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Department of Agronomy, Horticulture, and Plant
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SOUTH DAKOTA HORTICULTURIST

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SOUTH DAKOTA HORTICULTURIST

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Treasurer—H. N. Dybvig.....Colton, S. D.
Librarian—Chas. McCaffree.....Sioux Falls, S. D.

TAKING THE CROP WITHOUT THE BEE'S KNOWLEDGE

The method of taking off the crop, now developed by the beekeepers, disorganizes a hive as little as possible, this obviates robbing and will not interrupt the bees in their work; furthermore, it makes the work of removing the crop a great deal more pleasant because if carefully done, the bees need not be greatly disturbed.

This method is by using bee escape boards. These boards consist of wooden frames that just fit on top of a super or hive body. At two opposite corners on this framework are inserted bee escapes. These bee escapes allow the bees to pass through but, owing to the construction of the escape, they cannot return. The remainder of the escape board should be wire screening. Some bee-keepers use a honey board with a single bee escape in the center, in fact there are various types of escape boards, though they all work on the principle of the one described.

The escape boards are placed on the hives below the lowest super that it is desired to remove. Care must be taken that there be no brood in the supers placed above an escape. The bees will not leave brood. Care must also be taken that there are no chinks or holes in the supers above an escape for, as the bees leave through the escapes, the supers become unprotected and robbing may start. An empty super or half super is generally given when the escape is put on as the hive will become too crowded.

Only ripe honey should be put above an escape. Unfinished combs should be left below to be finished off by the bees.

If the weather is bright and the bees are active it should be possible to take off the supers within twenty-four or forty-eight hours after putting on the escapes, and find no bees in them.—W. G. Le Maistre, Central Experimental Farm, Ottawa, Ont.

NOTICE

Some of the Garden Clubs organized this year have not reported the number of members they have. You may win one of the prize peonies. Let us hear from you.

CONTEST FOR BEE CLUB MEMBERS

The Editor will give the following prizes to Bee Club members:

First Prize—One complete ten frame standard hive.

Second Prize—One two-pound package of bees.

The contest closes October 1, 1923. The first prize will be given to the member sending in the best essay on Bee Club work. Choose your own subject. The thought contained in the essay will be given more weight than the composition. The second prize will be given to the member securing the largest number of pounds of honey from one colony.

Will the losers get stung? Let us hope not.

THE SUNSHINE STATE'S BEST FLOWER

By Chas. McCaffree, Librarian South Dakota Horticultural Society

A happy home is the highest attainment in the Sunshine State. No place may be homelike without flowers and shrubs and trees. The best flower for each person is, of course, the one enjoyed the most. But one is easily the best of the spring flowers and may be proposed as queen of all the brilliant galaxy of bloom suited to South Dakota.



Anemone



Crown



Semi-Rose



Bomb



Single

Some Types of Peony Blossoms

The modern peony has such mammoth blooms, such fragrance, so great variety of color, is hardy and requires so little care that it heads the list for real satisfaction. Its hardiness has an appeal and its courage in almost crowding the tardy snow banks brings our admiration as it accompanies the buoyancy of spring. The peony is a perennial, it stays put. One planting is sufficient for a life time.

As the best planting season is from now until freezing this is the time to comb over the peony lore and see if the interest and charm of our homes may be increased by adding some of these choicest flowers. This is written in the hope of reaching some who are not informed of the peony's attractions but have the good taste to enjoy them.

The peony requires no winter protection except it may be benefited by a light covering the year it is transplanted. It is grown under any condition and in any soil which will produce potatoes. Good soil and thorough cultivation will add to the flowering of the peony just as they will increase the vegetable crop. The peony blooms have come and made us happy by the time hot summer arrives so we may be quite certain of suitable weather conditions. The hardiness and dependability are the first recommendations but there are many others.

The peony is our largest fine flower. Blooms of eight to ten inches in diameter are common in the best varieties. In shape they range in almost every conceivable degree from the flat singles to the great bombs with petals piled higher than the width. There are the full bloom rose shape, half rose, anemone, Japanese and singles.

Colors just riot through white, cream, light and dark pink, light red, dark red and crimson shading into black. One is described as Havana brown, one as yellow. The producers will likely create some to represent all the primary colors for there is some great experimental work under way.

A whole month of bloom is common where care is used in selecting

from the early blooming and late blooming classes. With planting in very warm sheltered places and exposed or slightly shaded location this may be further increased. The writer had bloom for five weeks this season. And furthermore by keeping the earlier blooms in cold storage the entire list of varieties may be brought into a show or kept for house bouquets.

The first year blossoms are not dependable as to type but at one show Mr. Brand gave a bloom from a one year plant, the prize as the best single flower in the show.

Any of the South Dakota nurseries will supply peony roots and as with any plants it is not only good business but it is the best horticultural practice to buy right in our own state. The catalogues will give specific information.

In no other flower can the inexperienced get so good an idea of the desirability. Experts have rated all the well known varieties on what are called the "Six Points of Excellence" as follows:

Color	2.0 points
Size	2.0 points
Stem	2.0 points
Form	1.5 points
Substance	1.5 points
Fragrance	1.0 points

Only a limited number have been rated as high as 9.0 and those will have all the points in a good degree. If perfect in all the divisions except fragrance and without any score for that the variety could be given only 9.0. The highest rating given yet is 9.9 and only one variety, Le Cygne, has secured that. Buying any variety of 9.0 or above is safe and many of the grandest varieties which have made peony history are rated considerably below that.

But the best feature of the peony is the very moderate cost, the small investment necessary for securing large returns. Some varieties are listed at \$50.00 to \$100.00 but it is scarcity which permits such a price and only the real fans pay it. As fine flowers as anyone will get may be plucked from the 75c to \$1.00 plants and the \$100.00 fans have some of these in their gardens also. You don't need to pay more but there are a lot of fine varieties recently introduced at from \$1.00 to \$5.00. There is a certain vogue in peonies just as there are styles in women's hats. But it takes much more space than a single magazine article to cover that field.

A. M. Brand, the leading American originator of peonies, gives the growers some suggestions which are, of course, authoritative. He advises: "A back yard rather than a front yard flower because of its antipathy to both trees and too much grass, the peony should receive the full sun at least half a day.

"The size of the root is of particular importance. It is best to plant two to five eye divisions, and small roots are to be preferred to large ones; some which have been divided from the year before are recommended. The peony root reaches its maximum at three years and will not produce better blooms at any time later."

We should surely brighten our homes by any means at hand and liberal planting of peonies will help.

The big bombs of beauty bring bounteous blessings? Why not enjoy them?

"Flowers with the sweetest odors
Filled all the sunny air,
And not alone refreshed the sense,
But stole the mind from care."

—Longfellow.

EXTRACTS FROM THE DIARY OF A TRAVELING MAN

W. A. Simmons

JULY 9—Was coming into Milbank today when I spied a sign that said "Speed Limit 15 Miles", so I immediately slowed down to twenty miles per hour. Have always found I could laugh off five miles per hour but have never attempted any greater excess for fear the police might be lacking in a sense of humor. Soon I came to a lovely red climbing rose on a trellis and knew some good horticulturist must be near. It was the home of our friend, Dr. Ross, but absence of body saved him from a visitation, but he cannot remain away all summer, and I hereby serve notice on him that I shall return later on and compel him to show me over his beautiful place.

With each passing year I am appreciating more the Black Ben as a very desirable summer eating apple. Let me hasten to explain that we raise them one summer and eat them the next. We have but one top-worked branch of this variety but as it is a dependable annual bearer, it gives us something over a box per year. We put them in storage in October and withdraw them in July, and we then find a great transformation has been wrought in them during their period in storage. Gone is all acidity and in its place is a pleasing flavor, making them not at all hard to take and about the best eating apple obtainable at that time.

At Abercrombie, North Dakota, dwells Dr. H. C. Cooper, for five years the able President of the North Dakota Horticultural Society and one of the most lovable of men. During office hours he relieves the aching molars of the residents of his district, but outside of those hours, he is the most enthusiastic plant breeder, working with peonies, iris, glads and pansies, and many are the promising seedlings he has to show in his extensive gardens. These hours are quite extensive too, as he rises at five a. m. and the dusk is more than likely to find him still with his beloved plants. As he has many high-priced plants in his collection, he has every plant numbered instead of named on the name stakes. This tends to discourage the light fingered gentry from appropriating his valuable stock. He has made a very deep study of the peony and has many interesting things to relate as a result of original experiments. He has found that the peony can be made to bloom in the autumn also if all the foliage is cut off close to the ground after its first blossoming period is over. If a peony comes up in the spring with diseased and yellowed foliage he splashes gasoline on it and burns it off. This seems to be an effective treatment as in every case the plant has hastened to throw up another growth of perfectly healthy stalks and leaves.

He believes the peony produces more eyes or root buds than are ordinarily forced into growth and this accounts for its promptitude in throwing up new growth after its first has been burned off or cut off, inducing it to bloom a second time. With regard to the latter, the Doctor does not recommend it as being good practice and believes the blossoms of the succeeding season will suffer as a result of it, but it is an interesting experiment to practice on an occasional, not highly valued plant.

The Doctor is in much demand as a peony show judge, and this often bars him from showing his beauties at these exhibitions, but when an outside judge is brought in he usually sweeps the boards and has a great collection of prize cups to show won at these friendly contests. Having no storage plant in his town, he is forced to resort to other methods of keeping and preparing his blooms for the shows. He cuts them when they are small buds and keeps them for about a week in a cool and darkened basement with paper bags over the buds and up to the bud in water.

This water is changed daily and about a half inch of the stem cut off once or twice a day. By this method his blooms open out gradually and are a rare sight when the bags are removed at show time.

He has one rather uncommon peony, the "Souvenir of the Universal Exposition," a French creation which in addition to a beautiful blossom has distinct landscaping possibilities on account of its producing a fine compact clump of foliage that makes it a thing of beauty long after the blooms are gone. He has used this as one of the parents in several of his crosses and has numerous seedlings that carry this same desirable trait. He has made many crosses and planted much gladiola seed and has many lovely seedlings that deserve a name, but modesty has so far prevented him from introducing them. He is now doing much breeding work with pansies and thinks this flower has been much neglected by the plant breeders of late and believes it possible to greatly improve it. Of this, I can only say he can if any one can, for no flower seems able to resist his skilled and kindly care. A very interesting man is Dr. Cooper, and I hope sometime we shall be able to lure him down to one of our meetings.

JULY 10—Drove out to Professor A. F. Yeager's home at Fargo to see his lilies. Two years ago Professor Yeager obtained bulbs of all nine varieties of the Elegans lily from an eastern lily specialist, but the bulbs sent him were so small that none of them blossomed the first year. This year practically all of them are blooming, but the difference is so slight in most cases that it does not appear to me worth while to pay the price demanded for them. Some few were not yet in blossom and these may disclose some worth while variations. Professor Yeager has promised to give his estimate of them later on in one of his news letters.

A coral lily in bloom in his garden was a most lovely sight and all lily lovers should have it. The flowers are rather small for lilies but have a delicate fragrance and are of the most beautiful red waxy color. A sister has learned of my desire to have this lily and has promised to send me some bulbs on my birthday. This offer decided me to have a birthday this year, as I had fully decided not to have any more of the pesky things. Often I feel as though I had had too many of them already.

JULY 27.—It was with a deep feeling of personal loss that I learned recently of the passing of our old friend, Rev. Father O'Hora, of Montrose, South Dakota. While he had been in poor health for some time, we had expected his recovery with the advent of summer and the flowers he loved so well and grew so successfully. The life of a priest is one of constant hardship and self-sacrifice, laboring always for others and denied the joys of parenthood and the precious association with little children of his own. Instead he must verily father his entire parish and has constantly the troubles of the entire community to shoulder.

Let us hope and trust that the future life will compensate for the drab earthly existence and that Father O'Hora will be called to fill a responsible position among the caretakers of the Heavenly gardens.

Experiments in Massachusetts show that the Duchess and Wealthy work very well together as pollenizers for each other. The same station reports that if nicotine sulphate is added to lead arsenate spray for fruit trees, one need not worry about poisoning bees. Fruits and Gardens

In the Twentieth Annual Report of the Oregon State Horticultural Society the following statements were made in regard to the value of alfalfa hay as a fertilizer: "Alfalfa hay is worth about \$30.00 a ton but in the soil that way compares with \$60.00 commercial fertilizer."

FALL PLANTING IN SOUTH DAKOTA

Max Pfaender, Sioux Falls, S. D.

There are many reasons why Fall planting should be undertaken by home owners in South Dakota. Very little information is available for Fall planting work in our peculiar South Dakota climate. For this reason I shall try to give such information as we have which will be applicable to our peculiar conditions.

Where Fall Planting Is Successful

In South Dakota Fall planting is successful in a big share of the southeastern part of the state. That would include practically all the state east and south of Huron, South Dakota. It should also include Milbank and vicinity, as well as the Black Hills District. That is when we consider the planting of shrubs and hedges. Perennials, flowers, and bulbs, of course, can be planted in any part of the state, with very little loss. Most hardy trees can also be planted in southeastern part of state, provided the work is properly done, and stock is thrifty. Evergreens can be planted successfully in any part of the state.

When Fall Planting Should Be Done

Irises and oriental poppies should be planted in August or September. Peonies should be planted in October or September, as well as all other hardy perennials. Shrubs and hedges should be planted in October or early November. Evergreens should be planted from the middle of August until the middle of October, but only when moved with ball and burlap.

What Can Successfully Be Planted In Fall

Anything, if it is done properly, (except of course gladiolas, dahlias, and cannas). All hardy lilies, including the regal lily, or peony, phlox, iris, columbine, and larkspurs, and all other firmly considered hardy varieties of perennials. Among the bulbs the tulip should be mentioned and sometimes we can use some of the more tender bulbs, like narcissus and hyacinths. Shrubs of all varieties considered hardy, hedges of the hardy varieties, even roses between the hardy and tender including hybrid tea roses. Fruits such as raspberries, grapes, currants, and gooseberries. Trees including fruit tree, shade and ornamental trees, but the tender barked and soft wooded trees should be completely painted with melted paraffin, applied not too hot, and such trees must be protected against sunscald by wrapping trunk with cloth or burlap from the ground up to the branches.

How To Plant Successfully In Fall

All perennials like peonies, columbine, phlox, larkspurs, coreopsis, daisies, etc., should be planted the same as in Spring. In other words it should be well done. If the ground is dry and dusty or crumbly, the area where planting is to be done should be thoroughly soaked with water a day or two before planting, in other words, the planting should only be done in good mellow moist soil. After planting they should be watered every three or four days, but in about two or three weeks then no water should be given until just before freeze up, and then all perennials should be watered thoroughly for the last time. After the ground has frozen solid the plants should be covered with six inches of light, loose, dry straw. Perennials that produce a big mass of green succulent leaves plant in Fall, like oriental poppy, coreopsis, gaillardia, canterbury bells, etc., but should never be mulched very heavily and the grounds of

these plants should never be covered with any moist, solid, or rotten material. Bulbs like tulips should be planted five inches deep and thoroughly watered and then watered very thoroughly once a week until freeze-up. Shrubs and hedges and trees should be planted as in Spring. The great secret of planting these successfully in the Fall is the tramping of soil against roots, and this should be done very thoroughly and they should be copiously watered. Then they should be watered every two weeks until freeze-up. Just before freeze-up all shrubs, hedges, and trees, and fruit plants should be hilled up with dirt around the trunk of the plant. If manure or straw can be had so much the better. All shrubs should be severely pruned back as soon as planted, for instance, a honeysuckle bush three feet tall should be cut down to one foot. All hedges should be cut down to three inches above ground, and these stumps can be completely covered with soil before freeze-up. Roses are planted the same as shrubs but should be cut down to six or eight inches above the ground. These remaining stubs should be completely covered with moist soil and then be mulched with six inches or more of manure or other litter. Small fruits as currants and gooseberries, etc., are planted the same as shrubs, cut back to six inches, and hilled up. Trees always must be planted very firmly in moist soil and much water must be used in planting and after. The tops of deciduous trees should be severely pruned back in planting time and trunks hilled up six inches. Watering is very essential, at least once a week until freeze-up.

Why We Should Plant in the Fall

Perennials bloom more surely the following Spring if planted in the Fall and tulips must be planted in the Fall in order to produce flowers. Small fruits, shrubs, and hedges, if planted according to direction will grow more vigorously the next year. Another big advantage in Fall planting, as long as we can get same results as in Spring planting, is that the work is out of the way in the Spring as that is a very busy season, and many times the work is neglected and planting is not so well done. Also, in the Fall most of us have more time and things are not so rushing. The biggest advantage is that we are not obliged to wait for nurseries to send the stock in the Spring, which often arrives quite late and some dies and some of it only very poorly recovers. Planting late in Spring never does very well.

Alternative For Fall Planting

The next best thing to do if you cannot plant this nursery stock in the Fall is to get it in the Fall and heel it in until Spring, so that it will be on hand when you want it. Heeling in stock can be successfully practiced with all woody plants, including shrubs, trees, and hedges, but not evergreens. In order to heel in shrubs and trees dig a trench in the garden or some other well drained spot, and put roots into this trench. Slant the tops toward the south or southwest. Cover the roots with at least ten to twelve inches of soil, and the tops of the plants with about five to six inches, and cover the plants almost up to tips. Even ten foot trees can be heeled in and covered completely, but in this case, they should not be laid flat on the ground, but tops should be lying on a raised slope of soil. In the Spring such stock will come out perfectly providing the soil was moist and roots were well soaked at heeling in time. Let us get our nursery stock this Fall and have it on hand when we want it next Spring.

A NOVICE'S EXPERIENCE IN FRUIT AND FOREST TREE GROWING

Paul L. Werth, Frankfort, S. D.

If it had not been for my tenacity to stick to a thing until it is accomplished, I should never have found out the wonderful fruit-growing possibilities of our soil and climate.

Since my boy-hood I was much interested in the growing of trees, shrubs, the flower and vegetable garden, and took pride in making them grow and thrive well. But a new stimulus was given this natural liking when I acquired a farm of my own for a homestead.

One of the first things that was tended to was to plant trees about the house yard. I knew nothing whatever about landscaping, so the planting was made natural enough and with the common error to plant three times as many trees as the allotted space should have had. Nevertheless, I was generally successful in starting them and keeping them growing.

Now came along two nursery agents of Layne & Ball of Davenport, Iowa. They were brilliantly versatile; I was foolishly credulous. A deal was soon contracted, by which they were to plant a whole orchard for me, with a shelter belt of Osage Orange and other junk trees all around the orchard. Between the date of purchase and tree-planting time, I lived in the future, when all these trees would put forth their bud, bloom and fruit in luxuriant display.

Instead of sending a careful, experienced Nursery man to tend to the setting and planting of the trees, they hired anybody that would go out for small pay, even if he had never planted a tree before. I knew too much for the fellow they sent me, so the trees were planted as I had been accustomed to, instead of being raked in. This, however, was my first and minor trouble with the Layne and Ball nursery stock.

The next spring I discovered that most of the stuff was not acclimated; most of it froze down to the ground and sent up new suckers. The trees were alive when received and made splendid growth the first season, some growing from four to five and one-half feet of wood the first season.

This up and down business continued for two years. Then I went at it and grubbed or pulled out all those that did not prove hardy, and planted the ground to black walnuts. These grew and flourished so well that the most of them bore nuts the fifth year after planting. They are now trees ranging in height from twenty-five to thirty feet. Out of about sixty trees, all are thrifty, except one dead and two sickly looking. This, I believe, was caused by the extreme drouth of the seasons '25 and '26 followed by the dry winters.

I have long gotten over being provoked at the agents that sold me that unsuitable stock. They taught me that fruit and forest trees will do well here if hardy selections are made and the trees given plenty of room and clean cultivation.

Instead of giving up and saying as most of the others had done, "Trees won't grow here," I secured the lists recommended by the South Dakota and Minnesota Horticultural Societies and went after it again with more determination than before.

My belief is that the fruit suitable for our conditions can be and is grown with much less expense and care than the fruit grown in California, Oregon and Washington, where they must fertilize, irrigate, spray, and fumigate to get results. I have seen in California where they plant

fields to English walnuts, forty to forty-four feet apart each way, fertilize, irrigate and cultivate the field for seven long years before getting any returns whatever. When I inquired why no crop was grown in between during these seven years, the answer came: "The walnuts need the fertility and moisture of the entire field to grow."

Though I do not make a practice of growing "in between crops" it could be done if anyone so desired.

I have proven to my own satisfaction that fruit trees will flourish and bear bounteous crops of fruit here in years so dry that grain crops and prairie pastures and meadows entirely fail; if only the trees are properly spaced and receive good cultivation. We are growing quite a range of varieties of plums, crabs and apples and the compass cherry. Our favorites in the plums are the Waneta, Sapa and Opata plums. They are perfectly hardy, come into bearing early and supply distinct variety.

We have the Sweet Russet, the Florence, the Hyslop, the Whitney and other varieties. All are hardy and good bearers.

The apple trees that have come into bearing are the Duchess, Hiberna, Wealthy and Northwest Greening.

During the years '25 and '26 we had good crops of choice fruit when field crops were almost a complete failure. When the fields were dried up the orchard trees appeared fresh and green.

In the Western states too, they grow good fruit crops in localities where the moisture supply is insufficient to raise profitable grain crops. The point I wish to make emphatic is, "Where you can grow grain, you can grow orchard trees."

Another fruit that we have grown for years and never had a crop failure with is the Beta grape. Frost and drought alike have not been able to prevent it growing a heavy crop every year. In 1925 the fruit-buds were frozen many times; yet every time it started to leaf it came on with lots of fruit-buds and they made about as heavy a crop as other years. It has been perfectly hardy in every way, a regular bearer not affected with any disease or insects.

Now a little about the difficulties in fruit tree growing. Our greatest trouble has been the rabbit. The first winter after I had set out a \$200.00 orchard, the rabbits gnawed most of the trees so that I had to let them start from sprouts the second year. The tent caterpillars have bothered some, but these are easily destroyed by spraying. The plum borers have killed some trees; these are harder to get.

I believe the best way to do with badly infested trees is to cut them down, burn them and set new trees.

When once it is generally known that a large variety of good fruit can be easily grown on our farms, there will be few farms that have not an orchard. This is the work of our society, to show that choice fruit can be grown to supply the home.

The flower garden too should become more common about the country homes. There are pretty perennials that are as hardy as the prairie grass, that should adorn every houseyard.

The fruit trees should be mulched after the ground is well frozen, or covered with deep snow, to hold the trees back in the spring, so that the frost will not catch the bloom. This mulch ordinarily, can be left around the tree until the first of May and then spread between the rows of trees and worked in. Three good forkfuls of straw manure is enough for small trees, four to five for the large trees.

(Continued on Page Fourteen)

WATERTOWN WOMAN TELLS OF GARDEN

Presents Fine Paper at Session Horticultural Society—'Memories Garden' Is Beautiful Plot—Result Shows What Interest and Much Work Will Accomplish.

Editor's Note—One of the very interesting papers delivered before the delegates to the State Horticultural meeting in this city last week was that of Mrs. M. McCarthy of this city. By hard work, this woman virtually transformed an unsightly plot of ground into one of real beauty in a very short period of time, and we are sure our readers will be glad to learn how she accomplished her aim, which she tells about as follows:

I have been asked to write a paper on beautifying the home garden, and I said I would try.

Sitting at my desk this bright January morning I hardly know how to begin, for my experience with a garden began September 2, 1924, when we moved into the house we now call home, a little more than three years ago.

Not very inviting, I must confess; the grass and weeds in the front yard were knee high, the back yard one continuous ash pile, decorated with old shoes, tin cans, and broken bottles. Some spirea, caragana, and a bitter sweet vine had been planted around the house, and were making a desperate effort to hold up their heads. These with lilacs leading up to the front entrance, and some crooked box-elders were what we had to begin with.

But, hadn't I always wanted an old-fashioned garden, with all the flowers I wanted—for once in my life? Here was my chance, with a plot of ground 84x150 feet. I could see great possibilities.

We began by having the weeds cut with a scythe, raked up and burned to avoid having a new crop of weeds in the spring. The rubbish at the back we had taken away, after which we had the ground mulched, plowed and raked, and made ready for the peonies, iris, daisies, tiger lilies, and bleeding heart that had been sent me by friends near the new home and also by friends from the home of my childhood. Later on these were covered with corn stalks as a protection from the rigors of the first winter. The shrubs around the house were mulched and cultivated, and the driveway laid out at the rear, and by that time the weather was cold and nothing more could be done in the garden 'til spring.

"Until The Cows Came Home"

All of my spare time now was spent with a rule, pencil, and paper,—getting my blue print ready, and while busily engaged at this work one cold afternoon, I looked out the back door, and there were nineteen cows feasting on the corn stalks that covered my precious roots.

It took some time to get them to move, for they seemed so satisfied in this one place, but I finally succeeded in driving them away, and then came back to see what damage had been done. I was surprised to find they were very orderly cows, for they had stepped carefully here and there, and the only harm done was the eating of the stalks.

As spring appeared I had my plan ready, and the first to be considered was the trees. These we placed where they would form a back-ground for the shrubs and flowers which were to follow. In all we planted twelve ash trees the first spring, and got good, healthy, straight ones, I think we have three varieties. At the rear of the house we planted a Caragana hedge, which was a real joy last summer with an abundance of bright

yellow pea-like flowers. Leading up to the garage at the rear at both sides of the drive, we have a double hedge of mixed shrubs.

The dogwood with its graceful red branches, honey suckle with its dainty white and pink blossoms and followed by quantities of red berries, which proved to be a real feast for the birds. Other shrubs were the flowering currant, thimble-berry, elder, roses, three varieties of spirea, and hydrangeas,—the latter being one of the best and most reliable hardy shrubs, giving a great abundance of snowy-white flowers in autumn when blossoms are few. After the fall cultivation, the Spirea Van Houtel, which I consider the finest and most useful group of shrubs we have, took a new start and grew at least two feet that season, and would have been beautiful had not the late frost killed the buds. We filled in the bare places at the east and south of the house with more honeysuckle, dogwood and syringa, got the vines started up the lattice work that had been built the first fall, and the old bitter-sweet nearly reached the top that first summer. The old lilacs which had been cultivated, and the dead wood cut away, were beautiful. The caragana at the west that we had worked with the first fall was a bit disappointing, but we filled in here with ten new spirea that Mr. Dixon recommended. We found that we must have a dividing line on the east side, as I feared I would continue planting until I reached the highway. Here we had a long narrow bed, about three feet wide, filled in with both shrubs and flowers. Between this and the spirea hedge, near the house, was a stretch of lawn with a back-ground of trees and shrubs.

"Memories Garden"

In all our planting we tried to have the trees and high growing shrubs at the rear. Our fall bulbs were now up, and I began working from my blue print, laying out the beds and walks. I forgot to say at the beginning that I had pictured these walks and beds, bordered with stones, so every time we drove out into the country we came back with a number of pretty stones which we had gathered along the roads. We have about fourteen hundred of these stones in our garden, and four other quite large ones. Three of these I grouped together and the fourth one was placed on top. On this top stone I have painted in white letters, "Memories Garden," for of course my garden must have a name, and I could think of none more appropriate, for it was surely a garden of memories.

I now began planting the perennials in one place, and the annuals in another, and this being done, we began to plan a fence, both as a background and for a protection from the cows. Our lattice fence is eight feet high, and extends across the eighty-four feet at the rear of our lot, with two openings for the drive. It is painted white and is really pretty, banked with the Caragana hedge and the green vines. Dividing the back yards on the west is a high wire fence, in four sections. Here also are planted vines,—woodbine on the north section, canary bird vine next, and this was beautiful, reaching to the top and on up, around our neighbor's plum trees, and was one mass of yellow flowers. The other sections were covered with clematis and sweet peas.

Our annuals were now coming up, and each morning new surprises greeted us, for we went out to look at the garden long before breakfast, and sometimes getting in an hours' work. By June it was one riot of color, and for the first time in my life I had all the flowers I wanted, and plenty to pass on to my neighbors and friends.

(Continued on Page Fifteen)

DIAGNOSIS, CAUSE AND CONTROL OF BEE DISEASE

The more experience the beekeeper has with bee disease, the more he comes to realize that if he successfully combats the disease, he must have a certain amount of knowledge concerning the cause of the disease, how it is spread, and most important of all, practical methods which will enable him to entirely free the bees from disease in a very short time.

American foulbrood is caused by a bacterial organism. It is infectious. It is a spore-bearing organism which is very difficult to kill. The most severe winter cold does not kill this bacteria, and it requires at least one half hour of boiling to kill the organism. The disease has been known to live in the honey and combs of un-used hives for several years. The disease is caused by a specific organism. American Foulbrood does not change into any other disease, nor does any other disease change into foul brood.

The disease infects the young bees in the larval or pupal stage. These stages are sometimes called the "grub" stage. Shortly after the "grub" has become infected it dies and adheres closely to the cell wall. It finally dries down to a scale on the lower side of the cell. The bees will not remove the dried scale unless they cut the cell out entirely. This is seldom done.

The infected "grub" first turns to a cream; then to a dark coffee-brown color. During the time that this color change is taking place, the "grub" gradually flattens out in the cell sinking lower and lower, becoming more brown until the scale stage is reached. The scale is almost black.

When the grub has partially sunken down and reached the coffee-brown stage, we find one of the most typical characteristics of the disease. If a stick about the size of a match or tooth pick is inserted into the decayed mass, and then slowly withdrawn part of the gluey mass will adhere to the stick and a ropy thread an inch or more long will be formed. In the very early stages the diseased "grub" will be too watery to form a thread. In the later stages the mass will become too viscid. The scale lays against the bottom of the cell. Often foreign substance will lay in the fore part of the cell which will much resemble foul brood which will be confusing until a close examination is made of the bottom of the cell. When the bees die in the pupal stage their tongue, a small thread extending from the head may remain attached to the top of the cell.

The cappings over the diseased "grub" in the later stages are usually dark brown and sunken. The bees often make two small holes in the cap instead of one as is usually done when the cell contains a young bee which has died from other causes. The odor of a comb that is heavily infected with foul brood is both penetrating and nauseating. The two sure symptoms which you should remember are the ropiness of the dark brown gluey mass and the tongues of the pupa remaining attached to the top of the cell. You will never go wrong on these symptoms.

The disease may be spread in any of the following ways. A stray swarm may be hived on drawn comb. (Always use frames containing foundation only.) A diseased colony may die, the bees will rob this colony and become infected. Buying used equipment from someone who has had diseased bees. A diseased colony may become weakened, the colonies rob them of some of their diseased honey. After handling diseased bees the person does not thoroughly wash and disinfect his hands and tools. Some one may buy diseased honey, and throw away the container with some diseased honey adhering to it. The bees will carry this diseased honey to their hive and become infected. The community extractor will

spread the disease far and wide. It is a question which will cause a greater spread of this disease, the community extractor, or leaving hives which have died from the disease open in the apiary.

There are two methods of practical treatment. The first and sure way is to kill the bees with sulphur or cyanide gas and burn hive, bees, frames, and all. The second method is to transfer the bees to a hive free from disease in which the frames contain only foundation. The frames and combs are burned. The inside of the hive, bottom board and cover are scorched to a dark brown color. It is advisable when possible, to cover the entrance of the diseased colonies with wire screen and move them a mile or two from any other bees. This should be done in the late afternoon and the screen removed at night. After the bees have been in their new location for a few days, the transferring can be done with less danger of infecting the disease-free colonies. If the transferring is done in the old yard with colonies of clean bees near the ones being transferred, the excitement caused by transferring will cause the bees to fill themselves with honey. Some of these bees that are full of diseased honey may drift into the nearby clean colonies. They will then deposit the honey which will infect the clean colony. There is always the possibility that some of the diseased honey may be dropped in the yard and the nearby clean colonies will take this to their hives and cause infection. The reason for removing the screen the entrance of the diseased colonies at night after they have been moved is to give the bees time to become quiet. When they leave the hive the following morning they will not be filled with diseased honey. Many of the old workers will return to the old yard and enter the clean hives. The reason for waiting a few days before transferring the diseased bees is to allow all the old bees that will return to hives in the old yard to do so. If the transferring is done immediately after they have been transferred, many of the field bees will return to the old yard with their load of diseased honey and enter the clean hives and deposit the honey. This will cause more colonies to become infected than would have had the transferring been done in the old yard.

A NOVICE'S EXPERIENCE IN FRUIT AND FOREST TREE GROWING

((Continued from Page Ten))

Cultivate to keep the ground level, or better a little lower about the trees, so that they will get the full benefit of the heavy rains. You will kill either forest or fruit trees if you insist on having them on high ridges.

I believe in beautiful country homes for this great state and there is nothing that will contribute as much to this end with as little expense and effort as the planting and growing of a grove, orchard and flower garden.

Do your part well: then the trees, shrubs and flowers will do their part too.

There is another angle to the alfalfa hay situation. It provides a wonderful market for the alfalfa hay growers. It used to be that alfalfa was stacked until the next spring; now the shoe is on the other foot; there is a big demand for it and anyone who grows alfalfa can dispose of it for \$12.00 to \$15.00 a ton. One man told me he had had wonderful results from its use and no difficulty in putting it under in the spring. He bought 350 tons outside his own and used for fertilizer.

One ton of alfalfa equals 5 tons of stable manure; 1 ton of clover or vetch equals 4 tons of stable manure; and 1 ton of alfalfa equals 2 tons of this high priced sheep manure you fellows have been buying.

FLOWER SHOW FOLKS MAKE HOT SPRINGS GLAD TOWN

Gladioli, beautiful multi-colored garden flower, has proved the favorite of Hot Springs and by democratic vote has become the official flower of the town.

The final votes were cast Tuesday evening at the second annual flower show, the "glads" carrying 58 of the 114 votes.

The remainder of the choices were as follows: Hollyhock 11; zinnia 8; sweet pea 8; aster 4; goldenglow 4; pansy 3; rose 3; lilac 2; nasturtium 2; snap dragon 2; daisy 2; phlox 2; pinks 1; perennial phlox 1; petunia 1; dahlia 1; goldenrod 1.

"Glads are a fine flower for a town to have," states Grover Pelton, a grower of the plant. "They are a distinct beauty asset and anyone can grow them. 'Hot Springs, the glad town,' it sounds good, doesn't it?"—Hot Springs Evening Star.

WATERTOWN WOMEN TELLS OF GARDEN

(Continued from Page Twelve)

We now have twenty trees, one hundred ten shrubs, and twenty-seven different perennials, besides the vines and I can still see where I can add many more.

Am now planning for spring, to put in some ornamental trees, roses, and more shrubs; also a sun dial, bird bath, and bird houses if the trees are large enough. And now

"Memories Garden" is covered with snow,

Still I wander too and fro;

Thinking of all my treasures here,

Sent by loved ones from far and near.

In the farthest row are the hollyhocks gay,

Ready to wake with the first spring day.

And here a lily, and there a fern,—

Something lovely wherever I turn.

Here in a corner all alone

Is a bit of mint from the dear old home.

And here are daisies and golden glow,

And regal lilies white as the snow.

Here is the iris from Shelbyville,

And "Aunt Horst's" rose under that white hill,

And Mrs. Sheafe's larkspur and poppies red—

All asleep in their snow-covered bed.

Laurina's Glads I'll put here, I think,

Close to the peonies, white and pink.

And here I will have my dahlia bed,

Close to more peonies, white and red.

And here I will have a bed of phlox,

And valley lillies and four-o'clocks.

And baby's breath, and Columbine, too,

And here sweet violets, white and blue.

Oh, I'll just plant every seed that I know,

And then I'll watch them grow and grow.

And when I am done with this world of ours,

I'll quietly sleep with the beautiful flowers.

—Watertown Public Opinion.

HAVE EARLY SPRING FLOWERS

Plant your perennials this Fall. Plant your shrubs, hedges, and fruits this Fall, or yet them and hill them in so as to have them on hand next Spring. Write for our Fall Price List and Catalogue.

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