

Volume V

Dr. N. E. Hansen,
Brookings,
S. Dak.

Number IV

NORTH AND SOUTH DAKOTA HORTICULTURE

APRIL, 1933



The Home of A. L. Truax, Crosby, N. D.



SPEARFISH GARDEN CLUB

Mrs. Florence Bettelheim, Secretary

Spearfish Garden Club was organized three years ago, with less than a dozen members, and having for its objective the improvement of vacant lots and other unsightly places in the city. Realizing the great natural beauty of our location, it is our hope, that in time by careful landscaping and planting we may make our town worthy of its setting.

Our work has been sponsored and assisted in many ways by the City Council. Community card parties, food sales, etc., have furnished most of the necessary funds for nursery stock and the labor of one competent experienced man.

To date, we have undertaken four main projects. First, we made an attractive little park of an unsightly lot, used for years as a dump for cans and ashes. After being filled in with rich soil, it was seeded to grass and perennials, and a walk of stepping stones laid. It made a wonderful showing two months after planting. Next the band stand park was landscaped, which work consisted of seeding the whole to grass, building a high woven wire fence across the rear and covering it with woodvine and bittersweet. A planting of the same vines were made around the bandstand, with a filler of scarlet runner beans, until the perennial vines could make a showing.

Paths of stepping stones were laid and a fine elm, a silver maple, a mountain ash, a Colorado Blue Spruce and four Black Hills spruce were planted in addition to borders of tulips, phlox, and similar flowers.

The Club was instrumental in having the High School Grounds landscaped and contributed several hundred tulips and iris to the plantings made there. Iris were also planted on the Normal School grounds and in the Municipal Tourist Park.

Last spring we bought one hundred and forty Chinese Elm trees, distributing to citizens and farmers. The Normal School planted an avenue of them along an unsightly lot in the heart of town, from which an old livery barn had just been removed. The lot was planted to grass after the scattered foundation stones had been piled to form a little rock garden. This being a private property, and offered for sale, no permanent plantings were attempted, but good effects were made with a liberal planting of annuals: zinnias, cosmos, etc.

Another vacant lot on main street was put in shape for planting this summer. This lot will be seeded to grass with borders of scarlet phlox and Red Leaved Jap. barberry, and a high woven wire fence across the back planted with vines to cover it.

NORTH AND SOUTH DAKOTA

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TABLE OF CONTENTS

Spearfish Garden Club, Mrs. Florence Bettelheim	38
Hotbeds, Purley L. Keene	39
Extracts from the Diary of a Traveling Man, W. A. Simmons	40
North Dakota News Letter, A. F. Yeager	42
The Pintail, O. A. Stevens	43
A Home and a Garden, F. W. George	44
Ipswich, the Zinnia City	46
Early Potatoes, M. J. Tinline	48

During the summer of 1933 we will maintain these plantings, and for an additional project will undertake the planting of an avenue of Chinese Elm trees from the city limits along the winding road to the cemetery, about a mile and a quarter in distance.

Future plans include an avenue of trees from the Normal Campus down along the valley road to the North of town; active work in the conservation of South Dakota trees, shrubs and wild flowers, and the development of a strong junior club, for we believe that **boys and girls taught to create order and beauty with their hands will make good citizens in the future.**

Two years ago we entered the Better Homes and Gardens National Contest for the most outstanding improvement of neglected or unsightly places in town or city, and received "Honorable Mention." We have entered the contest offered by the same magazine this year.



HOTBEDS--THEIR CONSTRUCTION AND MANAGEMENT



Purley L. Keene

There are a number of vegetables which require very early starting in the spring of the year in order to be most successfully grown in South Dakota. If we attempt to plant them late in the spring, they suffer from summer heat and drought or fail to mature before early fall frosts. A few plants may be started in small boxes in a south window of the house. However, a small hotbed will enable one to grow many more plants than could be grown in the house and is also much more convenient.

A hotbed consists of a frame covered with sash and supplied with some form of artificial heat, usually fermenting strawy manure, to keep the bed warm. Many home gardeners construct a more or less permanent pit hotbed. This type of hotbed is constructed by digging a pit approximately thirty inches in depth and constructing permanent walls of brick, tile, cement, or plank. The size of the pit will vary with the needs and wishes of the owner. The frame should extend a few inches above the surface of the soil and should be so constructed as to give the sash a four to six inch slope toward the south. This structure may be used for storing vegetables during the fall months.

A temporary type of hotbed may be very easily constructed without having dug a pit the fall before. This type of hotbed is referred to by market gardeners as a temporary or surface hotbed. The first step to take in the construction of such a hotbed would be the building of a frame to accommodate the sash which one has available. The frame should be twelve inches in height on the south side and sixteen to eighteen inches in height on the north side giving a four to six inch slope to the south. The second step would be the building up of a layer of strawy horse manure. This layer should be built up in successive layers of six inches in depth. Each layer should be watered and well packed. If the hotbed is started during the early part of March the heating manure should be built up to approximately two feet in depth. However, if the hotbed is started in the latter part of March, 18 inches will be found sufficient. This layer of heating material should be two feet longer and two feet wider than the frame which holds the sash. The frame with the sash is placed upon this layer or flat pile of strawy horse manure and the outside of the frame and layer of manure

banked with non-heating dry straw to aid in conserving the heat given off by the decomposition of the manure. After the manure has started to decompose, which usually takes a day or two, four to five inches of soil is placed inside the frame, watered, and the sash placed back on the frame. After another day or two when the excessive heat of the heating manure has quieted down, seeds may be planted in the soil in these frames.

The standard hotbed sash is so constructed as to readily shed rainfall. Its standard size is 3 by 6 feet outside dimensions. It is customary to build frames which will accommodate four sash. These frames would then be 6 by 12 feet. Where market gardeners require more sash than this they construct hotbeds in multiples of this four sash frame. In the home garden where storm sash is used the frame necessarily should be constructed to accommodate a certain number of the available sash. It may be desirable also in this case to give greater slope to the glass since the rainfall does not drain off of ordinary storm sash like it does off the regular hotbed sash.

A well protected site should be selected for the hotbed. It should be well protected from the north and west. It may be necessary to fasten the sash to the frames to guard against the wind blowing the sash off and breaking them. Protection on the north and west may be provided by buildings, groves of trees, shrubbery plantings, hedges, walls or board fences. A certain amount of protection from the east and south is also desirable. If possible the site should slope gently to insure satisfactory surface drainage. A gentle south or south-easterly slope is usually preferred since it gives the plants better advantage of the warm forenoon sun.

The soil used in the hotbeds should preferably be one with a sandy loam texture. A light loam or sandy loam soil is not as apt to bake and crack. It warms up more readily, is more easily worked and seedling plants can be removed from it with less damage to the roots than from heavier types of soil. The soil does not need to be well supplied with humus. In fact, it is better if there is very little humus in the soil. The seedling plants do not demand a soil of high fertility. A soil too fertile would be apt to stimulate too rank a growth in the seedling plants.

The hotbed should be ventilated daily except on very windy or cold cloudy days when no ventilation will be required. The ventilation is provided by raising the sash in such a way that the wind does not blow directly in on the plants. This can usually be accomplished by raising the sash on the side or end away from the direction from which the wind is blowing. Later in the spring when the weather becomes warm, more

ventilation is given and in some cases the sash is removed entirely during the day. A great many home gardeners make the mistake of ventilating their hotbeds too late in the day. The ventilation should be started during the middle of the forenoon and the sash placed back on the hotbed in the middle of the afternoon. If the ventilation is not started soon enough in the forenoon the temperature in the hotbed rises too high and encourages a rank and spindling growth in the seedling plants. Damping-off fungus disease will also be encouraged. When the ventilation is continued too late in the afternoon, the temperature drops too low and the plants are apt to be chilled. By closing the ventilation in the middle of the afternoon, the temperature in the hotbed is raised and heat is conserved for the coming cool night. Additional protection to the hotbed may be necessary on very cold and windy nights. This can be given by placing mats, shutters or old blankets and rugs over the sash and frames.

The hotbed should usually be watered daily during the middle of the forenoon. The watering should be done after the hotbed has warmed up in the forenoon and soon enough so that the foliage of the plants and the surface of the soil will dry off in a short time, and this is particularly necessary where damping-off fungus diseases are liable to occur. Watering the hotbed in the afternoon or evening or on cloudy days will have a tendency to lower the temperature and chill the bed. The hotbed should not be watered, even in the forenoon, unless the temperature is rising. The hotbed should be well ventilated immediately after watering in order to hasten the drying of the foliage of the plants and the surface of the soil.

Lettuce, celery, tomatoes, cabbages, and closely related vegetables are usually transplanted once or twice in the hotbed before being taken to the field. They should not be allowed to remain too long in one place or the plants will soon become too tall and spindling due to crowding. Where early turnips, radishes, and lettuce are grown to maturity in the hotbed, the seeds should be sown thinly or the plants thinned.

Some prefer to plant the seeds in shallow boxes or small flats which they set in the hotbeds. This enables one to do the work of seeding and transplanting in a shed and on benches where the work can be more conveniently and readily done than it can be out in the hotbed. Cabbage, tomatoes, celery, and lettuce are the kinds of vegetables most frequently started in hotbeds. Other kinds of less importance are peppers, eggplants, kohlrabi, cauliflower, parsley, onions, cucumbers, muskmelons and beans.

Cucumbers, muskmelons, and beans when started in hotbeds should be in individual boxes

(Continued on page 48)

EXTRACTS FROM THE DIARY OF A TRAVELING MAN W. A. Simmons

Dr. Eubank Carsner, sugar beet specialist of the Department of Agriculture, announces the breeding of a new sugar beet, U. S. No. 1, which is not only immune to the attack of the disease known as curly top but is also much more productive than the beet ordinarily grown for sugar production. A limited amount of seed will be furnished to an association of sugar manufacturers this year, who will keep the production of seed under governmental supervision until 1934. This beet is said to yield from twelve to eighteen tons per acre while the ordinary beet on the same soil yielded but from seven to fourteen tons.

As the sugar content of beets is but about one-eighth the weight of the beets, this will represent quite a boost to our sugar production, which at present is only about one-fifth of the sugar consumed in our country. Since European growers have been denied U. S. No. 1 seed, there is said to be a good prospect for the new beet resulting in an important seed growing industry in this country.

Feb. 17: The grounds of our State Capitol have been greatly improved this past year with much effective planting of evergreens and junipers, including some of the trailing junipers that try so hard to hide the unsightly scars in the Bad Lands. When one looks across the river at the bare hills there, one cannot help thinking what a place this is for foresting with our Black Hills Ponderosa pine. Some day, no doubt, this will be done and the at present useless hills turned to a useful purpose.

The new annex to the Capitol Building is now fully occupied. As is fitting, the Highway Department occupies the topmost floor, while the Agricultural Department has the ground floor. On the floor above the Agricultural Department is located the Rural Credit Department, with the mortgages resting on Agriculture, a very fitting arrangement all around.

"Congress ought to hurry up and pass the Domestic Allotment Bill to pay the farmers to produce less, so they can pay back the \$90,000,000 Uncle Sam is lending them to produce more."—Dunbar's Weekly.

Feb. 20: At the East Kemp Avenue Standard Oil Filling Station a large soft maple tree had to be removed. It was removed without cost to the company by a man who performed the labor for the wood involved. The manager of the station begged for and was allowed to keep a four foot section of the trunk that contained a large crotch. This he set in the ground with the crotch above, and around the crotch he set ornamental stones in cement and converted it



into a very pretty and naturalistic bird bath. The manager derives great pleasure from watching his friends the birds make use of this bath, the robins apparently making the greatest use of it and often monopolizing the bathing facilities in true boarding house manner.

"Overproduction they say has plunged agriculture into the fix it is in. That is, if there were not so many good farmers, there would not be so many poor farmers."—Arizona Producer.

March 12: In the March issue of The Country Gentleman, Benjamin Wallace Douglas of Indiana has a little article about the Mathews apple. Formerly this apple was known as the Dr. Mathews apple but as doctors and apples are generally considered more or less antithetical, it was probably thought best to drop the doctor part of the name. Some years ago Mr. Douglas sent me several specimens of this apple, together with scions, which I divided with Mr. Robertson. The apples sent were of large size and high quality, but it seems our seasons are too short for them to attain much size. They would probably grow larger if they were properly thinned, as they over-bear constantly and hang in profusion all over the top worked branches. Even so, they often attain a diameter of two or more inches with me, though Mr. Robertson says they grow only to the size of large crabs at his place. As a high quality free-bearing apple, it will probably become a commercial variety in sections enjoying a longer growing season.

Mr. Robertson spent the evening with me last evening and brought me some very fine Jonathan apples which he raised top worked, and they were far from being hard to take. I was much pleased to see that he appeared to be back in his usual health after his long siege of eighteen days in a hospital bed.

March 14: As the annual battle with plant lice will soon be on, this recipe for an effective spray, on the authority of Dr. W. D. Whitcomb of the Massachusetts station, should be of importance:

Water	1 gallon	50 gallons
40 % Nicotine Sulphate...	½ Teaspoonful	3 1/3 fl. oz.
Sal Soda, or	1 Teaspoonful	2 1/2 oz.
Potash Fish Oil Soap....	1 Tablespoonful	1/2 pint

Nicotine Sulphate is one of the most expensive insecticides used and it is to allow a more diluted solution of this that the sal soda or fish oil soap is used. Also, it has been found at the Massachusetts station that the addition of one or the other of the two latter substances increases greatly the effectiveness and killing power of the spray. With this addition, hitting the aphids with the spray is not essential as the fumes from it

will enter their respiratory system and cause paralysis.

"Eat carrots for beauty is the latest medical advice. Certainly, just look at the goats."—Portland Oregonian.

March 13: I drove north from Hot Springs today and was fortunate in seeing the entire buffalo population lined up near the fence, animals of all sizes from shaggy calves to old members of the herd. While I did not stop to count them, there must have been well over fifty in the herd. They were not as handsome as they will be later after shedding much of their winter overcoats, but we may well be proud of having such an extensive number of this almost extinct animal left for our inspection and study. Of course they were much too large to survive under settled conditions of the country as the once great roving bands of Buffalo would constitute an intollerable nuisance under conditions that we have today. Also, their place has been taken by much superior animals, but it is nice to have some specimens of this animal survive, that future generations can see what they were like and even at times attempt to eat some of the tough and not too tasty meat.

March 14: I had a pleasant little visit with Mr. E. A. Gates today at his nursery and attractive home three miles east of Rapid City. Mr. Gates seems to share with Mr. Robertson a distaste for weeds and none were visible on his grounds. His land is quite level and free from stones and appears to be very rich. Also, he can irrigate when necessary, which is a great advantage to his small fruit crop. He already has several acres in raspberries and plans to extend his planting, as there is always a good demand for the berries in his nearby large market town.

March 21: There is always something to be learned from Dr. Hansen. Today, while visiting him, somehow the subject of hair came up. Of course every one knows that Dr. Hansen has a very fine head of hair, grey to be sure, but that color only adds distinction to his appearance. Also, all my friends know that when I remove my hat I am laying myself liable to arrest for indecent exposure. In common with most bald headed men I had always comforted myself with the reflection that grass does not grow on a busy street, but this solace was removed when Dr. Hansen gave me the latest findings of science on the subject. When a man passes middle age, he explained, the roots of the hair strike deeply inward. If they find grey matter, the hair turns grey, while if they encounter a vacuum, the hair falls out.

NORTH DAKOTA HORTICULTURAL SOCIETY NEWS LETTER



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

It is possible to produce good Dahlia plants by starting the tubers indoors and making cuttings out of the sprouts which come up. These sprouts should be cut off, leaving a short piece at the base attached to the tuber from which new sprouts may come out and from them other cuttings be taken. An English grower reports producing 4500 plants from 150 tubers in one year.

It has been supposed that it was impossible to produce a strain of double petunia which would come 100 percent double from seed. However, it is claimed that there is a new strain from Japan sold by Herbst Brothers, Inc., New York City, which does come 100 percent double.

J. D. Winter, of University Farm, Minnesota, reports that the "big three" in strawberry varieties in Minnesota are Dunlap, Premier and Beaver. The latter is a new variety from Wisconsin which is making great inroads on the plantings of older kinds. He recommends Nokomis and Minnehaha as two desirable varieties from the Minnesota Experiment Station.

According to the latest recommended fruit list from Minnesota, the following are considered to be the hardiest varieties: Apples—Charlamoff, Erickson, Duchess, Hibernial, Pattens Greening, Haralson; Plums—Waneta, Elliott, LaCrescent; Cherry plums—Oka, Compass cherry, Zumbra, Opata; Raspberries—Chief, King, St. Regis, Latham.

One of the best ways of identifying potato varieties is the color of the sprout.

"Wisconsin Horticulture" always contains much of interest to us. The following are a few gleanings from it: Varieties of strawberries now advertised which are reported as inferior include Red Gold, Gibson, Cooper, Aroma, Big Late, Brandywine, Paul Jones. New **annuals** listed as having merit are Golden Gleam Nasturtium, Guinea Gold Marigold, Swiss Giant Pansy, Annual Canterbury Bell. **Shrubs** listed as being recommended for trial include Paul's Scarlet Thorn, Chinese Flowering Dogwood, Korean Box, Dwarf Ninebark, Rose Acacia, Blue Leaf Honeysuckle (L. Karolkowi), Agnes Rose, Blaze Climbing Rose.

If you want a low-growing shrub, do not buy a large shrub and try to keep it low by pruning it.

Extension circular 67 on trees and shrubs has been revised and is now to be had by writing to the Publications Department, North Dakota Agricultural College, Fargo, for it. Our new

bulletin on varieties, breeding, culture and use of gooseberries has now gone to the printer.

The promising new currant variety, which has been distributed by the Minnesota Experiment Station as Minnesota No. 24, has now been named Red Lake.

The question is asked whether Compass Cherry may be grafted onto wild plum. Indeed it may; that is the way it is ordinarily propagated.

We are told that our good friend, Vice President Barber, of Grand Forks, recommends turkeys as a means of controlling grasshoppers in the Glad garden.

A. H. Bremer, of Norway, reports that a temperature below 57° F. must be maintained for the development of the best radishes, 68° was found to be the best for carrots, and 64° best for head lettuce. The best length of day for head lettuce was found to be 12 hours long. Days much longer or much shorter resulted in poorer heads.

For most crops, the application of commercial fertilizer alongside the row is best. Fertilizer should be about two inches away from the seed for most crops.

According to the Cornell Experiment Station, crops most likely to respond favorably to paper mulch are tomatoes, peppers and muskmelons.

An English gardener reports that satisfactory moccasins for wearing over the shoes in the muddy garden may be made from sections of automobile tire fastened at the toe and heel by straps.

Bulletin No. 289, of the Minnesota Experiment Station, University Farm, St. Paul, is entitled "Methods of Supplying Electric Heat to Hot-beds."

Minnesota No. 194 plum has been christened "Superior." At N. D. A. C. this plum has given indication of being very valuable.

If you are planting out strawberries, buy the plants fresh and as near home as possible.

Brown needles on the evergreen trees this time of year may indicate winter killing due to lack of moisture. Fall watering and covering during the winter time would be desirable for evergreens which are not well established.

Plant bands made of wood veneer have been found at this Experiment Station to be far superior to paper bands for starting plants. The only place I know of their being manufactured is by the Rose Valley Nursery Co., Dongola, Illinois.

"Why are my vegetable plants so long and thin and spindly?" writes a friend from Finlay, N. Dak. I suspect three things may be the trouble: Crowding the plants too close in the flats, too high temperature, and too little light. The same correspondent asks whether Jersey



Wakefield cabbage, which he uses for an early crop, is good for winter storage. Personally, I would not plant this variety either for early or late but would suggest a good strain of Copenhagen Market for early and Danish Ball Head for late.

Do not buy glass substitutes for hotbed purposes as an economy measure. The first cost may be less but because of lack of durability, in the long run, glass will be the cheapest.

Willows are easily started from cuttings. These cuttings should consist of branches from a half inch to an inch in diameter and a foot long, cut before the tree begins to grow and planted with only an inch or so sticking above the ground level.

Plant your Glads on a new piece of ground this year to avoid trouble with disease.

If your soil is hard to work because of its being too heavy, the best cure is a very heavy application of well-rotted barnyard manure disked and plowed in.

If I were planting but one variety of peas I think it would be Lincoln.

"Are ashes good for my garden?" is a query from Arthur, N. Dak. For many soils, hard coal ashes are beneficial but not lignite ashes, as they are likely to contain alkali.

The earliest watermelon we have tried up to date is Arikara.

If one is considering the growing of field beans, Bulletin No. 258 from the Montana Experiment Station, Bozeman, would be a very valuable thing to study. It is entitled "The Economics of Bean Production and Marketing in Montana."

Great improvement has been made in varieties of head lettuce in recent years due probably to the great increase in the production of head lettuce for commercial purposes. Our very best variety this last year was New York No. 12, although the variety we have been recommending as the best, namely, Stonehead, also made a good crop. I note that Washington State College recommends that only improved strains of the New York variety be grown there.

"Bean Diseases and Their Control" is the title of Farmers Bulletin No. 1692. Many bean diseases are carried in the seed, hence the desirability of securing disease-free seed.

According to F. A. Aust, in "Wisconsin Horticulture," early spring is a good time to make a lawn. He recommends three pounds of seed per thousand square feet, sowed on ground which has been rolled and then the surface slightly loosened with a rake. During the first year he recommends one quart of 4-12-4 commercial fertilizer per hundred square feet applied every two months. After applying the fertilizer, water it well.

If Evergreens have been injured during the

winter, as indicated by the reddening or browning of the needle tips, the plants should be given special attention in the spring in the way of fertilization and cultivation. Small Evergreens may be protected during the winter by burlap or perhaps even by a soil cover.

If you like winter bouquets of real flowers, the following three kinds are good ones to plant this spring: Globe Amaranth, Acroclinium and Statice. The first two are annuals and the last perennial.

"Wild Bird Guests and How to Entertain Them" is a good book on the subject, published by E. P. Dutton & Co., of New York. The price is \$2.50.

The New York Experiment Station says that trees grown in alfalfa sod make practically as good a growth as those grown in cultivated land. Alfalfa sod is superior to ordinary grass sod because it dries the ground less, holds snow better, and helps increase the nitrogen supply of the soil.

R. E. Vaughn says, "In controlling Iris rot all diseased portions of the rizomes should be cut away when the plants are divided. The sound portion should be disinfected with corrosive sublimate or other standard material.

The Maryland Fruit Grower mentions a method of treating fire blight cankers that was recently developed. It is to brush onto the cankers in the spring before growth starts, a solution made as follows: Add three ounces of concentrated hydrochloric acid to a quart of hot water in an enameled kettle. In this liquid dissolve nine pounds of dry zinc chloride powder, heating, if necessary, to insure dissolving. Cool this mixture and pour it into seven pints of denatured alcohol, thoroly mixing. Keep this tightly stoppered until ready for use.

A recent bulletin from the Ohio Experiment Station concludes with the statement that Jonathan apples should be thinned to six or eight inches apart on the branches. While we have not done work here in North Dakota as is possible with such a staff as they have at Ohio, nevertheless this conclusion might be considered a good indicator as to the best distance apart for apples on our trees. Very often our apple trees under favorable conditions produce enormous crops, far more than they should, which makes them subject to winter injury the following winter.

THE PINTAIL

O. A. Stevens

The pintails are close rivals of the mallards for a leading place among the game birds. They are practically in the same position from a standpoint of numbers, size and quality of the flesh. Their nesting range in America is nearly the same as that of the mallards, from Hudson Bay



and from northern Illinois (formerly), west, and north to northwestern Alaska. In winter they range somewhat farther south than the mallards, remaining mostly in southern United States, but frequently reaching the West Indies and as far as Panama. Some of them also reach the Hawaiian Islands.

The pintails of Europe are regarded as a slightly different race of the same species. They nest in northern Europe and Siberia, south to the northern parts of the British Isles, Germany, southern Russia and Turkestan. In winter they go as far as the Nile Valley, Ceylon and southern China. On the southern coasts of England they are quite common in winter. W. H. Hudson, the noted British writer, rated them as: "not so handsomely colored as the shoveler, mallard, Widgeon and teal, but the most elegant of the fresh water ducks." He noted that they "breed freely in a semi-domestic state," probably having reference to private estates and game preserves.

The name of course refers to the very long, slender tail feathers of the male. "Sprig," another name which is often applied to them, has the same origin. Many other local names are used, but pintail is the one by which they are regularly known in the books, both in this country and in Europe. The nests are usually a short distance back from the water, but are said to be often at a greater distance than those of most other ducks. F. S. Hersey described them as exceedingly abundant on the tundra of the Bering Sea coast. A. C. Bent described North Dakota nests in prairie grass and in or near fields. In one case the prairie grass had been burned after the eggs were laid and the female duck still brooded the scorched eggs. R. B. Rockwell in Colorado, found a nest on the right of way of a main line railway, less than 20 feet from the rails.

Mr. Bent states that the olive-buffy eggs cannot be distinguished with certainty from those of the mallard and shoveller; that only one set is laid and usually less than 10 in number. One egg is laid each day, but incubation does not begin until all are laid, and after 22 or 23 days, they all hatch within a few hours. Like the mallards, the pintails feed in shallow water, "tipping" with their tails above water while they explore the mud for snails and seeds. Tubers and seeds of grasses, pondweeds, smartweeds, etc., comprise about seven-eighths of their food, snails and water insects most of the remainder.

Pintails are more wary than the mallards. A few years ago when Mr. F. C. Lincoln of the Biological Survey was trapping at Dawson, North Dakota, many pintails were taken, but few of them were shot the next week when the hunting season opened. It called to my mind that Dr. A. Wetmore had remarked when he was in Fargo

(Continued on page 47)

A HOME AND A GARDEN

F. W. George, Aberdeen, S. D.

A home has been variously defined as a house, residence, abode or dwelling place, and these in a way are all proper definitions and describes a place where "someone lives"; but in the sense that I am considering a home, someone has offered a better definition by saying that—"A home is where one's heart is," and that is what I like best to consider it.

Give me a home with a garden
Where roses and lilies abide.
I'll show you a place of treasure—
Place fit for a king to reside.

Give me a home with a garden,
The fairest and dearest on earth,
A place where kind hearts are loving
And where many good deeds find birth.

A place of walks flower bordered,
A velvet, and elm shaded lawn
Stained with the flame of the sunset—
Kissed by the first rays of the dawn.

Give me a home with a garden,
Surrounded by laughter and love,
Where all life is in harmony
With the infinite world above.
—Harriet M. Gill,
In the Flower Grower.

In speaking now of the surroundings and settings of such a home, it does not matter whether it be the humblest cottage of the poor, or the mansion of the wealthy, for trees and flowers, like all the gifts of God are no respecters of persons, and can glorify a hovel as well as a palace. A home and garden is not only a possession, it is an opportunity for expression of one's personality.

When we pass a residence fronted by a verdant, well kept lawn, unbroken by beds of flowers, or otherwise; but bordered along its boundary lines and driveway by borders of well selected and placed shrubbery or flowers or both, the base of the residence structure concealed or nearly so, by harmonious plantings, the whole forming a pleasing and beautiful picture of a most desirable home, radiating thoughtful care and pride of possession. Do we not instinctively form an opinion of the character of the people residing in that home and nine times out of ten are not our impressions correct? Such homes speak of culture, refinement, love of home and for the beautiful things of life. Such homes radiate good citizenship, neighborliness, kind thoughts and the things that go to make life worth while.

From such homes go out sons and daughters best fitted for active, progressive, citizenship,



children who will carry with them the inspiration of an enduring memory of a beautiful and kindly childhood home.

I cannot dismiss from my mind the thought that boys and girls whose childhood years have been lived in a home made beautiful by trees and flowers, and who had a hand in their planting and culture, will in the years of maturity look out upon life from a more balanced view point. Meet its trials and vicissitudes with calmer fortitude and greater assurance than will the less fortunate ones whose childhood years have known little of contact with the beauty of flowers, the melody of bird songs or the magic of growing things.

It has been said, and rightly, that the primary reason for growing flowers, building gardens and beautifying home grounds is to give pleasure to those who will see and use that which has been created. This is only another way of saying that we do not grow flowers, or beautify surroundings for ourselves alone; but for our friends, neighbors, and for the community for which we live.

Ipswich is demonstrating in a most pleasing and practical manner the possibilities of community interest in city beautification. Much credit is due not only to the ladies of Ipswich, who we take it have largely been responsible for the very marked success attained, but to the people in general for their loyalty and support in making the project a success.

These flower gardens are putting Ipswich on the map in a local, as well as the Yellowstone Trail is doing in a national way. In fact, Ipswich seems to be "stepping out" and is already several laps in the lead of its sister towns in South Dakota. I am hazarding a guess that it is going to be able to maintain its position. I think I could name, at least a few of the citizens who will make it a part of their business to see that it does.

In speaking of gardens in this talk, it is of course to be understood that I am making use of the word only as it has reference to flowers. I am willing to admit, however, that a nice bunch of crispy radishes, a helping or two of tender June peas and a few ears of fresh, tender golden bantum corn do possess many of the elements of beauty as they appear as landscaping material on a dining table.

In the planting of rear yard gardens, and that is where gardens should be located, no very fixed rules can be made that will apply in all or even in a majority of cases, as the factors of space, location and surroundings vary so greatly. In case of large grounds very many interesting things in the way of landscaping are possible that could not find place in the ordinary size city lot, (which we are here considering) as here we are restricted to making the best use possible of the smaller areas at our disposal.

In the rebuilding of a present, or the building of a new garden, there are a number of very general and fairly well established essentials that may be applied. In the planning, we shall first of all, want to make a sketch to scale of the available space, locating thereon any trees, shrubs or perennial flowers that we may wish to retain in their present location, and also show the location of the garden plot with reference to surrounding objects. Having this data, we may then proceed with the filling in of details.

In case our space is very limited, we may find it necessary to plan for only a single border planting. Here as in the case of a border, extending all the way around and inclosing a center plot of lawn, we shall require a suitable background against which plantings may be made. These may consist of a hedge of informal height, or an ornamental fence, or one covered with vines. Against which ever of these is provided, we will make our plantings of progressively lower growing shrubs or flowers, or both, graded down to a low, irregular front edging line. These borders may have a varying width of from three to six feet or so. The inviting shade of one or two well placed shade trees will add a very attractive feature.

Plants selected for this border should, in addition to the continuous blooming varieties be selected with reference to their periods of blooming, so that our garden will present us with more or less continuous bloom throughout the whole season. A supply of annual plants may be kept ready to replace border plants as their blooms pass out, and so help to keep up continuous bloom. The grading down of our border must not be too symmetrical, but should be broken up somewhat by inserting a plant here and there of a taller growing variety. Taking the case of our single border, this should if possible be fronted by a strip of lawn of such width as our space will provide. While in the case of a continuous border, surrounding a garden plot, the main center portion should be lawn.

Looking across our garden from its entrance, we should see partially concealed from view, and just off the main axis, some rather dominant object of interest, such possibly as an arbor or garden seat, flower trellis, or some other object of pleasing design, but not so striking in appearance as to detract the attention from the garden as a whole.

Here at the farther side of the garden might also be located a lily pool or rock garden. These while attractive and desirable, are not absolutely essential, and may be omitted if finances do not at present permit, may be added later, or their place taken by some other pleasing and less expensive objects. Some interesting and not too striking feature might also find placement in the center of the lawn space.



Very pleasing borders may be made by using both shrubs and flowers. In general, the coarser varieties of either should be placed farther back in the border or the far side of the garden plot, the finer foliated varieties nearest. In mass plantings, of borders, it is best to have the masses blend into each other by slightly overlapping of edges, instead of coming to a sharp clean cut division. White has been termed the garden Peace Maker, and can be used to soften and tone down too contrasting colors. Its use can be easily overdone.

A very common error in flower as in shrub plantings, is using too many varieties, resulting in a stuffy or overloaded effect, and another is incorrect spacing, and in not correctly visioning the size and appearance of these plants when fully matured.

An added attraction in our garden may be obtained by placing two or three or more small groups of flowers in corners or odd places about our grounds arranged so that as people move about, these may suddenly or unexpectedly come into view. We should arrange our gardens, (if conditions permit) so that the whole garden scheme cannot be seen in its entirety from any one point.

These groups mentioned may not be directly connected with the garden proper, but should if possible be tied together (so to speak) and to the main plot by narrow borders, or garden paths in such a manner that they will help to form a part of the picture.

I like garden paths, but a path should never be in evidence unless it can justify its existence from the standpoint of use. Paths may lead from one group of shrubbery or flower plot to another, or to some other objects of interest, or wherever we may have a real use for them. They should never just run out into the garden and fade away into nothingness.

When our garden has finally reached completion, it should appear as a sort of out door living room, and as some one has said—"Here in pleasant surroundings, concealed from view, one may rest in shade mornings and evenings, entertaining ones friends, or watch, or join in with the children at play. Just a quiet, cheerful, resting spot, remote from the noise and traffic of busy streets.

When I step out into such a garden of peace and quiet of an evening, there comes to my mind the words of the closing line of one verse of an old poem—"Where the cares that beset the day, fold up their tents like the Arab and as silently steal away."

And now we come to the end of our gardening season, and as we glance out of a window or step out into our garden some morning in late September or early October, we suddenly sense that the crushing hand of Jack Frost had laid waste

all that beauty that it was ours to create and enjoy; but it is only the material beauty that has vanished. If we take stock of what we have accomplished by our efforts, we shall realize that we have brought beauty into and about our homes and lives. By our efforts we have added a tiny bit to the beauty of the world, and have inspired a love of beauty in the hearts of our children.

If we have been generous with these gifts of our gardens, our flowers have found their way into and brightened rooms of sickness, brought cheer to the heart of the aged, and smiles to the faces, and joy to the hearts of children. We have gladdened the way of the guest and the passer by. We have made our home and community a better, a brighter and a happier place in which to live.

All of these wonderfully worth while things are possible to the man or woman with a little vim, with love in their hearts, and given a few seeds or plants, and just a little spot of black, unlovely dirt which The Creator has given to us the ability to glorify, if we will. I quote from a poem, I believe, by Edgar Guest—

"Whoever makes a garden
Has, Oh, so many friends—
The glory of the morning,
The dew when daylight ends.
For wind, and rain, and sunshine,
And dew, and fertile sod,
And he who makes a garden,
Works hand-in-hand with God."

IPSWICH THE ZINNIA CITY

Mrs. Bertha Bartholemew, Ipswich, S. D.

It is a real pleasure for me to speak a word of praise on behalf of the lowly Zinnia; the flower I have learned to love, and also the flower that has given so much silent advertising to our own little city. Flowers have been my friends all my life. I have tried to study their likes and dislikes, and find this study most interesting.

Twenty-Six years ago we moved to South Dakota from Iowa. I missed the flowers which I had been so accustomed to seeing at home, and began at once to lay plans for my Dakota flower garden. I planted all the annual seeds that were considered the hardiest growers and the most prolific bloomers. At the end of the season, I found that most of them could not survive through the long intervals without rain, when the mercury soared from ninety degrees to one hundred degrees day after day. This failure with my first flower garden in South Dakota led me to make a study of drouth resisting varieties for the Northwest. I have found many varieties that can be grown satisfactorily, but the Zinnia heads the list. It is the alpha and omega of any garden annual. They do amazingly well in the



poorest soil and under other diverse conditions. They will survive longer drouth periods than most other annuals I have observed, and tolerate much neglect. They are practically free from insect pests and disease in our State.

This unsurpassed favorite, the Zinnia, will grow anywhere in the United States. We see them treasured in precious spaces along the city avenues; and again, we see them growing alongside of the humble homes of the pioneer, and in valleys remote from railroads or transcontinental highways. Everywhere in this nation of homes you will find the Zinnia, and always treasured for their prolific blossoming stalks and their many shades of color. In all justice to the Zinnia, while it is easily grown, it should be known that it will respond nobly to any extra time and care expended on it. When we think of Zinnias our minds automatically bring before us a mental picture of the huge flowers of the type known as the "Giant Dahlia flowered Zinnia," the greatest improvement in Zinnias yet produced.

The flowers are immense, five inches or more across and three to four inches in depth, and are held on long strong stems. The range of color is wonderful, with many blendings of pastel shades. We find this variety best adapted to mass planting, municipal gardens, vacant lots, borders, or where roadside planting is desired. They also make beautiful specimen plants.

The popularity of the pompom type of Zinnia has increased enormously in the past few years. Honors for the most popular type of flowers are divided between the large show type and the tiny button varieties. All who know these charming little plants are unanimous in praising them for both bedding and cut flower purposes. I could go on and on naming many beautiful varieties that are worth while, but I want to say a word about the origin of our own Zinnia garden.

Ten years last May we planted our first Zinnia garden and have continued planting every year since that time. Two years before this time, we had organized a Federation of Womans Clubs, consisting of nine clubs and organizations. Our objective was civic improvement, or serving our town in any way for the betterment of the community. We were "solicitors" as to what we could do to beautify our town. I suggested planting a flower garden, on one of our downtown vacant lots, and with all the knowledge I had gained about the ruggedness of the Zinnia, I proposed planting Zinnias. The club was favorable. Our first step was to get permission from Mr. H. E. Beebe to turn his vacant lot into a municipal flower garden. He very kindly gave his permission with this admonition: You may have it as long as it does not grow up in weeds. That was the first discouraging word, but we went ahead and proved our ability (as women)

to till the soil and pull weeds—or we think we have, judging from the length of time Mr. Beebe had allowed us to continue our garden on the same plot, and besides in late years gave us the use of other lots.

This first lot had had a building on it at one time, but had burned to the ground. This left the soil in very bad condition. When it was plowed and harrowed, stone, brick, glass, plaster and what not were turned up to the surface. We picked the larger pieces up and discarded them, and went forth to plant with many doubts. We planted our garden about May 15th. We got a man to mark the rows which were about one hundred and twenty feet long and the rows twenty inches apart. Then we invited all the ladies to the planting bee. We assigned each lady a row to plant. When the plants were up so they could be seen in rows, each lady weeded and thinned her own row, leaving the plants from eight to twelve inches apart. After this task was finished, we turned the cultivation over to a man hired for that purpose. By July our Garden was a riot of color.

I forgot to say, the first years we procured seed by soliciting the ladies to furnish seed for their own row. Since then we have planted the seeds raised in our own garden, or when weather conditions have been such that the seed did not mature, we buy from our own genial nursery man, J. B. Taylor & Son, who always carry the very best of seeds.

Having success with our garden the first few years, we have expanded our project and now have three Federation of woman's gardens. Our Yellowstone Trail booster, Mr. Parmley, has planted a large garden along the Yellowstone Trail in Ipswich. We also have flower beds in the city courthouse yard, city park, and on our school grounds. In addition to all this planting, two thirds of our private homes grow Zinnias in their flower gardens.

Zinnias! Zinnias! Everywhere.

Is why we have gained the distinction of being the Zinnia City.

THE PINTAIL

(Continued from page 44)

a while before, that the pintail was a smart bird. I had occasion to recall it again when I read that pintail No. 519, banded by Dr. Wetmore at Bear River Marshes, Utah, on September 24, 1914, had been killed at Brawley, California, on October 16, 1926. Truly a smart bird, which had succeeded in eluding both hunters and natural enemies for 12 years!

The return records on banded pintails show very distinctly the extensive migrations of the species. From a total of over 7,000 ducks banded in California, more than 1,000 return records on



pintails were secured, most of them birds which were re-trapped or killed locally. Out of 38 records from Alaska, 32 were pintails. Five returns from the farthest south, included three pintails from the vicinity of Mexico City. Very few of these California birds reached the central states, only one or two being killed in each of the states in our longitude.

More than one-half of the ducks banded by F. W. Robl of Ellinwood, Kansas, were pintails. Of the long distance returns, all of the 10 from Alaska were pintails, 3 out of 4 from Yukon, 39 out of 41 from California, and several from Mexico. One bird banded in May, 1928, was killed in South Carolina the following November, being the only return from the Atlantic coast.

A very unusual record was furnished by two pintails, one of which was banded at Dawson, North Dakota, September 10, 1929, the other in Utah on the same date. Both were shot the same day by a man at Toluca, Mexico.

HOTBEDS — THEIR CONSTRUCTION AND MANAGEMENT

(Continued from page 40)

or in individual squares of sod (turned upside down) so that when they are shifted to the field they may be moved without disturbing the root systems. It is necessary to start celery, cauliflower, and lettuce in hotbeds in order to give them an early start before the hot dry weather of summer. It is necessary to start varieties of late cabbage and tomatoes in hotbeds in order that they may mature before early fall frosts.

Before shifting hotbed grown plants to the field, it is very desirable to harden them off. This hardening off process is merely to gradually accustom the plants to field conditions. It is accomplished by lifting the sash off of the hotbed for longer periods of time and lessening the water given the plants. This checks the growth of the plants and makes them accustomed to outdoor conditions, thus enabling them to stand the shock of transplanting more successfully.

EARLY POTATOES

M. J. Tinline, Dom. Exp. Farm, Brandon, Man.

In planning for an early supply of potatoes for either home use or for market gardens, it is advisable:

- 1st. to use an early maturing sort.
- 2nd. to have the potatoes sprouted at the time of planting.
- 3rd. to plant early, and
- 4th. to keep the potatoes well cultivated.

Experiments conducted at Brandon Experimental Farm go to show the Early Bovee to be ready for use before either Early Ohio or Irish Cobbler. The tests have further indicated that having the sprouts on the tubers at planting time shortens the time between planting and

emergence of the plants. While it is generally recommended that these sprouts should be green, yet the writer has found it is possible to take the whole potatoes directly from the basement with sprouts several inches long, plant these and in two or three days have green leaves showing, and good crops have resulted. Where only a few potatoes are to be planted, this latter method is quite satisfactory.

Where sprouting the potatoes is not practiced, the next best plan is to put in the crop during early May. This has quite a beneficial effect on yield as well as on earliness. Clean cultivation is always advisable and where potato bugs are prevalent, it is of great importance to spray the potatoes before the insects have commenced to destroy the leaves.

With ordinary precaution, potatoes can be obtained fit for use at Brandon by the middle of July. In many homes, where there are poor storage facilities for potatoes, new potatoes at this season would be of great assistance to the family.

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