
NORTH AND SOUTH DAKOTA HORTICULTURE

DECEMBER, 1933



The New Lake at Rapid City from an O. A. Vik Photo Picture



CORES, PITS AND SEEDS

Chas. McCaffree, Librarian

The National Conservation Society members voted on the most popular tree and the American Elm came first with 8,543 votes and White Pine second with 3,473. Our South Dakota votes would at this time go largely to the Chinese Elm but in another 20 years we might have a less unanimous opinion. But the way a Chinese Elm starts to growing the next morning after it is planted makes the warmest kind of friends.

Some home grown walnuts are means this fall of starting further replacement of drought loss, in the grove surrounding the house where this is written. They should survive any drought which may ever visit this country again. Of course the nuts are planted in ground suitable for growing and not in the soil so dry as to break up in dusty chunks like some which may be found. An almanac which came today predicts a "general shortage of moisture in the plains states of the Northwest," during the 1934 growing season. That settles their goose, even though their advertising experts might make me think I have all the symptoms needing a big order of medicine. I wouldn't buy their stuff to save even the chickens.

Purdue University has demonstrated that electric light may be used to supplement sunlight for plant growing, and they have tables prepared to show how late the various plants must stay up evenings to get desired results. Less than 20 years ago, the electric lighting of hen houses became common for forcing egg production (though at least one South Dakotan had been forcing late hatched chickens by electric lighting some years before that). Now forcing plants by lighting may become common, adding to the burdens of all but the electric light companies. In such case President Robertson will have to run light wires mostly up for seven miles to his mountain orchard.

In order that his 7,000 bushels of apples may properly color up, Philosopher Simmons will have to carry around an extension cord about his quarter block to hurry along the rare lilies which are his specialty, and Secretary Vance will probably have to supplement with flashlights out on the Missouri Bluffs around Pierre where he grows the sweet clover for his several score stand of bees. Before our pleasant secretary gets that under way the NRA may restrict the working hours for bees and another natural science will be all upset.

Have you tried a common bushel basket for the lily roots in the pool. It is cheap, convenient and may be thrown away in the fall, avoiding the storage.

One of the garden magazines reports that one of the big garden shows had as its most interesting features a garden grown in a demi john.

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TABLE OF CONTENTS

	Page
Cores, Pits and Seeds, Charles McCaffree	134
North Dakota News Letter, A. F. Yeager	135
The Winter Care of House Plants, Purley L. Keene	137
South Dakota Society Meets	138
Extracts from the Diary of a Traveling Man,	
W. A. Simmons	139
Hyacinthus Candicous, Mrs. M. W. Sheafe	141
The Marsh Hawk, O. A. Stevens	141
Seed Potatoes, A. F. Yeager	142
Notes	143

The picture shows a very clever arrangement of many well grown plants in blossom and fruit. We might as well try it for at least until the next session of the legislature we will have no other use for demi johns, if we can get them.

The State Parks committee appointed at the summer meeting of the Society is to report at the January meeting in Dell Rapids and will detail a comprehensive plan which will be proposed at the coming session of the legislature. Everyone seems to be for state parks, if someone else will pay for them. A general discussion will be requested at our session. Our society has been in the lead in this for the last decade at least. Now there are some good strong organizations who will work for the same ends.

Some garden tools might well figure for most of our depressed budgets, in Old Santa's bag. The latest in our vision is a set of seed droppers of various sizes like medicine droppers.

A treatment for potatoes which is replacing the old corrosive sublimate in many places is acid corrosive sublimate made by dissolving 4 ounces corrosive sublimate in 15 gallons of water and adding 1 percent of commercial hydrochloric acid. Potatoes are soaked in this solution 3 minutes instead of 1½ hours as was necessary with the old corrosive sublimate solution.



NORTH DAKOTA STATE HORTICULTURAL SOCIETY NEWS LETTER

December, 1933



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

It is now the time of year to be thinking about next year's dues. Any of our members who send in their dues without a special request are saving the Horticultural Society the cost of sending out a letter to them, in addition to the saving of time and trouble incidental with the putting out of such letters. Therefore, if you have the dollar, please send it in right now. Our premium list for this year will be issued shortly and contains a large number of new plants, both fruit and ornamental, and some new varieties to be grown from seed.

A letter from Edmonton, Canada, states that last year ordinary gooseberries killed back 85 per cent, red and white currants 65 per cent, black currant 40 per cent to 50 per cent compared to only 25 per cent for Abundance, Pixwell and Perry gooseberries, the new North Dakota varieties.

A recent experiment at the New York Experiment Station shows that seed pieces from the tips of potatoes produce more vigorous plants and a higher yield than those from the base of the potato.

R. K. Beattie, in Science, states that the Chinese Elm is apparently immune to the Dutch Elm Disease unless artificially inoculated.

A correspondent asks whether the killing back of tips of fruit trees will take the place of pruning. It certainly will not, because pruning should consist principally in thinning our branches which will open up the top to light, rather than cutting back, which tends to thicken up the outside of the plant.

The Rhode Island Experiment Station reports the biggest response of peppers to phosphorus, as compared to the other fertilizing elements usually considered as likely to be deficient. In their trial Early Giant was the earliest variety, World Beater the largest cropper.

In the English "Gardener's Chronicle," J. K. Leven calls attention to the fact that if evergreens have the tips killed out, one of the side branches will usually replace it as a leader. Sometimes two side branches will grow at about the same rate, producing a bad crotch. If this occurs, one of them should be cut back. He states that if the damage is done to a young tree the new leader will straighten out and in a few years it will be impossible to tell that it was once a branch.

The following are ornamentals which, as re-

ported by the Plant Testing club of the Wisconsin Horticultural Society, have met with the approval of its membership: *Philadelphus virginale*, *Caragana pygmaea*, *Viburnum carlesii*, Dolgo crab, *Taxus cuspidata nana* (dwarf Japanese Yew), *Polygonum auberti* (silver lace vine.)

There is a new monthly magazine devoted to cactus which is published by the Desert Magazine Publishing Company, Pasadena, California.

"The Outdoor Livingroom" is the attractive title of a new book published by the McMillan Company.

Dr. G. A. Zimmerman, in the National Horticultural Magazine, recommends the following method of top grafting walnut trees: Graft the central and upper branches, leaving the lowest branches to prevent too rapid growth of the scions. These branches are later removed. In making grafts, the scion is cut with a sloping cut on one side only, and is pushed under the bark. The entire end of the stock as well as the scion is coated with paraffin and shaded on the southwest side with a shingle.

Recent studies with electric hotbeds show that a double glass reduced electricity used by 25 per cent to 40 per cent. Glass substitutes required more power than glass. Surface heating was more economical than burying the cables. Complete cinder insulation saved 19 per cent on the power used.

Do not leave young apple trees without either snow or artificial mulch on the ground to prevent deep freezing. Young apple roots will withstand a temperature only of 20 degrees above zero, and with bare ground and extreme cold it is easy to see that they might be injured.

J. G. Hutton, reporting on soil fertility tests at the South Dakota Experiment Station, says phosphorus alone gave a greater increase in yield for all crops than any other treatment, averaging 32 per cent more.

R. M. Smock, in the bi-monthly bulletin of the Ohio Agricultural Experiment Station, says that weeds may be controlled in the asparagus bed by an application of 500 pounds of cyanamide per acre. This material not only destroys the weeds but acts as a nitrogen fertilizer.

The 1932 favorite varieties of Glads, according to the American Gladiolus Society, in order of their rank are: Minuet, Marmora, W. H. Phipps, Betty Nuthall, Picardy, Dr. F. E. Bennett, Mrs. Leon Douglas, Pfitzer's Triumph, Golden Dream, Mother Machree, Emile Aubrun, Aflame, Albattross, Commander Koehl, Giant Nymph, Mrs. P. W. Sisson, Mammoth White Purple Glory, Veilchenblau, Aida.

Now that the subject of Glads has been brought up, the U. S. D. A. says to treat all bulbs with naphthalene flakes, with hot water, or with fungicidal dips. At the first sign of silvering, which

indicates thrips, the plant should be sprayed with a mixture of 1 rounded tablespoonful of paris green and 2 pounds of brown sugar in 3 gallons of water. The spray should be repeated each week until the blossoms open.

"Gardeners Chronicle" says that deserts are bare of vegetation not because of lack of water, but because of one of three things: Shifting sand, too much salt, or too low temperature. No desert is so dry but that some plant will grow there.

In the same magazine mention is made that lilies are often cultivated and eaten as much as we eat asparagus. They also call attention to the fact that asparagus is a lily.

Our good friend, Alex Alin, of Fullerton, says he cannot raise lilies because the pheasants eat them up. We hope the pheasants do not have so much of a liking for asparagus, otherwise the horticultural plots will not continue to be a pheasant sanctuary in the future as they are at present.

The "Florists Exchange" calls attention to the use of artificial light for house plants and states that florist concerns are now selling house plant containers which carry arrangements for furnishing light. With the use of such a lighting system many plants which require as much as 18 hours of sunlight, and are therefore of no value indoors with our short days, could be grown. In this connection remember that your house plants would be benefitted by moving them to the electric light you read or work by, and at the same time you would get added pleasure from them in the evening.

"Science" reports that measurements of the rate of sap flow in plants shows that it varies from almost nothing up to 150 feet per hour in the case of some vines.

J. H. Nichols, in "Better Homes and Gardens," speaking of the improvement of roses, mentions as three milestones, Mrs. Aaron Ward, Ophelia and Souvenir de Pernet. Late comers given special mention as best are, Countess Vandal, Souvenir, Mary Hart, Max. Louise and Edith Krause, Amelia Earhart, Grenoble, and William Orr. All these are high-grade cutting varieties and could only be grown in North Dakota by careful winter protection.

Mrs. C. E. Strong, in "Wisconsin Horticulture," recommends as the best double tulips: Blue Celeste, Electra and Vanderhoef. Others given high recommendations are Hobbema, Princess Mary and Avalon.

C. L. Fitch, in the Market Growers Journal, says all we have to do to get bright skins on our potatoes is to dig them as soon as the vines are dead.

The National Nurseryman says the following is an effective repellent to keep borers off of trees: 10 pounds C.P.O. soap (40%), 4 pounds Bentonite,

2 pounds flake naphthalene. Mix soap and naphthalene, boil gently to melt the naphthalene, stirring constantly. When quite stiff, remove from the fire, cool quickly. Stir in Bentonite and apply to trees with a brush. An application is needed every two or three weeks during June and July.

"The American Fruit Grower" reports that 150,000 bearing apple trees were cut out in north-central Washington this spring. This is equivalent to 2500 acres.

The white fly is one of the serious pests in greenhouses and on certain house plants in the home. We note a recent statement in the English "Gardening Illustrated" that in that country white fly parasites are for sale, and their use recommended. These are kinds of insects that destroy the white flies.

The following is a summary of the methods used by Paul E. Grant, of Menomonie, Wisconsin, in handling 140 acres of orchard. He prefers one-year, well-grown whips for planting. He prunes moderately, sprays four times, using lime sulfur and arsenate of lead, cultivates his young orchard. After the trees reach five years the orchard is sodded but nitrogen applied regularly. He says he makes a standing offer of \$5.00 for a wormy apple or \$1.00 for a scabby apple found in his orchard.

Those of you who have not grown zinnias in recent years will be surprised, I am sure, at the variety of sizes, colors, and shapes now available in this flower. As a bedding plant, the Zinnia ranks high for certain purposes. Well started plants begin showing color early and the blossoms continue their show throughout the whole summer. They are also quite effective as a cut flower if properly combined with other plants.

Many of our native cedars moved with a ball of earth after the ground had frozen several inches, grew well. If the trees are large they should be guyed with three or four wires to prevent them from shaking. The trunk of the tree where the wire is fastened should be wrapped with several thicknesses of burlap, so that the wire will not cut into the tree. Large spruce and pine should be always guyed to hold them in place. The shaking of the tree prevents the roots from securing a hold in the soil. The roots of these trees grow slow, and it often seems to be the most important point to remember in growing the trees.

How about the winter house bulbs? Paper Narcissus will brighten up the house when the snow is outside. You, of course, plan on timing them for bloom at different seasons as wanted. That is one thing which can be controlled.

Dell Rapids for Horticulturists, January 17-18.



THE WINTER CARE OF HOUSE PLANTS



Purley L. Keene

Due to the fact that the temperature, light, soil and atmospheric moisture is frequently unsatisfactory in homes, the growing of house plants meets with only a partial success. (Some housewives are very successful with them while others are not so successful and frequently give up in despair.) Most house plants, especially the flowering plants, need plenty of direct sunlight, a south win-

dow being ideal. Foliage plants thrive better in less intense sunlight and do very well in east and west windows where they get sunlight for a portion of the day. A few plants such as palms and ferns will do fairly well in subdued light from a north window if other conditions are favorable.

We are well aware of the fact that all house plants do not have the same temperature requirements. Commercial greenhouse growers of flowers modify the temperatures by growing those that like a relatively high temperature in one house and those that like lower temperatures in a different house, but in the home we are unable to make this adjustment and there the temperature problem can only be solved by providing an average temperature and by discontinuing such plants as demand temperatures which cannot be given them in the home. The best average temperature is 65 to 70 degrees F. in the day time and about 10 degrees lower at night. All plants do better where the night temperature is about 10 degrees lower than the day temperature. Rooms in which the night temperature drops below 55 degrees are not very satisfactory for plant growth and likewise rooms where the temperature during the day rises above 70 degrees.

The modern heating systems in our homes usually enable us to maintain the proper temperature but the air in the rooms is usually much too dry for the healthy growth of plants. Too dry an atmosphere is very frequently the cause of flowering house plants shedding their flower buds before they open. It may also be the cause of the premature yellowing and dropping of the leaves. The average living room in the home during the winter months will frequently show a relative humidity of from 20 to 30 percent. Very few plants can survive in such desert atmosphere. Most house plants need an atmosphere with a relative humidity of from 75 to 85 percent. Home owners may use a number of methods for remedying this situation such as the vaporizing of water

in pans set on the radiator or the use of radiator pans, the vaporizing of water in receptacles set on stoves, the vaporizing of water in the heating chamber of the hot air furnace, the syringing of the foliage. Some housewives help their house plants on specially prepared tables with metal trays filled with sand which is kept moist. The evaporation of water from the sand up through the foliage of the plants setting on it tends to keep the relative humidity of the air about the plants higher than it would be in other parts of the home. The increasing of the humidity of the home not only aids the plants but provides better living conditions for human beings.

Plants require oxygen for their best growth and should be given fresh air frequently. In other words, a window should be opened on warm days so that fresh air from the outside will pass through the foliage of the plants.

Watering is another factor which needs considerable attention. The over-watering of house plants by their caretakers is more frequently the cause of malnutrition and poor growth in their house plants than under-watering. No hard and fast rules on watering can be laid down for conditions very greatly in different homes. It must be remembered that soil in earthen pots dries out more rapidly than soil in larger containers such as ferneries, tubs and plant boxes. When the surface of the soil becomes dry, a watering is usually necessary. Whenever water is applied to the plants care should be taken to see that a sufficient quantity is supplied to moisten all the soil in the container. Let care be exercised so as not to add so much water that the soil becomes waterlogged for this prevents the roots of the plant from getting an adequate supply of oxygen. Usually a little water should be applied daily to house plants grown in pots while every second or third day is often enough to water plants in ferneries and plant boxes. A yellowing of the foliage and a sickly appearance of the plant may indicate too much moisture in the soil. A wilting of the foliage usually indicates a lack of moisture. No plant should be grown in a water tight container. If jardiniers are used the plant should be potted in an earthen pot which is set inside of the jardinier. If tin cans or other similar water tight containers are used, holes sufficiently large to give free passage of water through them should be made in the bottom before potting or planting the plants in them.

In connection with watering we must call attention to the importance of good drainage. A piece of broken pottery should be placed over the hole in the bottom of the pot and a half inch or inch of course gravel or charcoal then placed in the pot followed by the soil and the plant. In the case of ferneries it is much better to plant the plants in pots and then plunge the pots of plants



in moss or peat or some other similar material in the fernery. If the fernery container itself is filled with soil and the plants planted in that, then it becomes necessary to have two containers so that drainage out of the inside container may be caught in the outside container. There should be an inch of space between the bottoms of the two containers.

In a series of experiments conducted by Linus H. Jones, Research Professor of Botany at the Massachusetts Experiment Station, it was discovered that the old tin can made one of the best containers for house plants. We have been taught for many years that we must use a porous or clay flower pot to insure aeration of the soil and adequate drainage. Now comes along Mr. Jones and informs us that he has proven by experimentation that this teaching has been all wrong, that the old tin can is still the most satisfactory container that can be used. He called attention to the fact that the porous clay pot acts as a wick constantly removing moisture from the soil and passing it into an atmosphere that is hungry for moisture. The tin can or any similar container such as glazed pots, waxed paper pots, and glass containers, will not permit the free passing of the water through them which lessens the loss of moisture from the soil by evaporation of the moisture into dry atmosphere. When the porous clay pot is used in the greenhouse it is kept damp on the outside of the pot by more frequent watering. Moreover, the atmosphere in a greenhouse has a much higher relative humidity so that the tendency for the moisture to evaporate out of the soil is less than it would be in the home where the air is dry. By placing the porous pot in a damp layer of sphagnum moss, it will obtain moisture from the moss and not from the soil.

Glazed pots, glass and rubber pots are now obtainable on the market. The rubber pots were found by Professor Jones to be especially desirable because they were attractive in color, non-breakable, and could be painted to harmonize well with foliage and flower plants. He further states that cultural conditions must be adapted to the non-porous pots, that the plant should be watered less frequently and with the added precaution that the soil in such containers should never be watered when it is wet to the touch. Should you have porous clay pots that you might wish to make non-porous, they may be made so by painting them.

Soil for house plants differs from garden soil. The garden soil may contain a sufficient amount of plant food but usually lacks the proper physical characteristics required for pot culture. Poor drainage, baking and cracking of the soil, are the chief troubles encountered when ordinary loam soil is used. These troubles may be corrected by adding sand and organic matter to the gar-

den soil. A mixture of one-third garden loam, one-third well rotted manure and one-third clean sand will be satisfactory for most house plants. The addition of a little bone-meal will provide additional plant food. Five or six level tablespoons full would be sufficient for a peck of soil, one teaspoonful for a five or six inch pot.

SOUTH DAKOTA SOCIETY MEETS

January 17th and 18th the South Dakota Society will meet in Dell Rapids. The meeting will be held in the City Auditorium. For those of you who are not acquainted with Dell Rapids, we will say that Dell Rapids is a public-spirited little city and they are bubbling over with hospitality.

They have a band that will furnish music and with the slightest suggestion no doubt the glee club from the school will entertain us. You will be well aware that they are not just practicing. Their graciousness displayed just makes you feel that every little thing is just done for you personally.

The Episcopal Guild will attend to the big feature of the first evening, the banquet. You will not only enjoy eating the good food, but a number of the members will give short talks which at times may appear to be almost personal, but will be greatly enjoyed.

Do not forget to have your questions ready for the question box at 11:30 each day. There will be people versed in all lines of horticulture who will answer these questions.

PROGRAM OF MEETING

Wednesday Morning

- 10:00 Address of Welcome—Mayor Henderson.
- 10:20 President's Message—John S. Robertson.
- 10:40 Neglecting Our Native Plants—J. B. Taylor.
- 11:00 Nomination of Officers; Appointment of committees.
- 11:30 Flower Shows—Charles McCaffree.
- 11:45—Question box.

Wednesday Afternoon

- 1:30 How Things Are Inherited—A. F. Yeager.
- 2:00 Difficulties in the Germination of Seeds, Prof. Ward L. Miller.
- 2:20 Newer Things for Urban Home Grounds—T. M. Bailey.
- 2:45 Roses—John Liebl.
- 3:10 Difficulties Growing 75 acres of potatoes the past Season—O. S. Jones.
- 3:30 Activities of the Sioux Falls' Peony Society—Mrs. J. H. Pirch.
- 3:50 The Outdoor Living Room, Prof. Purley L. Keene.
- 4:10 The Relation of Horticulture to the National Recovery Program—Dr. N. E. Hanson.
- 4:35 Growing Perennials from seed—Mrs. Mary Simpson.

Wednesday Evening

6:30 Annual Banquet—W. A. Simmons, Toastmaster.

Thursday Morning

9:00 Varieties and Growing of Vegetables—F. X. Wallner.

9:20 Romance of the Garden—Mrs. George Jorgenson.

9:40 Growing a Windbreak under Adverse Conditions—Lawrence Elsinger.

10:00 Jewels of the Plains—Claude A. Barr.

10:20 Relation of Garden Clubs and Nurserymen—L. D. Martelle.

10:40 Results of Yard and Garden Contest sponsored by Cosmopolitan—E. A. Gates.

11:10 Honey Market Picking Up—G. E. Roberts.

11:30 Chinese Elm—Mrs. James Nesby.

Thursday Afternoon

1:00 Our Garden Club, Mrs. Pearl Olson.

1:15 Wild Flowers, Mrs. Frank Briley.

1:30 Importance of Landscape Architecture on Public Grounds—H. N. Dybvig.

1:50 Landscaping Artificial Lakes in South Dakota—Max Pfaender.

2:15 The Newer Things in Horticulture—A. N. Shafer.

2:40 Bee Men Feeling Much Better—Ben Ginsbach.

3:00 Illustrated Lecture—Miss Gertrude Webster.

3:30 My Bird Garden in Sioux Falls—Mrs. D. B. Getty.

3:50 Committee Reports.

4:10 How Are We to Save The Trees and Shrubs—H. S. Hilleboe.

Rev. Henry Jamison, congregational pastor at Newell, planted plum and apple trees on the parsonage property when he began his pastorate 15 years ago. The State church bulletin mentions the family could not use all the fruit this season and the pastor is reported as saying "What they couldn't can they used to buy friends." A pastor who is disposed to grow fruits is not the kind who has to buy friends. Mr. Jamison started the planting at his first pastorate, Beresford, which continued 20 years and he is still young enough to do a lot of planting though the Miss Jamison who has given such invaluable service to education in our state, is his daughter.

Tulips and lilies and even peonies have been planted in November and grown nicely in the spring. If planting has been neglected until now it seems better to even take a late start than postpone a year—if it doesn't freeze up. Evergreens are o. k. for fall and winter planting.

EXTRACTS FROM THE DIARY OF A TRAVELLING MAN.

W. A. Simmons

Latest news of the International Peace Garden: "On October 16th, special meetings of International Peace Garden, Inc., were held for the purpose of amending the By-Laws (in accordance with the requests of the governments of the state of North Dakota and of Manitoba); of appointing Alfred S. Dale, State Treasurer of the state of North Dakota, special agent to complete the transaction of purchasing the farm lands for which money had been appropriated by his state; and of electing a new board of directors, international in character. The new board consists of Donald J. Crighton and John Barnet, representing the National Association of Gardeners, Chas. MacLachlan and C. E. Danielson, representing North Dakota; J. W. Parmley, South Dakota, (for United States at large); A Gordon Buckingham and H. A. McNeill, representing Manitoba; W. V. Udall, Manitoba; and W. E. Groves, Ontario, (for Canada at large). The board will hold a meeting on the site of the Peace Garden during the month of November and lay plans for its development." **Gardeners Chronicle.**

If all of the members of the board are of the high quality of the two of my acquaintance, Mr. C. E. Danielson of Minot and Mr. J. W. Parmley of Ipswich, the country could have been combed without improving its personnel.

Oct. 19th: The ever lovely Black Hills are especially so at this season, when in places the bright colors of autumn leaves mingle with the constant dark green of pines and spruces.

Driving through our great State park my attention was first attracted by about fifty wild turkeys that were ranging around near the zoo. Walking around calmly with heads close to the ground apparently with thoughts centered solely on the grim business of making a living despite the depression, they paid absolutely no attention to motor cars or persons. As their coloration is identical with that of the common domestic turkey, I could hardly believe they were wild until assured by a resident that they were descendants of ones traded by a southern state on the basis of one turkey for ten pheasants some years ago.

I was told that they were absolutely on their own and had reared their babies without benefit of dole or ration. Security has changed in large measure their wild nature, though sad to say, this security is not entirely inviolate. I was told of one traveller who shot four of them but fortunately was caught. A shot gun, a rifle, and a revolver found in his car, as well as the birds, were confiscated and a fine of \$50 was assessed.

My animal friends at the zoo always seem glad



to see me and I always have about two pounds of candy with me to renew and cement that friendship. Three little prairie dogs sat up straight as close as possible to the wire netting like three little statues and ate candy from my hand. The rascally little coons seemed each to be intent on getting all of the sweets and not willing to share any of it with their bretheren, strongly reminding one of human employers.

The bears, though so fat they could hardly waddle, were glad for some extra calories to tide them over their long winter sleep. The little coyotes were friendly as usual and even the red wolf seemed more friendly than on my last visit. But the cross between the dog and the wolf was still the wildest animal there and refused to eat candy or to have anything to do with me. Even the two little red foxes, though wild at first, showed that this was but a pretense, as after sampling some of the candy thrown to them, they came up to get more from my hand.

A pair of groundhogs are kept in a cage so residents of the park can get the low down on the weather in early February, but these seemed too preoccupied by their responsibilities to pay much attention to visitors.

In their cage was one of the little toy-size chipmunks that visitors to the Hills often see high-tailing it accross the highways. Like Englishmen, he evidently considered his house his castle and immediately sought its sanctuary on the appearance of such a dangerous animal as a travelling man.

But of all the animals my favorite and especial friend is King, the great Lobo gray wolf, and I believe he got half the candy. Until this year a wide mesh netting permitted one to reach in and pet the great fine head, and King always seemed as pleased as a friendly dog at these carresses, but now a one-inch mesh netting on all the cages precludes this. But one can still hold the candy for him to take and he can still lick part of one's hand.

On my leaving, all of the wolves and coyotes joined voice in a parting serenade and there was plenty of volume to it. King started the music and the others joined in whole heartedly and soulfully. Was it just a friendly way of saying good-bye and come again, or was it a sorrowful premonition that perhaps we would not again meet?

Hot Springs, South Dakota, October 21st: Our President, John Robertson, came in for a fine, long visit this evening, and I felt like a very gifted writer when he brought me a nice, large sack of his wonderful Cortland apples and two gallon jugs of his wonderful cider. I was glad to find him in reasonably good health despite the hard work in the harvesting of a large crop of apples and converting it into a medium which could keep

many veterans in the Soldiers' homes in good health and spirits.

Oct. 23rd: Mr. Claude A. Barr, cultured gentleman and gifted writer, some of whose articles have appeared in our magazine and some in more pretentious horticulture publications, has a very pretty farm home on the gumbo plain southeast of Smithwick, South Dakota, where the large orchard and careful planting would attract attention anywhere.

His interest was early aroused in the many fine wild flowers found in the Black Hills and the surrounding plains and the best of these he has naturalized in his garden. His particular favorite is the lovely Mariposa tulip, which he raises from seed and sells extensively to eastern flower lovers. His many articles in **House and Garden** and other eastern magazines have brought him many orders for western wild flowers.

I found him today busy modifying his gumbo soil with sand and leaf mold and setting out the fragile roots and pips of various wild flowers, all of which he knows from careful observation and much study. One wishing to see the best of our wild flowers need go no further than his garden, for there they bloom at their best, for their devoted friend.

Nov. 8th: Mr. Fitzpatrick, druggist at Tabor, South Dakota, whose father was the first white child born at Fort Buford, North Dakota, tells me that two of Custer's troopers are buried in the cemetery at old Bon Homme. They died during the march of the regiment up the river in 1872, from the effects of the April blizzard which they encountered at Yankton.

With the new stream-lined Ford V8 it is claimed one can pass anything but a filling station.

The American Fruit Grower has recently changed hands and is now being published in Cleveland, Ohio, under the management of Dean Halliday, Managing Editor, and J. T. Bregger, Editor-in Chief. While always valuable, it seems much improved, and I believe every one interested in fruit growing would appreciate it. The subscription price is fifty cents per year or one dollar for three years. Subscriptions can be sent direct to our secretary, who will gladly forward them.

Nov. 11th: If you think living together as man and wife for sixty years is easy, just try it. Few that have tried it once could be talked into doing it again. However, our friends, the Downers, although having accomplished this feat, are not contemplating a divorce or other form of separation.

Mr. John M. Downer has lived down or outgrown most of his boyish "Foolishment" and to Alie's great credit he still has plenty of hair. There are no dents in her rolling pin and consequently no artificial or abnormal bumps on his



head. He is as straight physically as he has always been in his business dealings, and anyone knowing him knows that the statement could not possibly be made stronger.

They attend most of our annual meetings, and when passing along U. S. Highway No. 18 I always look forward to a pleasant visit at their home. Long may they be with us.

NOV. 12th: The cider which John Robertson gave me was as sweet and innocent when I received it as a new-married bride, but it now packs a most terrible wallop. I have heard rumors that some brides get that way too in the course of time. How can we poor men keep both sweet.

HYACINTHUS CANDICANS

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

We have learned many lessons from the drouth and heat of the past months. Many of the flowers we have grown and enjoyed to the full in years past, have been a disappointment and as a consequence we look about for something else to fill the places until such time as nature again smiles upon us.

Blooming at this time (Sept.) as well as for the past month is another tender bulb, "Hyacinthus Candicans, Galtonias, a very tropical looking plant with long glossy green leaves forming the base. From this arises a very strong green stalk with a large bunch of buds at the top. After the stalk has attained the height of two feet or more, the buds emerged from scapes and became beautiful white pendulous waxen bells, covering completely the stalk, as it grows, and continues in that way until a height of three or four feet is attained. The bells last about a week, then seeds form, which, if removed at once will extend the blooming season.

Before the first stalks have completed their blooming cycle, a new lot are pushing up, thus prolonging the flowering. This bulb used as a background to low growing colorful flowers is very effective. As a suggestion, use the perennial "Chinese Delphinium" in the blue shades with the pink "Saponaria Ocymoides." The annual larkspurs would also combine nicely.

Hyacinthus Candicans bulbs, like the ones previously mentioned in our magazine, are very easily cared for. In spring after weather is settled, plant (in group or line formation) six inches deep in good soil, water well and before many days you will be rewarded by a strong green shoot appearing very much like the ordinary hyacinth. After killed by frost in the autumn, remove the bulbs, dry off, and place in a box of sand for their long winter sleep. The bulbs are very strong and are quite like restless children, anxious to awaken early. They increase rather slowly, only one or two, to the original bulb each year, but the older

bulbs grow larger and stronger each season, and thus produce more blooms. They have been a real pleasure this year, as the bulbs retain the moisture so watering copiously once a week or more seems to keep them in perfect condition. Another pleasant feature is they are free from insect pests. Try these another year, if not already familiar with them.

THE MARSH HAWK

O. A. Stevens

Most of our birds have been fortunate in receiving distinctive names. The marsh hawk is one of our commonest summer resident hawks and often is seen sailing low over fields or low meadows. The hawk seems not to have received as many names in America as in Europe. With us any large hawk is a "chicken hawk," an especially large one is an "eagle" and the rest pass unnamed. In Europe the species of the marsh hawk group are known as "harriers." The one corresponding most closely to our bird is called "hen harrier" in England, though W. H. Hudson says the origin of the name is unknown. In France it is known as "Saint Martin's Buzzard" and in Germany as "grain kite."

A distinctive character of the marsh hawk is the white patch at the base of the tail which usually can be seen as the bird turns in its low flight. In birds of prey the female is larger than the male and in this species the sexes are quite differently colored, the male being gray and the female brown. The marsh hawks are very nearly as large in length and wing-spread as the red-tails and rough-legs, but are much lighter in weight.

These are birds of wide distribution. They are found nesting over nearly all of North America excepting the south-eastern United States, and in winter are reported from British Columbia, western Montana and South Dakota, southern Wisconsin and New York to Cuba and Colombia. Dr. Alexander Wetmore found them not common in Cuba. In our own region they are among the last birds to leave in the fall and the first to reappear in the spring. In fact they leave in the beginning of winter and return toward the end of winter. Gale Monson at Argusville, North Dakota, finds that their average date of spring arrival is February 22 and the latest seen in the fall about November 15. In mild years he has seen them on December 23 and January 5. A young bird banded by him in 1931 was killed the following January at Guantanamo, Cuba.

The nests of the marsh hawks are placed on the ground in meadows or marshes and usually consist of only a small pile of grass, sticks, or other material. Four to six eggs are generally laid and incubation lasts nearly four weeks, with



several days between hatching of the first and last eggs. The male does not assist with the eggs except to bring food to the female or to stand guard for a short time. Dr. Thos. S. Roberts in Minnesota, describes the female rising to catch mice dropped to her by the male. The downy youngsters are awkward in their movements for they cannot stand on their feet, and if disturbed will flop away through the grass. They spend about six weeks on or near the nest.

Marsh hawks are regarded by some people as destructive to game birds, but in general the evidence does not support this belief. Mice, ground squirrels, etc., make up about two-thirds of their food. Dr. A. K. Fisher found poultry and game birds in only 7 out of 124 stomachs, and stated that the marsh hawk was unquestionably one of the most beneficial of hawks. Recently Mr. A. L. Stoddard, studying the bob-white in Georgia, found traces of them only four times in the marsh hawk pellets, compared with 925 times for cotton rats which were destructive to the bob-whites. The hawk would have little chance of capturing a bird like the bob-white under ordinary circumstances.

They often hunt frogs in the marshes, and hunting in duck territory, they are likely to be accused of hunting ducks. Indeed they are not slow to take advantage of crippled ducks and the hunter who persecutes the hawks is at the same time encouraging them, for they feed upon the dead or injured birds. A Florida correspondent of Major Bendire reported that he often had seen the hawks come at the report of his gun and attempt to secure the duck he had shot. They are not birds of powerful nor swift movement. They do not pursue swiftly moving objects but depend upon capturing their prey by surprise. Col. N. S. Goss wrote that he had often seen a hen drive the hawk away from the chicks.

(A story of a marsh hawk nest in North Dakota by the well known author Florence Merriam Bailey, was published in the Nov.-Dec. number of Bird Lore for 1915.)

SEED POTATOES

A. F. Yeager, Fargo, North Dakota

Good seed is one of the most important factors in the production of a paying crop of potatoes. Many people do not realize that it is possible for a bushel of potatoes to be a prize winner on the show table, or entirely satisfactory to a housewife for cooking purposes, and still be almost worthless for planting.

One of the principal differences between good seed potatoes and bad ones lies in the amount of disease they carry. Seed-borne potato diseases may be divided into three groups, depending upon the place in which they are carried by the

seed. First, those diseases carried on the surface of the tuber. One such disease we all know and recognize is **potato scab**. Untreated scabby potatoes used for seed purposes are likely to produce a scabby crop the following season. Such a crop may not be saleable even as table stock because the scab affects the table quality. At the same time the soil is infected with the disease.

Another potato disease borne on the surface of the tuber is **rhizoctonia**. It is also called **black scurf**. The disease does not penetrate beneath the surface of the tuber, so it does not detract greatly from the culinary value of the potato. The housewife is likely to consider it dirt which does not wash off easily. The damage from black scurf comes largely in the reduction of the stand. When the potatoes are planted disease rots off the sprouts. Even the sprouts which do reach the surface may be partly girdled by the disease and later on produce a poorer crop, or a lot of inferior potatoes near the surface of the ground. They may produce some of the small tubers at the axis of the leaves above the ground, a condition which is called "little potatoes."

Those two diseases, scab and rhizoctonia, may be killed by treating the potatoes with one of the effective methods such as hot formaldehyde or corrosive sublimate. Specific directions as to the method of treating potatoes may be had by writing the Publications Department of the Agricultural College for circular No. 110. Unfortunately, these diseases also live from year to year in the ground; so potatoes should not be grown continuously on the same field. It is commonly recommended not to raise potatoes on the same land more than once in four years.

Because scab does less damage on acid soils and because organic matter increases the acidity of a soil, the plowing under of a green manure crop the year before potatoes are grown may be beneficial.

The second group of diseases carried by the seed are those we can see inside the potato by cutting off about a quarter of an inch of the stem end with a sharp knife. Indications of disease are brown spots in the flesh or a brown ring. One disease indicated by this discoloration is **black leg**. It may cause a tuber rot producing a disagreeable odor. Black leg affected seed pieces are likely to rot in the ground producing poor stands. Even if the plant lives thru the year the potatoes produced are likely to again carry the disease within them.

The second internally visible disease of potatoes is **fusarium**. It is indicated by the same discoloration as black leg. Potatoes which show such brown areas should be discarded as seed and not planted.

The third group of potato diseases is the viruses which cause potatoes to run out. They are



called degenerative disease. We often cannot detect these by looking at the potato itself. The two most important diseases of this group are **mosaic**, which causes plants to be stunted and of a yellow mottled color, resulting in a very unproductive plant; and **spindle tuber**, a disease which causes potatoes to be much longer than normal and to have much deeper eyes. These running out diseases are transmitted from one plant to another in the field by sucking insects.

There are two methods of controlling these diseases. The first is by pulling out and destroying all unhealthy plants as quickly as you can recognize them after the plants are up. In this connection, it is much easier to recognize the diseased plants if the seed pieces from one tuber are planted together in succession. The second method of avoiding trouble from these diseases is to plant potatoes known to be free from these troubles.

Potatoes certified by the state seed department have been found by them to be practically free from these running out diseases. This is one of the greatest reasons why certified potatoes bring a higher price on the market. The use of certified seed will ordinarily result in a yield of more bushels of marketable potatoes per acre; hence the planter can afford to pay more for them as seed. In addition, there is the possibility of producing good seed for another year from such stock. Such diseases as this are not an unmixed evil. It is because of their presence and rapid spread in the South that we have a good seed market in that section for our product.

If you have good potatoes to plant and they have been treated, the next thing you will be interested in is their preparation for planting. Incidentally, treating should be done before the potatoes are cut. According to the United States department of agriculture, potatoes may be cut some weeks in advance of planting time. If then handled properly, by callousing at a temperature of from 50 to 60 degrees, they will give better yields than freshly cut seed.

Potatoes, while really not seeds, have the same essential features. They carry a dormant sprout which is located in the eye, and a supply of stored food to feed this sprout until it gets above ground. For that matter, it has recently been found that this stored food actually increases the growth of the plant until it is fully half grown. Since a sprout is necessary, every seed piece must have at least one eye, but more than one eye will not be detrimental. It is the size you cut the seed piece that determines the amount of stored food material which can be used in the production of a sprout. The larger the seed pieces the larger the sprout will be, the more it will be able to overcome unfavorable growing conditions, and the

larger the yield the plant is likely to produce.

It is customary in Europe to plant much larger seed pieces than in America. British gardeners may plant whole four-ounce potatoes. While one will get a larger yield per acre by planting two-ounce seed pieces instead of one-ounce, the yield is not likely to be doubled. Hence experiments indicate that it depends to some extent upon the price of seed as to whether the seed piece should be large or small. When seed potatoes are cheap it will likely be profitable to use larger pieces than ordinarily is done; whereas if the potatoes are very high priced at planting time one might make the seed pieces smaller and spend more time on thorough and careful preparation of the seed bed.

Because the eastern part of North Dakota is likely to get more rainfall, the tendency is to use smaller seed pieces planted close together, perhaps even as small as one ounce. Whereas with less moisture the size of the seed piece to be used should be larger and the distance between plants made greater. Seed is the foundation of the crop, so it behooves us to be very careful in laying a good foundation.

NOTES

The November 15th "American Nurserymen" gives some history of the Dutch Elm Disease in the United States and in the European countries. The disease first appeared at Cleveland, Ohio, in 1930.

The latest reports showed that this year 603 infected trees were found in New Jersey; 46 infected trees were found in eastern New York; one in Connecticut; one in Maryland, and one this year in Ohio. Seven were found in Ohio in 1930 - 1931. The only known carrier is a small beetle (*Scolytus Multistriatus*) which infests the bark of the tree. The beetle is found in the territory of Boston and as far South as Philadelphia. The disease apparently cannot spread from a diseased tree to a healthy tree without the aid of this beetle. A closely related insect which is more commonly connected with this disease is found in Europe but apparently has not been found in this country.

Burl Elm logs imported for use usually in veneer plants can be shipped into the United States under U. S. quarantine effective October 21, 1933. The quarantine provides that the elm burl logs may be shipped in this country provided they arrive free from bark so that insect carriers cannot be introduced. The logs must also be given a hot water treatment or other approved treatment, so that the Dutch Elm fungus in the logs will be killed.

"More than 300 Nurserymen in New Jersey have voluntarily signed an agreement prepared



by the State Department of Agriculture to the effect that they will not ship out of the area any elm nursery stock until a further study can be made, even though no case of the Dutch Elm Disease has been found in any nursery. This makes unnecessary the imposition of a quarantine against New Jersey stock by other states in the absence of a federal quarantine or inspection service.

Origin of the Disease

"This disease was unknown until it appeared in Holland in 1919. Since then it has spread through Belgium and France to northern Italy, through Germany southeastward to the Balkans, northward into Scandinavia and in 1927 across the channel into England. The European history of this infection is not reassuring. One report from Germany indicates that they have given up hope of saving their elm trees, and apparently similar conditions exist in France. The disease is spreading in England and occurs in an epidemic form in Holland. Everywhere it is killing the elms. It has been suggested that this disease in America may parallel the chestnut blight affection of a generation ago. The latter has practically wiped out the chestnut. However, it hardly seems as though this is likely to occur with the elms, for every effort is being made to arouse the public to the dangerous character of the disease and immediately to eradicate the disease wherever it is found."

W. E. Murray of Missoula, Mont. writes in the "National Nurserymen" in regard to the established state nurseries under the Clark-McNary Act:

"For the Nurserymen to agree among themselves and with the government as to what constitutes fair competition, and then to allow a law to remain on the statute books that leaves the government free to sell nursery products at cost of production or less, seems like a poor bargain for the Nurserymen."

This is about the last call for mulching plants for winter protection. One will often find that plants ordinarily not mulched will benefit from mulching the first few years after being planted.

The roots of an old apple tree may not be injured by freezing but the same tree when first set out will be injured and if other conditions are unfavorable for growing, the tree may die. Mr. Robertson usually leaves a part of a row of raspberries uncovered during the winter. These plants may leaf out to the tips of the canes, and to the average person appear not to have been injured, but they produce lighter crops and the berries are smaller.

The peony usually is regarded as a hardy plant, not needing any mulch, but mulch some of the newly planted roots, and leave some unmulched, and notice the difference next summer. One thing must be remembered when mulching woody

plants; if a heavy mulch is applied during the middle or late winter, after the ground has frozen say from 2 to 4 feet, in depth, it may do more harm than good. The mulch will hold this frost in the ground long after the top of the tree has started growth. The roots cannot send up the necessary food and water and the tree is injured far more than it would have been had the mulch not been applied. The top starves because the roots are frozen and inactive. The idea in mulching is to prevent the ground from freezing in the first place. Manure from the barns and farm lots should be applied to the gardens and lawns to good advantage during winter months. Fresh manure well spread thinly will do no harm if applied after the ground is well frozen. It will be disintegrated by spring to such an extent that the plants will not suffer from the "burning," often caused by fresh manure.

The sand can be hauled during the winter and laid on beds on which the soil is very heavy. The sand cannot be worked into the soil until the soil thaws in the spring, but the work of hauling the sand can be done in the winter when one usually has more time.

The hauling of material and the construction of lily pools can well be done during the late fall and early winter. If the cement work is done during a warm day and then covered with alternate layers of hay or straw and soil there will be no ill effects from frost. The material may also be gotten ready and the pool built as soon as the frost leaves the soil in the spring. Always remember that our native rocks are exceptionally beautiful when properly used in making pools. There is no reason why we should not have more fireplaces made from our native stone.

While the pictures are still fresh in our mind, it would be well to list a few of the shrubs and trees that furnish us color during the fall and winter. If one keeps a little "want book" in which the names of the plants and the varieties are recorded, it will save much time next spring when ordering.

The one scene that always impresses me as gorgeous, is a group of Birch in the Black Hills with a background of dark green spruce with their spires apparently rising into the clouds.

The oak with its beautifully colored leaves that cling to the branches practically all winter always attract ones attention.

For real bright color during the fall, the sumac, and in some cases, the woodvine, give the most vivid picture of the season.

The dogwoods (*Sorbus alba* being the brightest colored) furnish more of the bright red color. The golden willow is another highly colored plant.

The viburnum, bittersweet, cotoneasters, coal berries and snowberries have fruit that adds color to the landscape.