

NORTH AND SOUTH DAKOTA HORTICULTURE

OCTOBER 1940

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South Dakota peaches on a boxelder tree. Photograph courtesy of our President, a good judge of fruit.

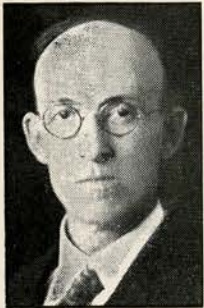
The 56th annual meeting of the S. D. State Horticultural Society will be held at Sisseton, Nov. 25th and 26th. We hope to see you there.

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THE KILDEER

by
O. A. Stevens



O. A. Stevens

Of the shore birds, none is so well known or spends so long a time with us as the killdeer. Perhaps as early as mid-March a warm wind blows in from the South and with it comes the familiar call "killdeer, killdeer". From then until late in October we may see, in fact cannot overlook, these birds as they run about the fields or edges of the ponds. They are not shy, usually noisy and conspicuously marked with some reddish brown on the back, showing as the bird flies up, and two narrow black stripes across the breast.

The killdeer belongs to the plovers rather than the sandpipers, having only a short bill and no hind toe. Mark Catesby called it the Chattering Plover and remarked that they were "very frequent both in Virginia and Carolina; and are a great Hindrance to Fowlers by alarming the Game with their screaming Noise. In Virginia they are called Killdeers, from some Resemblance of their Noise to the Sound of the Word." So we see that the early colonists at once applied the name to these birds.

It is a species of wide distribution, occurring in summer all over the United States and southern Canada to central Mexico. In winter they move southward but may stay as far north as southern British Columbia, Colorado and southern Illinois. Probably the greater number remain along the coasts in the West Indies, some reaching the coast of South America. Curiously enough, some of the birds have settled down in the south, forming two non-migrating races, one in the West Indies, one on the coast of Peru. In Florida they are reported as abundant in winter all over the state, nesting in small numbers in the north and central parts.

The nesting of the killdeer is a simple affair. Almost any place with relatively bare ground is acceptable. A small hollow perhaps surrounded by a few sticks or stones is the extent of the nest itself. Rarely is there any actual lining in the nest. Alexander Wilson found one which was "paved with fragments of clam and oyster shells, and very neatly surrounded with a mound or border of the same, placed in a very close and curious manner." Several times we found nests beside stalks of corn or potatoes or by small berry bushes in the garden. Nests have

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been found in the gravel along railroad tracks, one in the middle of a driveway and one on the graveled roof of a building. The eggs are usually four, buffy, spotted with brown, quite pointed at one end, about an inch and one half in length.

The old birds are especially attentive at the nest and if a person approaches they act as if injured and flutter away with loud cries to distract attention from the nest. People who have watched carefully say that in case of animals they stand in front of the nest or fly into the

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NEWSLANTS

Across the Garden Wall

by

Rev. J. Ralph McNeil



J. R. McNeil

This is to be just a friendly visit with all my fellow gardeners in the Dakotas, who have made gardening their hobby in God's great out-of-doors. We garden just for the pure pleasure we get from seeing things grow. The cultural training our America needs if you want my opinion is garden culture, it develops patience, destroys idleness and builds character.

As one has said, "Trees are the heralds of the past, a present and a future depicting the struggles of civilizations that have been and are to be." I have been in the state nearly forty years so it looks like I will soon be a native. We look at barren poplar and cottonwood tops in our tree groves and say its too dry to grow trees here. The truth of the matter is that these trees have covered their cycle of living, if they die without replacement we too will have completed our cycle of advancement. We in our county have some seventy-two miles of shelter belts planted within the last two years through the government setup. Maybe you are not in such a locality, but the State School of Forestry will provide trees at a very low cost. One other thought if we look back over thirty years we will see that we haven't grown many fifty bushel crops of wheat. Our first thought then must be that we do have a limited amount of moisture and our second that as long as this is our home we must do our bit and best to make it liveable.

In conversation with a friend of western North Dakota the remark was made it is too dry to grow flowers where I live. This is not so for we grew flowers further west and in a drier season, debating the issue will neither grow flowers and trees or prevent their growing. Our problem is the will to overcome our obstacles by patience and perseverance.

I have said all this to make this proposition to the South and North Dakota Horticulturists, we need to encourage by every rightful means the plantings of trees by every practical means possible. It seems to me we could not do anything that would be half so beneficial to our two states. I often think of a grove of stately Colorado Blue Spruce in Bowman county growing on a hill, planted and grown from seedlings. There they are in all their regal splendor as fine

a planting of trees as is to be found anywhere in our two states, a boost for every one planting trees.

Our native flowers grow in such profusion across all our prairies that none of us need ever be without a flower garden. If any one thinks we do not have worth while flowers, then consult some eastern flower growers garden book and see how many are suggested for plantings. Mother nature has given them a hardiness and a root system that can cope with our rugged climate and limited moisture. If weeds will grow flowers will grow, so lets remove the weeds and put flowers in their place.

As to types of gardens they are as varied as human nature and the more varied the more beautiful. It will be soon time to take the fish out of the lily pond. I like to take them out on a warm day before settled cool weather then they are easier to catch and to get out of the plants in the pool. Baby fish cannot feed on cold days and so if it gets too cold they will perish and so you lose your increase. The lilies can easily be stored by taking them out and letting them drain off and then placing them in a cool place in the basement with a burlap sack over them and moistened every once in a while so the roots will not dry out. As for the glads and dahlias I like to dig them in the morning of a warm day and let the sun thoroughly dry their roots before storage. While nature rests let us plan with renewed courage to keep on planting to keep our homes cheerful in a world that has forgotten that growth is the way up.

THE KILLDEER

(Continued from page 110.)

approaching faces. One author records that on riding toward a nest the bird flew at the horse, then changed to the fluttering method. One might ask, if they realize that different tactics are necessary for man, why do they not realize that man readily sees through the deception? However, the majority probably are deceived.

Incubation lasts about 25 days. Within a few hours after hatching the young are on the move, and the old birds are frequently seen with the group of downy young. One feature of the chicks is a rather long tail.

The killdeer is an especially beneficial bird. Its food consists almost entirely of insects, including grasshoppers, beetles, alfalfa weevils, wire worms, cotton boll weevils, cattle ticks, mosquitoes and other pests. Its food habits, together with long season and attachment to fields, give it an exceptionally high rating.

NURSERY INSPECTION

by

E. H. Everson, Secretary of Agriculture



E. H. Everson

The South Dakota Department of Agriculture through the Division of Inspections is required by law to make inspection of tree nurseries and other premises "to determine the presence of dangerous insects, arachnids, worms and plant diseases," and to adopt means of preventing their distribution in connection with the sale of nursery stock. We now continue with the story, begun last month.

The spiny elm caterpillar, the adult known as the mourning cloak butterfly, is causing a little damage in some

places. This caterpillar feeds on the leaves of the elm, willow, poplar and hackberry. The amount of injury depends upon the number present, but when abundant they may defoliate entire branches or even trees. When complete defoliation takes place and the tree leaves out again in the fall, death of the tree may result due to winter killing and the lack of leaf buds for the following year. If parts of leaves are missing or if entire branches are bare and stocked with purplish black, red-marked caterpillars whose bodies are covered with short pale hairs and regular bands of long, forked, black spines, generally feeding in groups, it may be safe to conclude that the insect is the mourning cloak. On maturing this caterpillar changes into a brown chrysalid covered with a purple bloom. This pupa stage is usually found suspended by its small end from the limbs of the affected trees. Here it remains for a few weeks then develops into a beautiful, brownish black, butterfly, whose characteristic markings are a wide yellow band on the edge of the wing, inside of which there is a row of blue or purple spots and two yellow costal spots near the tip of the fore wings. The drum shaped eggs are found in bands about the

twigs of the feed trees. The insect overwinters in the adult stage hiding under rocks and bark scales for protection. Control of the insect may be gained by the application of lead arsenate spray, or if not too severe, by the removal and destruction of infested branches.

In the southeastern part of the state the red spider is proving to be somewhat of a menace to our evergreens. The spider is really a small mite about one-sixtieth of an inch in length and varying in color from pale yellow to green or red. The mite feeds through sucking mouth parts with which it pierces the epidermis of the leaf. With the removal of much of the cell, substance from the leaf the plant takes on a pale sickly appearance more noticeable at a distance than close up. Upon close examination may be found a very fine web matting the needles or the scales. Detection of the mite itself is difficult without a microscope but may be accomplished by brushing the branches on to a sheet of white paper and watching it very closely for a minute or so to detect movement. After mating the female lays some seventy eggs in the web mat. In a period of from four to five days these eggs hatch into small crawling young which closely resemble the parent except that they have only three pair of legs instead of four. In the process of their development the red spider molts two or three times during a period of about forty days, at the end of this time they are mature adults ready to produce a third generation. The mite is somewhat hard to control for it can live over winter in any protecting grass or shrubbery and be viable for infection the coming spring. The most desirable treatment for the red spider of evergreen trees is a spray of lime sulphur. This spray will have to be repeated several times for it does not kill any of the mites that may still be in the egg stage at the time of spraying.

Leaf and twig rust of ash, caused by *puccinia fraxinata*, is found to attack several varieties of ash trees, the severity varying much from year to year. In the United States it is somewhat localized to the eastern and central states. In South Dakota we find the northeastern third of the state to be the only place showing infection, the severity of the disease increasing towards the center of this section. The rust is characterized by irregular swollen patches generally on the blade or petiole of the leaf, but may, in the case of seedlings, be found on the stem proper. A severe leaf infection produces much loss of effective foliage resulting in a very dwarfed growth. Stem infection on seedlings may bend the growing stem beyond right angle to its normal growth. Soon after the formation of these

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GOVERNOR BUSHFIELD A NATURE LOVER

Interview by Charles S. Weller

Division of Horticulture

South Dakota Department of Agriculture



During an early morning walk I encountered Governor Harlan J. Bushfield examining one of the many fine trees we have on the State House lawn. We talked of trees. He told me so much of interest I requested and was given the privilege of submitting his observations to the editor of the **North and South Dakota Horticulturist**. The Governor's statement in his own words follows:

"I have been interested in the planting of trees and shrubs for many years. In fact, ever since I can remember, trees, flowers and shrubs have always been a hobby with me.

"After many years of experience—much of it filled with disappointment—I have come to a number of rather definite conclusions. There are portions of South Dakota not adapted to tree culture, but those are comparatively few in number. Trees will grow almost anywhere if ordinary care be given them. I am well aware of the fact that the shelter belt project has expressed itself adversely upon the planting of trees in many places within this state. I do not agree with them upon their conclusions, for the reason that those conclusions do not square with experience.

"The homesteaders of Dakota Territory filed on land under the Timber Culture Act, requiring a certain number of acres of trees to be planted upon every tree claim in order to obtain patent to that particular 160 acres of land. All over the State of South Dakota, or rather that portion of it that lies east of the Missouri River, tree claims were planted. Farmers also planted thousands of groves about their farmsteads. For nearly fifty years those groves continued, in spite of cycles of adverse weather, and many of them without any care whatever. This, to my mind, proves conclusively that timber can be grown almost anywhere within our state. If reasonable care be added, with the present day

knowledge of tree culture, success is practically assured.

"During the past two years, the Department of Agriculture of South Dakota has sold and placed with the farmers of this state over a million trees. I expect to urge the continuation and expansion of that program in every way possible within my jurisdiction. It is my hope that I may live to see the day when most of the farms of South Dakota have groves about their farm buildings, have small lakes upon their fields, with trees and shrubbery about them and fish in the waters thereof. When that objective is attained, we will have brought to our people a measure of happiness and contentment not known before.

"Experience has taught me that there are certain species of trees that do well in our soil and climate. They are the cottonwood, box elder, American Elm, hackberry and Chinese elm. The common lilac is perhaps the hardiest of our shrubs, and, as for grass, lawns may be obtained anywhere with a reasonable amount of water for irrigation.

"The Capitol grounds and the lawns surrounding the Governor's Mansion are an oasis of lovely lawns, thriving shrubbery and trees. These grounds are an example of what can be done anywhere in South Dakota with care and a reasonable amount of water."

NURSERY INSPECTION

(Continued from page 112.)

rust swellings they are covered with nipple-like projections which break open to release a mass of orange-yellow spores. The color of the spores and the deformity of the leaves make the disease conspicuous. The spores released from the infected spots on the ash are not capable of producing more rust on the ash tree. As in the case of other rusts the use of an intermediate host must be employed, in this case it is the marsh grass (*Spartina*) which serves this function. The spores germinate on this grass producing a new set of pustules which overwinter and are then ready to infect more ash trees the next spring. Control of the disease would call for a complete removal of all the marsh grass from the infected section, this being impossible it is fortunate that there are relatively few seasons that are favorable to the development of the rust.

The research station at Pretoria, South Africa, has under study a giant star grass as pasture, hay and soil conserver. In about six months a single runner grew nearly 50 feet.—National Seedsman.



MANITOBA NEWS LETTER

by
W. R. Leslie



W. R. Leslie

Horticulturists from the Northern Great Plains region, after visiting the Morden Experimental Station and the Brandon Experimental Farm, held their two evening meetings in the Riding Mountain National Park Museum building.

Mr. M. B. Davis, Dominion Horticulturist, addressed the group on August 20, outlining many of the research horticultural problems under way at the Central Experimental Farm, Ottawa. Different varieties of apples vary in their optimum storage temperatures. The range is from 32 to 40 degrees. The concentration of carbon dioxide gas in the storage chamber is an important consideration, as is the humidity of the atmosphere. Fameuse stores well at 32 degrees, MacIntosh at 40 degrees. Mineral deficiencies in orchard soils have been interpreted by foliage changes including unusual coloration and abnormalities, such as scorch and burn.

In vegetable breeding emphasis is being placed upon disease resistance. Extensive investigation is being made in double-working fruit trees to ensure vigorous roots and durable healthy trunks with strong crotches upon which to topwork the varieties to be fruited. Many promising new varieties of apples are coming out of the third crosses. These had the Siberian crab apple as great-grandmother. By crossing Burbank plum with native Canada plum the Grenville has resulted. It is a huge red plum. This variety is thriving at Morden, where it ripened in late August. A number of new varieties of cherries, strawberries, and raspberries are introduced for testing across Canada on branch Experimental Farms and Stations. Other prominent projects deal with colchicine, plant hormone acids, vegetatively propagated root stocks for fruit trees and foundation seed stock of vegetables.

Mr. A. Griffin, Chief Engineer of the Natural Resources Branch of the Canadian Pacific Railway, gave a historical sketch of the development of tree growing at two irrigation headquarters, Brooks and Strathmore, Alberta. The audience was gratified to have first-hand information on these accomplishments. The tree and fruit work at Brooks is widely recognized as being an unusual accomplishment. A little over twenty years ago the area was treeless. Today

the Horticultural Experimental Station at Brooks is comparable with the Morden Experimental Station in its demonstration of trees, shrubs, walnuts, apples, plums, cherries, elderberries, grapes and improved native fruits.

The whole of the 19th was devoted to plantation study of the 200 garden acres at the Morden Station. The tour to Northwestward made an early start on the 20th. Some visited the plantations of Mr. Harold Orchard near Miami. Impressive features were heavily laden trees of Parker pear, formerly Minnesota No. 1, Mendel pear, Patricia apple, Melba apple, Minnesota 89 plum, and a number of Mr. Orchard's own productions in plums, cherry hybrids and sour cherries.

The afternoon was used in visiting the Brandon Experimental Farm. The benefits of irrigation in the farm vegetable garden were vividly shown. Visitors were keenly interested in the arboretum and in the original crab apple orchard now approaching fifty years of age.

The Canadian National Park in the Riding Mountains furnished headquarters for the following two days. Conference meetings were held in the Museum buildings on Tuesday and Wednesday evenings. The plantations of Mr. F. L. Skinner, near Dropmore, and Mr. W. J. Boughen, Valley River, occupied Wednesday. Many new ornamentals and new fruits were observed and tested at these two northerly and extensive estates.

On the evening of August 21, Professor W. H. Alderman, Chief of the Department of Horticulture at the University of Minnesota, discussed the pollination of plums. The new American-Japanese plums tend to be more or less difficult to satisfy with pollen. A number of valued varieties are almost useless as pollinizers. Among these are Tokata. On the other hand, its close relative, the Kaga, is an excellent pollinizer for such varieties as Hennepin, Superior and Waneta. Kaga is good on Elliott, La Crescent, Red Wing and Underwood. At the Minnesota State Fruit Breeding Farm, Kaga is selected to pollinize early blooming varieties, South Dakota 27 for mid-season, and Surprise for late-blooming plums.

The two sisters of Kaga, the Hanska and the Toka, are considered bearers of effective pollen. The two best known prairie sand cherry-plum hybrids, Sapa and Opata, readily cross-pollinize. This condition is evidenced in the fruit breeding work at the Morden Station. A number of Opata seedlings have the deep purplish red flesh and firmer texture characterized by the Sapa.

A grower planning a commercial orchard of

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PRESIDENT'S CORNER

by
H. E. Beebe



H. E. Beebe

October Offers Oriflammes

Both North and South Dakota had many beautiful flower gardens this year, as shown by newspaper articles such as the following from the pen of Miss Light, Editor of the Roscoe Independent, regarding the Paul Elford garden: "At the front of the garden are large lovely cannas and around them grow sweet allysum, deep blue lobelia and behind these is a high fence covered with heavenly blue morning glories. Back of all these are a sea of dahlias, gladiolas, marguerites and marigolds, sweet peas, zinnias, painted tongue, African daisies and asters with yellow centers, as well as cosmos, bachelor's buttons and rows of stately hollyhocks.

"There is a pool in the garden in which minnows swim around and around the pool there abounds the lovely blossoms of petunias, blanket flowers moon flowers and kalenzia."

In the Mobridge Tribune a former Ipswich girl is an ardent horticulturist as shown by the heading of her column, "Lotta Green". Lets hope there will be a lot in South Dakota, this coming spring.

Savants Shall Soon See Sisseton

The South Dakota Horticultural Society meets this year at Sisseton on November 25th and 26th and the program committee will be Professor L. L. Davis, Brookings, J. C. Anderson, Eden and J. B. Taylor, Ipswich, who will cooperate with Secy. Simmons in preparing the program and getting the proper publicity during October and November.

Harry Graves, North Dakota Secy. will be there with a select group of North Dakota Horticulturists, and the Porter gift will be discussed by the Trustees. This promises to be the best union meeting of the two societies. See your local newspaper for further particulars. Graves will exhibit a new flower.

When Water Whirlwind

Due to the loss of many groves and fine trees in the Dakotas during the last eight years, on account of lack of rainfall artificial watering has become more important, and during the last two months there has been considerable discussion in the Sioux Falls Argus Leader regarding

the question of, "To water or not to water", in the fall.

As per letter from Brother Rockwell just received, apparently the safest plan is to lay off watering about August 15th and then start up after the leaves fall, which will probably be around September 15th. This is to prevent new growth starting in the fall to be hurt by killing frost. After the leaves are off every one recommends watering heavily. It is just like making love to a widow, impossible to over do it.

Porter's Generous Gift

John Taylor and I had a pleasant visit at Aberdeen with Harry Graves and President McNeil of the North Dakota Horticulture Society, discussing the fine gift of Mr. Porter.

The Porter's memory will remain green for years in both the Dakotas.

The following poem is in memory of Mrs. Porter and is from Edward Bliss Reed's, "September."

Early lamps burning
So soon the night falls,
Leaves, crimson turning,
Make bright the stone walls.

Summer recalling
At turn of the year,
Fruit will be falling
September is here.

President Pans Printer

The September notes mentioned a very beautiful poem which was left out by whoever set up the magazine in Pierre. As a compositor this party would be wonderful on the business end of a pitch fork. The only reason for trusting such a mind with a spreader would be in the hope that he might fall backwards off the seat.

Printers often do not like poetry. How do they get by in singing America?

In any case the thought for October will be in prose and written by J. O. Bailey, editor of the Aberdeen American, the latter part of which is especially dedicated to whoever sets up the Horticultural magazine in the future.

"Whittier liked this season. He wrote, 'The tints of autumn a mighty flower garden, blossoming under the spell of the enchanter, frost.' James Whitcomb Riley also looked upon it from the brighter point of view. Here is one of his expressions: 'O, it sets my heart a clinckin' like the tickin' of a clock, when the frost is on the punkin and the fodder's in the shock.'"

Tyron Edward presented a beautiful thought

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QUESTIONS AND ANSWERS

by
Professor L. L. Davis

Would two or three irrigations be enough for a small orchard for home use and local market?



L. L. Davis

I do not believe in irrigating an orchard unless the trees show by the condition of their growth that water is needed. It is just as possible to over-water as to under-water. Certainly irrigation leads to a tremendous number of problems, and the more information one has on the subject the easier it

will be to have a successful irrigated orchard. If apple trees are making five or six inches average annual growth, the leaves do not show signs of wilt in the fall, then irrigation is not necessary. In fact, in some cases they may be more easily killed by winter conditions if irrigated. However, all trees, be it orchard trees or ornamental trees, must have sufficient water in their tissues to carry them over the winter.

I would suggest that you contact the United States Department of Agriculture office of Information for information on irrigating the orchard.

Would you suggest that we get bees to put in the orchard? There are few orchards and bees in this part of the state and a friend told us it would be a good thing for us to do.

Bees are an essential part of an orchard. They must be present to insure good pollination, otherwise fruits will not set.

Would you kindly advise me in some Horticultural work? I wish to plant some seed of American elm, white ash, hackberry and Caragana. Should I plant these now or wait until next spring? Also I wish to transplant some seedlings—should I do so now or a little later in the fall? Would it be advisable to give new trees, set last spring, an abundance of water from now until the ground freezes? Is there a market for the seed above mentioned?

American elm and white ash seed may be stored dry and cool, 40 degrees Fahrenheit, over winter, and planted as one would peas or beans next spring. Hackberry seed should be cleaned as soon as ripe and stratified in moist sand over winter. Most individuals find it easier to stratify the seed by stirring the seed into moist sand and storing in a box buried a foot deep in the garden. Caragana seed should be handled in the

same way, except that it will not need to be cleaned.

I would not advise transplanting seedlings of evergreen or of deciduous trees or shrubs this fall in South Dakota. Transplanting is much more sure if done one month after the frost goes out of the ground in the spring. However, if conditions make it necessary to transplant in the fall, then by all means give the seedlings plenty of water just before moving and afterwards. It is desirable to give newly transplanted trees an abundance of water, providing, of course, that one does not add so much water as to water-log the soil.

Occasionally there is a market for the seed mentioned. I would suggest that you contact one of our nurserymen. If they have need of it, they will be glad to buy it of you.

Can you tell me the correct time to plant Chinese elm seed? Can they be planted now?

Chinese elm seed should have been planted as one would peas or beans in a well prepared, well pulverized garden soil, shortly after the seed matured last July. The seed is relatively short-lived when stored under ordinary conditions, although if stored under the right temperatures and humidity, the viability is not lowered too greatly for a year. I believe I would take a chance on this old seed and plant immediately. It certainly will not be any good next spring and perhaps will still grow this fall.

I am sending you some specimens of two different apple trees which are infected with some form of disease. Will you please tell me what it is and how I can check it?

The leaves which you sent under separate cover are attacked by bacteria which causes a disease known as fire-blight. It attacks blossoms, young fruits, tender tips of twigs, and shoots in rapid growth, and less frequently, branches and trunks of the trees. Fire-blight is favored by moist, hot weather and retarded by drought, cold temperatures and slow growth of the infected trees. It appears at blossom time and is apt to continue until July. It lives over from year to year in the infected twigs and in the infected cankers which appear on large branches. When growing conditions are the most suitable in the orchard, the disease makes the greatest progress. In some cases the infections may dry up and become impotent.

A tell-tale sign of infected branches is when the leaves turn black and turn up but continue to cling to the twigs as they would if a small bonfire were built under or near the trees.

The bacteria causing this disease are carried

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BOOK REVIEWS

by Mrs. F. Briley



Mrs. F. Briley

Wild Flowers of North Dakota, by O. A. Stevens. Bulletin 269, distributed by the Agricultural Experiment Station, North Dakota Agricultural College, Fargo, N. D.

Flora of South Dakota, by William H. Over, Curator of the University Museum, Vermillion, S. D. Published by the University of South Dakota.

Nothing could give me more pleasure than the privilege of reviewing the two books that were sent to me this month, *Wild Flowers of North Dakota* and *Flora of South Dakota*. I can't imagine a horticulturist without both of them and they have been of invaluable help to all lovers of wild flowers who have been fortunate enough to know where to procure them. These two bulletins are more helpful in identifying plants in the Black Hills than the Rocky Mountain flower guides. *Wild Flowers of North Dakota* gives a brief description of the principal areas and their flowers: Woodlands, pond and river banks, the prairies, western hills and buttes, sand dunes and sandy soils; also a paragraph about wild flowers season from April to September.

A list of flowers according to color under five different headings is very helpful in identifications. Two hundred different kinds of flowering plants growing wild in North Dakota are described by Mr. Stevens. The bulletin also includes a splendid plea for wild flower preservation, by the author.

Flora of South Dakota, is an illustrated check list of flowering plants, shrubs, and trees of our state. The seventy-five illustrations of plants included are the best help in South Dakota that we have, to date for plant identification in bulletin form. They were prepared from photographs taken by Dr. Craig S. Thoms, Vermillion, and Professor A. C. McIntosh.

The author has done extensive collecting over the entire state during the growing seasons since 1912. This check list is the result of his pains-taking research and gives a complete list of the specimens known to grow in the state. Compiled in manual form the plants are listed under the five great heads, also giving genera and species. Common names are included where possible. Professor Over also informs us that the Department of Botany, University of S. D., will be glad to identify plants sent in from

various parts of the state. This service has been greatly appreciated by myself and other friends of Professor Over, at Dell Rapids.

MANITOBA NEWS LETTER

(Continued from page 114.)

hybrid plums prudently gives thought to inter-pollinizer relationships. A planting of Radisson, Tecumseh, Underwood, Red Wing and La Crescent might be only lightly fruitful. The inclusion of an occasional tree of Kaga, McRobert, Mina, Mordena and Surprise would probably change the plantation into heavy fruitfulness.

At the business session, North Dakota was selected for the 1941 meeting of the group. The State College at Fargo, and the Federal Great Plains Field Station at Mandan, will be the central points visited. New officers elected are W. L. Kerr of the Morden Experimental Station, Chairman; W. P. Baird of the Mandan Station, Vice-Chairman; and Professor Harold Mattson of the Fargo Agricultural College, Secretary. There are no fees and hence no Treasurer.

These annual meetings are of very much importance to prairie horticulture. Experimental work is visited, members report on their experiences, and all are richly benefited from close contact with their fellow investigators.

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BISMARCK, N. D.

SECRETARY'S CORNER

by
W. A. Simmons



W. A. Simmons

We wish to acknowledge, with many thanks, ten dollars, received from Mrs. C. E. Lennan, a life member of Mobridge; a much appreciated donation. In her letter to our Treasurer Mr. Dybvig, she writes: "Many years ago I became a life member of the Society and I have enjoyed the magazine and also enjoyed watching the progress of the work in this line for our State. I desire to make my appreciation more evident than mere words and so I am enclosing my personal check in the sum of ten dollars with good wishes for continuance of the fine work being done."

Recently Mr. H. R. Woodward of Hot Springs sent us a box of very large choke cherries he found among the foothills of the Wind River Mountains, in Wyoming. These we have sent on to Dr. Hansen who will undoubtedly plant the seeds hoping for still greater improvement in the seedlings. Mr. Woodward is Senior Naturalist at Old Faithful, Yellowstone Park during the summer school vacation. In his letter he writes: I found upon returning to Hot Springs, the trees planted at the Robertson park to be growing. Some of course died from the drought but two nice Ponderosa pines are evidently established as are also some Chinese elms, honey locust and quite a few native junipers or red cedars. They are small but in time will develop. One nice creeping juniper at the rock placed at the spot by the Horticultural Society is also growing fine. I expect to have others established before too long a time."

In a letter to the ARGUS-LEADER Mr. Frank I. Rockwell, State Extension Forester clears up some conflicting recommendations regarding fall irrigation of trees. He explains the needs of trees for plenty of moisture during the heat of summer but says irrigation and cultivation should cease by August 15th, in order to allow the tree to ripen up its wood and be in shape to survive the cold of winter. He explains that much of the killing back of the Chinese elm is caused by late summer rains that keep the tree growing and give it no chance to ripen its wood. But after a freeze has stopped tree growth, the ground should be soaked to give the trees sufficient moisture to carry them thru the winter. He gives the gist of the matter in a paragraph, as follows: "Proper arbori-

culture then contemplates withholding irrigation and cultivation of trees from the middle of August until growth is stopped by frost, and then soaking the ground before freeze-up." Sept. 16th. The following letter just reached me from Secretary Graves of the N. D. Society:

"The meetings this year were well attended at practically all of the sessions. All of the talks were very well received. I think everyone was especially pleased with Mr. A. M. Brand's talk on peonies and lilacs. I have wished many times since that we would have had his talk taken by a secretary in shorthand. With the exception of the last two numbers on the program, everyone appeared as scheduled. Time did not permit the last two numbers to be given.

"The banquet served under the auspices of the Fargo Garden Society, was a very fine one and set a new record for brevity, the entire banquet and program taking only about an hour and twenty minutes.

"The annual fall show sponsored by the Fargo Garden Society which was held in conjunction with the Horticultural Society meetings, was a very definite companion attraction. The evening program of the fall garden show attracted several hundred visitors. The annual tour which visited several points of horticultural interest in Fargo was under the direction of Mrs. H. L. Walster and was very much enjoyed by all those making up the tour.

"By the time you receive this letter I expect to be on my honeymoon in the Minnesota lake region."

Evidently Mr. Graves has committed matrimony; extolled be leap year.

The Minnesota Experiment station has certainly turned out something distinctly superior in their Superior plum. Mr. Geo. W. Gurney sent us a box of them just before our Sioux Empire fair and on taking a plate of them to display there, they attracted much attention on account of their great size and their pear shape. Many thought they were pears and had to be confronted with a real pear before they would believe they were plums. The flavor, also was very fine and if they are hardy enough to withstand our trying climate, will soon be extensively raised here. We are gradually getting our program in shape for the Sisseton meeting Nov. 25th and 26th. and expect to have one worth driving a long way to hear. Many of our North Dakota friends will be with us, if the roads are open at that time, as we expect them to be. We hope many of our readers are planning to attend.



FRUIT & VEGETABLE NOTES

by
F. X. Wallner



F. X. Wallner

There is a 50% increase in the North Dakota potato crop this year and 350 growers recently held a meeting to discuss ways and means of obtaining a price for them that would make it profitable to dig them. It was decided to ask the F. S. C. to buy a few car loads in the hope that the price could be kept up to 65 to 70 cents per hundred, sacked. This should mean that field run potatoes would be sold for 50 cents per hundred or less and would be cheap stock for a trucker, wanting to grade them himself and use the smaller sized ones for seed stock. Sacks and grading cost money but this bulk northern stock at these prices looks like a good buy, to me.

All Western states show a decrease in onions and there is a small decrease in all states compared to 30 days ago, but all onion growers in South Dakota are not counted and there are growers with large plantings; some claim over a thousand bushels per acre. I have been standing at the top for more than three weeks, topping the best crop we ever grew. There is some confusion between Penn State Earliana and Penn State tomato, very different varieties. As I was about to give up Bison tomato for next year I saw a nice large field of large, smooth fruit, much superior to any I had grown before, so I got some of this seed to give them another trial next year.

The sweet potato crop will be 66 million bushels and the Irish potato crop will be about 382 million bushels, still about 5 to 1 in favor of the regular potato. The frost of early September caught most garden crops just at the peak of production. Where it hit three nights it caught the tomatoes, peppers, melons and cucumbers. This has been a very short growing season in places where the ground was too wet to be worked and planted early. In one place I saw most all muskmelons still on the ground, just beginning to ripen, even several areas that were set in the field from plants. Five varieties of squashes were just maturing and needed two weeks more of growing weather to mature a fine crop. These low garden spots with water close to the surface, are extra fine in dry seasons but not the best when there is too much rain or when the season is short.

A short time back I thot the sweet spanish

onion was the best to grow, but I have come to the conclusion that the globes are the best and much the best for storage; the sweet spanish is a poor keeper and in adverse weather it does not do well. It cannot take the extreme heat, or in other words, it cannot take the extreme changes of weather; it just is not as hardy here.

QUESTIONS & ANSWERS

(Continued from page 116.)

from place to place by plant lice and other insects, particularly honey bees, who may carry the bacteria from diseased blossoms to uninfected blossoms. Absolute control of all insects is the first essential. A spraying program employing the use of arsenate of lead and Black Leaf 40 is necessary. If only a few trees are growing blighted blossoms, their twigs should be removed as soon as the infection is noticed. A sharp knife is employed and a cut is made in the healthy wood several inches below the dark-colored wood. After each operation the knife must be dipped into a solution of corrosive sublimate, 1 part to 1000. The disinfectant solution is corrosive, so must be carried in a glass jar, earthen crock, or a wooden pail. A formalin solution may be substituted for corrosive sublimate. To prevent corrosion, the knife must be wiped dry when the work is completed. In large plantings, consisting of several dozen trees, it is not practical to cut the numerous infections from day to day. However, in late summer, all trees should be gone over and blighted twigs removed through healthy twigs. Large branches showing black cankers are cut out and the wounds sterilized with the 1-1000 corrosive sublimate solution which is applied by a sponge or cloth. Later these wounds should be painted with a creamy paint of Bordeaux mixture and raw oil or with white lead and raw oil. Next April, 1941, the trees should be inspected and cankers removed and the wounds treated. It would also be well to spray the orchard immediately with Bordeaux mixture, 6 pounds to 50 gallons of water and 1/2 pint of nicotine sulphate.

PRESIDENT'S CORNER

(Continued from page 115.)

when he wrote: "The leaves in autumn do not change color from the blighting touch of frost, but from the process of natural decay,—They fall when the fruit is ripened, and their work is done.—And their splendid coloring is but their graceful and beautiful surrender of life when they have finished their summer offering of service to God and man. And one of the great lessons the fall of the leaf teaches, is this. Do your work well and then be ready to depart when God shall call."

SUMMER'S WANING

by
W. E. H. Porter



W. E. H. Porter

With the arrival of October garden beauty tends to be reminiscent, and lucky are those who had sufficient foresight to plant Oscar H. Will & Co's. fall asters and chrysanthemums of proved hardiness and permanence. Here are some late summer notes: Aug. 2nd. A drenching continuous rain; cooler. Cherry rose blooms chandelier like crown stems of *Talinum calycinum*, bulbs planted last October; after short rest period George Will rose is out again, also Paul Neyron, a bush of some years standing, both fragrant. Also second bloom on the madwort *Alyssum montanum*. Borsch's perennial *coreopsis rosea nana*, a rock garden plant of highest order shows rose tinted white daisies peeping thru pale green fernery foliage. This plant spreads by root run and is easily divided and white stellate hawthorn scented flowers of *Sedum populifolium* cover the clumps like snow and another surprise reveals the perennial spring sown *Alyssum condensatum* with yellow bloom in axils of silver foliage. Aug. 7th. Cool weather succeeded by torrid heat—continuous sun with shade temp. of 89. Swiss Giant pansies are very beautiful, about every color and blend, averaging 2½ inches in diameter with plants heavy enough to shade the ground. Borsch's new variety of Oxe-eye daisy chrysanthemum maximum *Beaute Niveloise* has blooms 4½ inches in diameter, rays are long, wavy and etched. The annual *Leptosyne Stillmani* in continuous bloom from early June, about 1 foot high with bright yellow flowers springing from pale green coreopsis-like foliage should be better known and also the dwarf yellow yarrow *Achillea tomentosa* never out of summer bloom. A new annual thistle from southern Europe *Silybum marianum* (blessed thistle) dominates any location it happens to occupy tho the large white marbled leaves are handsome 3-4 ft. long and a foot or more across. The beautiful fuschia *riccartoni* that was frozen down in May is now in bloom with its graceful pendant flowers; the calyx is dark turkey red, corolla deep purple. This and hardy *Begonia evansiana*, not yet in bloom, a native of Java found at altitude of 10,000 ft. have to prove themselves in North Dakota, both however do well in summer semi-shade. *Daphne* flowered honeysuckle also blooms again—twin pale cyclamen purple flowers are

charmingly fragrant. Aug. 17th. Cool west wind with temp. at 62 and wheat harvest in full swing reminds one that summer is on the wane; the misty pale violet bloom of sea lavender (*Statice latifolia*) carried on a table flat corymb 20 inches across attracts attention and I believe is suitable for winter bouquets and at last our blackberry lily has opened, the ruddy flowers somewhat resemble the day lily and are carried well above the tall iris foliage. Aug. 21st. Cloudy and windy, temp. 55. Another *sedum pruinaum* in flower, blooms stellate pink on order of *populifolium* with meadow sweet fragrance; also horner poppy *Glaucium flavum*, a handsome plant with its rigid steel blue foliage and curious 4 petal yellow flowers with large central pistil surrounded by a thick tuft of orange anthers; the horn apparently refers to the recurved horns of stigma. *Anchusa affinis* makes a fine showing the forget me not flowers are small but very numerous and florets are of two distinct colors, hyacinth blue and amethyst violet carried on same cluster. Our white flax *linum perenne* album like the blue type, flowers freely from seed the first year but white flowers of *Geranium sessiflorum*, a ground hugging alpine, are a distinct surprise for perennial geraniums are not given to bloom until the second year. Gorgeous indeed are the multicolored *convolvulus tricolor* in violet purples, imperial almost black purple, white, wedgewood blue, also pink and crimson. Aug. 30th. Clear after 30 hour rain, white flowers of *Nuttallia decapetala* are out, a peculiar feature of this species being that long brush-like stamens with the petals springing from calyx giving the flower the appearance of the large sweet sultan. Volunteer spring seedlings of Oscar Will's New Zealand *Delphinium* in bloom among which is one fine albino. Sept. 2nd. Clear sky, slight haze and tho shade temperature of 72 may delude us with summer siren song, the blooming of hollyhocks, golden glow, Will's dark red mum, pink and red monardas, ripening of black currants and plums and flocks of migratory birds bunching up, all tend to remind us of early autumn.

Scientists have been tearing apples down into many useful by-products and the surface has just been scratched. Under date of Aug. 12th, a newspaper article reported that apple seeds are rich in a muscle-regulating substance, probably a vitamin. Dr. Ira Manville, of the University of Oregon medical school, stated that eating the ground apple seeds or drinking the oil pressed from them had both caused remarkable recoveries in animals near death with wasted muscles. —Maryl and Fruit Grower's New Letter.