot be demonstrated on a small scale so well as it is in our large forests. About 40 sections of land in one section was burned summer before last in the western or more truly the central Black Hills. This territory is very rough and some parts receive heavy rainfall. The people at Rochford had the advantage of forest erosion demonstrated to them in an exceptional manner this past summer. The road just above town follows along the creek bank and a large cliff. When the water from the burned-over area during heavy rains came down the creek in former years the creek run about bank full. Last summer after some of the heavy rains the creek flooded and the water ran over the road to such a depth that when the flood had subsided only some boulders a foot and larger were left for a road bed. Each small plant and tree helps to hold water. It does not always get the benefit of the water that it helps to retain. The plants hold the water as it descends down the hill giving it time to soak into the porous gravelly soil. In this way, each plant above helps the others lower on the hillside.

The retarding of this water keeps the springs flowing through the dry seasons of the year. This is an essential thing for our trout in the mountain streams.

Impounding water in dams, lakes, and that held by vegetation during floods until it has time to soak into the ground keeps the water



level for our wells, lakes and many subirrigated or partially irrigated pieces of land at a higher level.

Many of our birds will not live in a locality where there are no trees. We have 350 species of birds in South Dakota. If it were not for these birds we would have outbreaks of insect pests that would cause so much loss in crops that it would amount to what would be practically a famine. We have had many talks on value of the wood, fruits and beauty of plants so this phase of the subject will not be taken up at this time.

During the business meeting held at Sioux Falls June 24th our society voted to give all possible aid in securing state parks. The idea being that we should have small parks throughout the central and eastern part of the state. Mr. Charles McCaffree of Canova and Mr. Henry N. Dybvig, of Colton were appointed on a committee to work with the secretary in securing these parks.

On Sunday, June 25th, the society made a tour of the country from Sioux Falls to Gitchie Manitou Park, Garretson, Dell Rapids, and Colton. Iowa has many of the relatively small parks such as Gitchie Manitou and one must commend them for setting aside these beauty spots for the use of their citizens. If similar places are not taken under state control by our state the timber will be, as part of it is now, cut from these areas and much of their value will be lost. The sooner the state acquires title to these places the sooner they can be improved and enjoyed by everyone. Some of the owners of these scenic spots charge a fee for visiting them. Some people condemn them for this, arguing that the natural scenery is not theirs and that they should not charge others for viewing it. The other side of the story is that they have capital invested in this property and pay taxes on the property. It is a nuisance to have a large number of people trampling over your property each year and it is not unusual to see the visitors digging plants or taking rocks and other things with them.

The rock formation at Garretson and Dell Rapids furnish an exceptional large quantity of fine building material. It also furnishes a rock bed in the streams and these two towns have taken advantage of the opportunity of building fine dams which afford bathing for their communities. As one examines these dams built of cement and stone on a stone foundation there is no reason why they should not serve the people for hundreds of years. There was a large number of bathers at each beach and everyone was enthusiastic about the dams. Instead of tearing down many of the recreational spots that we will some day try to build up at great

expense we should be securing title to them and building them into more beautiful and useful places at the present time.

IN DEFENSE OF AN OUTLAW

By Forrest L. Meuret, Nebraska

Today there are three leading races of bees, all of them with one or more serious faults and all with their virtues. Our problem is to select that race whose faults are most easily controlled and whose virtues are most outstanding.

Most beekeepers have stayed with Italians. Their faults and their needs are so well understood that the average beekeeper does not notice them until he tries something else. When he is confronted with a new problem which he does not understand he decides that the new race he is trying is not so good and he is soon back with his old strain of Italians.

Either of the grey races have the following advantages: (1) They are more prolific and build up for the main flow without stimulation. (2) They winter better. (3) They fly at low temperatures. (4) They build beautiful white capped combs by simply raising them a fraction of an inch from the honey below. (5) They are industrious, long lived, and gentle.

The objections to the Caucasians are: (1) The sticky mess of propolis with which they plaster everywhere and track up their otherwise perfect combs. (2) Those accustomed to Italians complain that they cannot recognize mismating.

The objections to the Carniolans are the same with regard to mismating because of the similarity with the common black bee. It is further complained that they swarm to excess. That is their one serious fault. As soon as swarming is over they work with unequaled vigor. No bee is a good honey gatherer when putting her entire attention on the business of swarming.

I have a system which I have tested on a small scale and which has proved successful. It simply removes the desire to swarm without hindering any other normal activity.

It is a well known fact that a colony of bees with a young queen seldom swarms—that is, a queen which was reared and mated in the spring of the same year. Carniolans will swarm, however, even with these young queens.

They must be given a new queen early in the spring and they will build up to maximum strength too soon for the sweet clover flow and, in the sweet clover area, they may be divided at the right time so that they will again build up for the main flow but not before. They will not loaf. If they are strong and have nothing else to do, they swarm. Sometimes they swarm anyway, whether they have a young or an old queen.

This method of dividing necessitates a heavy



uniting program in the fall or we would find the number of colonies increasing too fast. I use a one and one-half story brood nest. In uniting I intend to unite every other colony with its neighbor, except a few which I will keep for increase, and I probably would extract the two shallow supers, leaving a two-story colony for winter.

In localities with an earlier flow than sweet clover, I believe good results could be obtained with this race by forced supersedure.

Either way I would use a manipulation which I have already found satisfactory. It must be remembered that a Carniolan queen requires a one and one-half story brood nest. An industrious over-wintered colony will have this brood nest full by the first of June and I mean full. These queens lay in all four corners, against the very edge of the wood unless they are blocked by honey, even sometimes to the outer edge of the outside frames.

I am confident that with a little packing these heavy colonies would stand Canadian winters. If kept from swarming, the Carniolans will get more honey because they have huge colonies of bees with which to get it.—American Bee Journal.

THE FLYING CAT

A. F. Yeager, N. Dak. Agri. College



We have had an experience this year with a screech owl which I think is worth passing on for the benefit of others. Our greenhouses at the Agricultural College are connected with store rooms where corn and other seeds must be kept. In years past, the control of mice and rats has been a very serious problem. When we have sown lettuce and cabbage seed, the young seedlings have sometimes been entirely grazed off by the numerous mice which invade the greenhouse. Pepper seed, when germinating, seems to be a favorite mouse food and at times we have

lost our whole planting of seeds before the sprouts came through the surface.

We have tried all sorts of methods to keep down the mice. Poison bait has been distributed at times; we have used patent mouse traps, and the ordinary snap mouse traps by the dozen; small dogs and house cats; all as a means of keeping the pests down, but we have never been free enough from them to be safe.

In January of this year, as I was leaving my house one morning, I saw a little brown screech owl sitting on the electric light wire up near the gable of the roof. He was still there the next day. The third day he perched on a grape arbor just above the door. The thought came that this might be a good chance to see whether a screech owl might not be an efficient mouser. Hence, we secured a bug net from the Entomology Department and captured the little bird. It was taken to the greenhouse and released. That evening one of the workmen saw him dismembering a mouse. Within two weeks there was not a mouse to be seen or heard around the greenhouse for the first time in years. Since then, because of the scarcity of mice, we have had to feed our "flying cat" on hamburger or other raw meat, but we still have no mice. While I do not know whether this little owl would tackle a full grown rat or not, he has evidently scared them away, because we do not see them any more.

I wish it were possible for us to keep this little bird as a permanent resident of the greenhouse but I am afraid that with the opening of the ventilators and the coming of spring, he is likely to make his abode elsewhere.

PERUVIAN DAFFODIL

Mrs. M. W. Sheafe, Watertown, S. D.

Among the many tender bulbs that we grow in our gardens very successfully, the (Peruvian Daffodil) (*Ismene Calathina*), holds a high place.

From personal experience I can truthfully say it is one of the easiest tender bulbs to handle that I know of, and the least trouble.

After danger of frost is over in the spring, plant the bulbs four or five inches deep, in pliable loam that is well drained, removing of course any small bulbs that are attached. Cover with two or three inches of soil, water well and later fill in as the bulb grows. In a comparatively short time a strong stalk will rise from the center of the waxy green leaves, and several buds opening later into beautiful fragrant *Amaryllis* like flowers will be a real pleasure. The blooms last several days in the garden, longer if cut and taken indoors. As the bulbs increase in size from year to year more blooms on a stalk will be had, to repay one for the care

(over)

given. Remember always that low bulbs require water, so give them a generous drink every few days, if weather is dry.

After frost kills the foliage in the fall, dig, and after drying a little take to the basement and in a few days place in a box and cover with sand or dry earth, shake the container to settle covering closely about the bulbs.

In the spring I find my bulbs inviting removal to the garden, even before the conditions outside are favorable. Many small bulbs will develop about the large one, so when planting in the spring, I make the hole large enough to admit the flowering bulbs and place small detached ones around, as in that way it is easy to keep track of them. Bulbs are quite inexpensive and increase rapidly. If you are not familiar with this bulb try it next year in your garden, or if you so desire, grow it in your window. Am sure you will like it.

CANE DISEASES OF RASPBERRIES

L. W. Koch, Dom. Laboratory of Plant Pathology, St. Catharines, Ont.

In most years raspberries are subject to a number of cane diseases which vary widely both in prevalence and in the amount of injury which they cause. Most of these, such as spur blight, blue stem and anthracnose, are caused by fungous parasites, though one destructive disease, namely, crown gall, is caused by bacteria. Symptoms of cane diseases vary widely from the production of large brown diseased areas on the canes in the case of spur blight, and the dropping of leaves accompanied with bluish discoloration of the stem in the case of Verticillium wilt, to the formation of large knot-like excrescences on the canes below the soil-level in the case of crown gall.

A number of these disease-producing organisms are spread to healthy plants by means of wind and rain; others are carried in the soil. Hence it can be readily understood that different control measures are necessary to control the various types of disease. Intensive investigations of a number of these diseases have been carried on during the past ten years at the Laboratory of Plant Pathology, St. Catharines, of the Division of Botany, Dominion Experimental Farms, and as a result of these the following recommendations are submitted to the grower to aid in controlling these diseases.

1. In setting out new plantations, use only certified stock because it is the best obtainable. All bundles of certified stock must be accompanied by the Dominion Government seal of approval, namely, the official red tag. If raspberries are not accompanied by this tag the stock has not been certified.

2. Avoid the practice of allowing the raspberry row to become too wide and dense. When

rows are dense and close together, or when weeds are allowed to flourish between rows, there is less air drainage and invariably more cane diseases are to be found.

3. A spray application of lime sulphur 1:9 at the delayed dormant stage is of value in checking anthracnose and an application of Bordeaux mixture 3:5:40 plus 2 pounds calcium caseinate at the time when canes are 5 to 9 inches high will check spur blight.

4. All fruiting canes should be cut out and burned shortly after fruiting.

5. To check Verticillium wilt and crown gall new plantations of raspberries should not be planted on soil which has previously grown crops which are susceptible to either of these two diseases.

THE KINGBIRDS

(Continued from page 74)

suggestion of indignance or rudeness. Telephone wires, fences and weed stems are favorite perches from which the birds make frequent sallies for flying insects. A characteristic sight is afforded when a bird settles down upon a low perch, spreading out the tail and showing the white tips of the black feathers.

The Arkansas kingbirds are found from the plains westward. In North Dakota the two birds are about equally common and so alike in general habits that where one is found the other usually is also. Their names refers to the river of the same name, and the birds are not found in the state of Arkansas. They were first found in Colorado by Major S. H. Long's expedition of 1819-20. Mr. Judd says they were not common in the northern part of North Dakota in 1895 but have become so since that time. Dr. T. S. Roberts records a similar extension of their range in Minnesota eastward and northward as far as the evergreen forests.

These birds have gray backs and yellowish breasts. As they spread the tail it shows black with narrow white edges. They seem especially at home in the cottonwood groves and are even noisier than the common kingbirds, the call notes having a louder and harsher quality.

NORTH DAKOTA HORTICULTURAL SOCIETY NEWSLETTER

(Continued from page 76)

A correspondent in the same magazine says that a light dressing of naphthalene on the surface of infested pot plants will destroy bugs and worms in the soil.

A 1500-watt electric lamp has been used successfully to color apples. Perfectly green fruit became almost completely colored in six days.

"Cut out one-third of the old stems in shrubs each year to keep them young," says "Wisconsin Horticulture." "Cutting the ends off of stems produces stiff, ugly plants with all their green at the top and bare, ugly limbs beneath."