A GARDEN OF FLOWERS FOR EVERY HOME

The WINNIPEG FLOWER GARDEN

1952

Presented by the

WINNIPEG HORTICULTURAL SOCIETY

R BROWN

Foreword

This is the first opportunity I have had to thank you all for the honor conferred on me and the confidence you have placed in me in electing me as your President for 1952. Give me your wholehearted co-operation and I know we can forge ahead and make this a record year.

Your Directors take pleasure in presenting the 1952 edition of "The Winnipeg Flower Garden." The production of this book entails a great amount of work by our Year Book Committee. It is intended as a guide to those who enjoy gardening and beautifying their homes.

Look around then. Let each member interest a friend and get a new member. If we do this we can easily double our membership this year.

I wish to express appreciation to our Advertisers, Donors and Contributors, who have made possible the publication of this book, and express gratitude for the very fine work of the Year Book Committee.

Wishing all the Officers and Directors as well as members and friends a very Prosperous and Healthy Gardening Year,

T. YAGER,
President.

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President's Report

To the Members of The Winnipeg Horticultural Society:

This is the 21st annual meeting of the Winnipeg Horticultural Society. Our Society has now come of age. A great deal has been accomplished in the years of our organization's existance. Its future success will depend on the vigor with which it promotes matters of interest to those interested in horticulture.

Our membership was 468 at the end of our year. There were 11 General Meetings with average attendance of 110. The 5 Directors' Meetings held during the year had an average attendance of 14.

Over 100 members and friends attended and enjoyed the annual picnic as guests of our good friend, Mr. Leslie, Superintendent of the Experimental Station at Morden.

The Society, at the request of the Flood Control Board, distributed to flooded out gardeners over 9,000 perennials donated by the growers of Holland. The undertaking, which involved a great amount of time and work, was carried out by Mr. Tanner and members of his Committee.

The entries in the Home Garden competitions were much larger and the gardens were of a high standard. The Society again provided judges for the vegetable garden competition sponsored by the Winnipeg Free Press. Those responsible for the judging were: Messrs. Hector MacDonald, T. Howard, R. Skelding, F. J. Weir and Grant Churcher.

Mr. Claude Law, Chairman of the Year Book Committee, was responsible for the production of another outstanding book, of which over 1,400 copies were distributed.

The highlight of the Society's activities during the year was the annual Flower and Vegetable Show, staged in the Civic Caledonian Rink in conjunction with the Manitoba Horticultural Association Fruit Show and the Honey Producers. The show was formally opened by His Honour R. F. McWilliams, the Lieutenant-Governor of Manitoba. It was one of the largest shows of its kind ever held in this city and had a greater number of entries than any previous year. The attendance was beyond our most sanguine expectations. The credit for the outstanding success of the Show is due to the fine work and effort of Mr. Tanner, Chairman of the Show Committee, and Mr. Weir, the Provincial Horticulturist.

It is with deep regret that we record the death of Dr. Speechly, one of our life members. Dr. Speechly had all the attributes of a fine gentleman. His gracious manner endeared him to all who knew him.

In conclusion I should like to record my appreciation of the fine co-operation received from every member of the Board of Directors during the two years I have been your President.

A. M. OSWALD

Winnipeg Horticultural Society

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MR. G. S. REYCRAFT, 92 Queenston Street

2nd Vice-President,
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Secretary-Treasurer,
MR. R. W. BROWN, 675 Valour Road.

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1932—Mr. William Stubbs*
1933—Dr. R. W. Kenny*
1934—Dr. Percy G. Bell
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1936—Mr. R. R. Nichol*
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1946—Mr. J. C. Williams
1947—Mr. J. H. Nichol
1948—Mr. W. J. Tanner
1949—Mr. Q. C. Moffatt
1950—Mr. A. M. Oswald
1951—Mr. A. M. Oswald
*Deceased

Winnipeg Horticultural Society

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR YEAR ENDING OCTOBER 31st, 1951

Membership—462

RECEIPTS

Membership fees	$ 468.00
Government Grants—Exhibition	313.00
Government Grants—Membership	48.60
Municipal Grant	100.00
Donations	467.75
Entry fees	97.60
Advertising	1,459.25
Subscriptions to Magazine	75.50
Annual meeting, tickets sold	90.00
Sale of books	131.00
Miscellaneous	9.81
	$3,260.51
Balance on hand, Nov. 1st, 1950	860.80
	$4,121.31

DISBURSEMENTS

Flower, Vegetable and Fruit Show	$1,208.65
Home Grounds Competitions	243.50
Year Book	1,305.60
Printing	174.30
Postage	196.33
Honorarium	225.00
Premiums	22.50
Your Garden and Home	75.50
Telephone	43.10
Annual meeting	88.60
Other meetings	32.00
Stationery	25.22
Life Member Certificates	5.94
Films	11.50
Entertainment	15.00
Flowers	8.00
Tags	9.50
Secretary's expenses	9.65
Cartage	6.00
Miscellaneous	12.29
	$3,718.18
Balance on hand, Nov. 1st, 1951	403.13
	$4,121.31

R. W. BROWN,
Secretary-Treasurer.

AUDITOR'S REPORT

To the President and Members of the Winnipeg Horticultural Society:

I have compared the above statement with the books and vouchers, relating thereto, and certify that it is a correct record of the receipts and disbursements of the Winnipeg Horticultural Society for the year ending October 31st, 1951, according to the information and explanation given me.

Winnipeg, Nov. 12th, 1951.

G. S. REYCRAFT,
Auditor.

Some Impressions of British Gardens

W. R. LESLIE,
Dominion Experimental Station, Morden, Man.

The North American making his first journey to Great Britain anticipates great joys as visits unfold to public and private gardens. It is difficult to understand how anyone could possibly be disappointed in what he experiences.

The great poet, Rudyard Kipling, was realistic when he wrote his vivid description in

The Glory of the Garden

Our England is a garden that is full of stately views
Of borders, beds and shrubberies and lawns and avenues,
With statues on the terraces and peacocks strutting by;
But the Glory of the Garden lies in more than meets the eye.

For where the old thick laurels grow, along the thin red wall,
You'll find the tools and potting sheds which are the heart of all,
The cold-frames and the hot-houses, the dung-pits and the tanks,
The rollers, carts and drain-pipes, with the barrows and the planks.

Our England is a Garden and such gardens are not made
By singing:—"Oh, how beautiful" and sitting in the shade,
While better men than we go out and start their working lives
At grubbing weeds from gravel paths with broken dinner knives.

There's not a pair of legs so thin, there's not a head so thick,
There's not a hand so weak and white, nor yet a heart so sick,
But it can find some needful job that's crying to be done,
For the Glory of the Garden glorifieth every one.

Then seek your job with thankfulness and work till further orders,
If it's only netting strawberries or killing slugs on borders;
And when your back stops aching and your hands begin to harden,
You will find yourself a partner in the Glory of the Garden. . . .

And the Glory of the Garden it shall never pass away!

The visitor from abroad finds every person a gardener. His host may have invited him for a car ride to see some historic site or famous landscape but, if there are leeks to transplant, flowers to disbud or vines to stake, those chores rightfully must be done before the carefree joyride is launched. As expected, the garden results are excellent indeed.

What is commonly referred to as the "backyard" in

Canada is the "rear garden" in Great Britain. The traveller takes a 20-mile boat ride up the Thames River, sometimes known as "Liquid History", to Hampton Court, the expansive castle home of earlier English kings. Among his greater delights is viewing the rear gardens of thousands of brick homes flanking the gently-flowing river. These riverside gardens are neatly groomed and skilfully tended. They display roses in numerous types with many climbers, flower borders, shrubberies, arbors, summer-houses, pools and some have cottage vegetable gardens. The vegetable plot tends to fit in harmoniously with the ornamentation. Usually there is a strip or carpet of green lawn. The river is of modest width above the area washed by tides and the voyageur glides intimately close to the private estates. Wherever the stranger travels in the British Isles and Ireland he encounters gardens having generous emphasis accorded shrubs and flowers.

Climate: The coolish temperatures of the growing season coupled with moderate winter minimum, substantial precipitation, and humid air which means a low evaporation rate, present auspicious conditions for growing flowers. Although London receives only about 25 or 26 inches of rainfall per year, it has relatively high value due to the large number of cloudy hours and the high humidity of the atmosphere.

Soil: Much of the land appears somewhat hungry and gives an emphatic response to fertilizer. The gardener husbands grass clippings and various kinds of other refuse in compost heaps so a maximum amount of humus and nutriment be on hand for his borders and plantations. It is a common sight to see professional gardeners in Kew and Wisley spreading spent hops and other decaying vegetable matter among the plants. They feed the shrubs freely and work the soil deeply for flowers.

Much of Southern England is underlaid with chalk. The Royal Windsor Castle, up the Thames, rests on a lofty chalk hill which is bathed by the river, which waters the City of London. With such condition prevailing the water is rated as hard due to the lime content. However, the topsoil of much of the country must be acid in reaction because heaths and rhododendrons thrive.

Garden Features: The first unusual impression of British gardens relates to the prevalence of brick and stone walls. The south face of the wall is used thoughtfully for plants needing heat. Fruit trees and grapes are cordoned against the masonry. This affords the plants maximum heat. Glass houses are seen on every hand. Many private gardeners have their own greenhouses. Here plants are started and tomatoes grown as a crop. Even in Southern England gardeners stated

they could not successfuly ripen tomatoes out-of-doors. There is not enough hot bright sunshine to bring up red mellowness in the fruit.

A second impression is the plentitude of flowers in diverse array. Everything from pansies to giant lilies, well over eight feet tall, and stately hollyhocks adorn the grounds. In such national gardens as Royal Botanic Gardens at Kew and Edinburgh, the Royal Horticultural Society's extensive Trial Grounds at Wisley, the Botanic Gardens at Glasgow, Belfast and Liverpool, and the National Botanic Garden in Dublin are found long broad borders of flowers. Perennial borders were of greatest interest. Of special appeal among annuals were the trial grounds and breeding fields of Sutton and Sons at Slough, near Windsor. The older general gardens of that esteemed firm of seedsmen are further up the Thames at Reading.

Carpet bedding is met on most public gardens but this form of art assumes its zenith in and around Paris, France. In France, as in Great Britain, flowers of intense coloring appear to be chosen over those of mild or pastel shades. The reason of the rather startling brilliance of many beds may be to bring cheerfulness to the scene during the many days of dull weather which characterize those countries.

Sunken gardens and lily pools abound. With the mild winters prevailing, tender plants can be cared for with little dormant season nursing.

Mention should be made of Holland when it comes to abundance of flowers. In the territory of Boskoop, renowned for its nurseries, the water table is only about 20 inches from the surface. The soil is peaty, and a shovel is readily pushed down a foot deep without the aid of the gardener's foot. The air is humid and rainfall frequent and heavy. Rich soil is pulled up from the canals to add fatness to the garden land. Flowers are marketed daily by carloads. Every home seemed to have flowers in the house as well as in the garden.

Ireland has a kindly climate as shown by the wide use of fuchsias as fairly tall shrubs on the grounds of both public and private estates. These beautiful plants do less well in England.

One respect in which European gardens have a problem that causes little concern in Manitoba is that of subsoil drainage. Placing tiles to carry off surplus waters involves labor and expense.

Garden Shows assume a prominent place in Great Britain. The Chelsea show is a highlight in May. The Royal Horticultural Society holds fortnightly shows in their two spacious

halls in Vincent Square. In early July the Royal Agricultural Show accommodates two very large tents, or marquees, which are filled with imposing exhibits. This year 56 firms staged exhibits. These were non-competitive but awards were granted those considered of distinctive merit. The first week of July the Royal Windsor Rose Show is held on the lower parkland of Windsor Castle. The various County Agricultural Shows place due importance on horticulture as is evidenced by their providing one or more marquees to house displays and competitions of flowers, vegetables and fruits.

A Canadian exhibitor can benefit very much from a study of the artistic effects wrought by his fellows in the United Kingdom. Notable items beheld this summer included the following:

Sweet Peas were shown as two rows of fan-shape. The metal container, painted green, was supplied with a bunch of reed stems. The stems of the Sweet Peas were readily inserted securely between the reeds. Shrubs and flowers were set in peat, overlaid in some cases with a lively surface of green moss, or fresh grass sod. Peas, young carrots, and beans overlapped row on row, like shingles, on a conic form. The tops were threaded to keep them even. As the season advanced vegetables at summer shows were bedded into parsley. Thus tomatoes, onions, beets, potatoes, cauliflower and root crops all nestled into what gave the effect of a mattress of crinkly parsley.

One other interesting circumstance at garden shows was the considerable amount of selling taking place. Nurserymen were recording sales to numerous customers of everything from climbing roses to tiny cacti. Government agencies were doing a brisk business in bulletins, pamphlets and monographs. These were not distributed free as in Canada but by cash sale. The keen selling was eloquent proof of the determination of the growers to arm themselves with the advantages of recent progress in plant protection, culture, and improvement.

A further observation relates to the fraternity among gardeners. No secrets were apparent. Everyone appeared happy to discuss gardening, supply information, and to give or exchange seeds and plants.

The **National Gardens,** above-mentioned, each reward the visitor wth lasting pleasures. Kew and Wisley are wonderful institutions. All the public gardens gave the real satisfaction of clear labelling on trees and plants. In Kew the distinctive stately Cedars of Lebanon and the Algerian Cedars carried a marker giving their age as well as their name. No

two of the extensive gardens are similar. Each has its own individuality and specialties.

In London, Hyde Park, with its wide open spaces, is famous for its large trees, notable among which are the avenues of Oriental Plane or "London Plane" trees. They are shapely and well adapted by having their bark slough off, thus getting rid of the oily soot covering, and exposing fresh bark each season. Kensington Gardens, adjoining Hyde Park, are spacious and varied with charming walks and drives, flanked with flowers and shrubberies. Regent Park, to the northward, has the zoo, a canal, playing fields, lily ponds and a renowned rose garden of wide extent. Swans, geese, ducks, coots, waterhens and other aquatic birds abound in the lakes and ponds which gem the landscape in the Public Gardens.

Trees and shrubs with colored foliage are employed widely. Most generally encountered are the Copper Beech and Persian Plum, both wearing purple to maroon shading. In Manitoba neither are adaptable. However, the general color effects are available in approximation here in some of the new Rosybloom Crabapples and Cistena Cherry. The latter is sired by the Persian Plum and had the Native Sand Cherry for its mother.

Among the shrubs the visitor wishes he could successfully transplant are Rhododendrons, Cistus or Rockrose, Escallonia, Pyracantha, Chusan Palm, Monkeypuzzle or Chile Pine, Flowering Dogwood and Tree Tea Roses. However, Manitoba is enjoying a growing range of beautful woody ornamentals from which to make choice.

Kew Garden, with its astonishing collection of trees and shrubs collected from all over the world, is not a happy home for all species. This is one more example of the compensations accorded by Nature. Among the plants which appear to thrive better on the Canadian prairies than at Kew are Caragana, Poplar, Birch, Prinsepia, Halimodendron, Hippophae, and possibly Lilacs. A popular song revels about Kew at Lilac-time—and it may be that the bushes studied are old and lacking in the vigor expected and which probably would be found in younger specimens.

Flowers have received much attention of the plant-breeder. Some of the most cherished flowers in the Old Country originally sprung from North America. They come back home in improved forms, somewhat similar to Rhodes Scholars returning after a sojourn of training at Oxford.

It is in flowers that local gardeners may expect most useful acquisitions from Great Britain. Prominent in alluring subjects are Astilbes, in rich pink, red, maroon and navy hues;

Iceland Poppies in new red and cinnibar shades; Dianthus in many forms and differing spiciness of fragrance; Salvias, Lilies, Asters, Ursinia, Rudbeckias, Delphiniums, Senecio, and Geraniums.

Londoners reported that the first vegetation to appear after bomb damage and fire devastation was the Fireweed—the same plant which took over the scene following a forest fire in Northern Manitoba. The next arrival was Valerian—a showy plant with heads of pink to red flowers which were everywhere prominent in June and July. Valerian adorned ditches, walls, hillsides, and even roof tops.

The secret of the splendid success the Britisher, with his family, achieves in the home garden is apparent. He modestly ascribes the credit to the climate. The visitor interprets the triumph only in part due to the climate and in large measure to the gardener. Gardening is a national pastime and game. It is undertaken studiously and seriously, yet withal joyously. Gardeners visit shows and meetings, buy literature, purchase new plants, secure and apply fertilizers and pesticides, and then harvest real happiness by working in their gardens—hence a countrywide picture emerging, as portrayed by Rudyard Kipling.

Your Lawn

G. S. REYCRAFT

Let's talk about your lawn. If it isn't just what you want, would you like a few pointers? First, you don't have to be its slave to have a good lawn but rather its guardian. The secret is, not to try in a burst of energy, mostly noticeable in the spring, to give your lawn the "complete treatment" and then forget it for the rest of the year but rather give it a helping hand over many months. Lawn grasses are like all other plants. They can't just be planted and forgotten. They need regular care throughout the season from early spring to late fall.

Let's start with spring. Don't wait too long to get going for grass is an early starter.

Feed your lawn early—at a time when you can do little else. Lawn grasses need a good supply of nutrients all the time they are in growth. The best time of the year to supply this need is in late winter or very early spring; at least several weeks before growth normally starts.

When you feed your lawn before growth begins, the plant food will have dissolved and washed down to the roots by the time the grass needs it. Besides, early feeding when the grass is still dormant eliminates any danger of "burning" the lawn. You'll find recommended rates of application on the bag. Follow them.

When the lawn is moderate in size, you can spread plant food by hand. It is best to half the amount to be applied, distributing the plant food first in one direction and then crosswise. Spread it evenly and go slow, until you can gauge your application to cover the required space. A mechanical plant food spreader will make your job much easier and spreads plant food evenly and at the required rate.

Rake—as soon as the lawn is fairly dry. Rake off the winter's accumulation but do it lightly. Do not use a saw-toothed rake. Use an open toothed or bamboo rake and merely pull it over the grass.

At this time you may find certain spots of varying sizes on your lawn with a thick webby covering. This is the snow mould fungus which grows at near freezing temperature when there is a supply of moisture, such as from melting snow. The best treatment for snow mould is to brush off the mycelium

growth with a good stiff broom as early as possible. Wait a little while to make sure how much of this area has been killed and then reseed as explained below.

Other winter injury is usually caused by poor snow covering. The lack of snow exposes the grass to cold drying winds with alternate high and low temperatures. This condition usually causes the grass to die or become very weak. If there are spots on your lawn where the snow is habitually blown off plant suitably located shrubs or put up a snow fence which will hold the snow so that the sod is covered.

Rolling—If a roller is available, a light rolling is beneficial, but not absolutely indispensable. This rolling isn't meant to level down the lawn but merely to firm down the grass plants which have been heaved up by frost action. Do not roll if the soil is wet; it will only pack.

When you have completed the above operations, your lawn is ready to take advantage of the first early warmth of spring. With the exception of a few dead spots your lawn will start earlier, getting a better root growth and a more even and healthier top. The uneven patchy growth which you often see in early spring will be someone else's lawn, not yours.

Seeding—Replant those bare patches. Bare patches should be re-sown as soon as the soil can be worked and you are sure the grass is really dead. Loosen the soil to depth of 2 to 3 inches with a trowel or fork, mix in a little plant food, and smooth out and surface evenly. Sow the seed lightly and evenly, barely covering the seed before tamping the soil down with something flat like a board. Keep all newly seeded spots moist until seed has germinated and sent down roots.

It is usually a waste of seed and time to distribute grass seed on a lawn. Buy plant food rather than grass seed to thicken a thin lawn. New grass is shallow rooted and doesn't stand much of a chance with old deep rooted grass.

Kentucky blue-grass is usually the best seed to use for re-seeding although most standard lawn mixtures are satisfactory.

Top-dressing is beneficial. It puts humus into the soil, helps keep the ground from drying fast and cracking in hot weather. It also keeps the grass roots cool. Spread it evenly about ¼-inch deep over the entire lawn. Don't confuse this operation with that of plant food. Top dressing supplies very little plant nutrients. Its benefits are largely physical. It is detrimental insofar that it often introduces many weed seeds.

Mowing Lawns—Cut it high. Your grass grows best, looks best when it is cut at least 1½ inches high. Most of the

food is produced above ground, in the grass blades through the action of sunlight; the more leaf, the more food, the more roots and the stronger the plants.

Ordinarily, it's best to let grass clippings lie on the ground. Raking is wasted effort. Clippings left on the ground form a light mulch on the soil that helps retain moisture and return organic matter to the soil as the clippings slowly rot. Rake or use a grass catcher only if the grass gets overlong.

Watering—Do not sprinkle. Sprinkling keeps roots near the surface of the ground—water well and less often. Use the sprinkler rather than the nozzle and let the lawn really get soaked each time you water. This will make the grass roots go deep.

Weeds—Spray weeds away. 2, 4-D allows you to get rid of your lawn weeds with very little work. Death is slow but certain. There is nothing left to dig. Digging is laborious and leaves bigger holes in the lawn. However, don't use 2,4-D on young grass.

Lawn Plantings—Lawn plantings of trees, shrubs and flowers should be restricted in most cases to borders. The aim should be at all times, to keep the lawn from being cut up. Trees particularly compete heavily with grass for moisture and food.

Starting a New Lawn—Whether you seed or sod, much of the success of a new lawn depends on a proper foundation.

If you are able to plan your new lawn before the house is built you will save much time and money. Get your contractor to preserve the top layer of black soil by pushing it to one side before the foundation is dug. Later you can spread this fertile black earth over the excavation earth after it has been properly levelled.

Drainage—Lawns must be well drained. When correct under drainage is not provided by the natural location, lines of tile should be laid, two or three feet in depth, spaced about 20 feet apart. Surface draining can be taken care of by proper grading. No low area should exist. Rain or watering will wash the grass seed out and ice lying in hollows will smother grass.

Grading and Levelling—It is desirable that the lawn should slope gradually from the house in all directions. The slope should be approximately ¼-inch to the foot. This will allow drainage without excessive run-off. Terraces should be avoided if possible, as terraced lawns dry out very quickly and are costly to establish and maintain.

Seed-Bed—A satisfactory lawn requires at least four to five inches of good black soil over the excavation earth. The

addition of a quantity of well rotted manure, peat or leaf mold to the heavy black soils most prevalent in Manitoba is strongly recommended. A much more friable soil and absorbent seed-bed will be the result.

Now, level your soil, raking the surface to as fine a texture as possible. Take care and a little time. It pays in results. Repeated rollings should be given the area, to be done in different directions. This will fill in local depressions and remove small mounds. A good rain during this period will help your soil settle and prevent an uneven surface later. The longer you can wait, at this stage, and let nature help you, the better and more even your seed-bed will be.

Sodding—Normally, seeding will give you a more uniform lawn. However, sodding, although more expensive, does give you a quick satisfactory lawn. Unfortunately it may introduce undesirable grasses, such as couch or crab grass. Another advantage of sodding is that it can be done fairly satisfactorily at almost any time during the growing season. Don't forget to make an application of plant food on the surface of the soil before laying your sod. You will never again have a better opportunity to place plant food where it is most needed, at the base of the roots. It will help your sod to become established.

Seeding Time—The greatest mistake in lawn making from seed is the hurried preparation of the seed bed in the spring and the sowing of grass seed before the ground has been fully prepared, has had a chance to settle or the many weed seeds, which usually come in new soil, have had a chance to germinate. The result is often a seeding too late to become well established before the hot weather, an uneven seed-bed, a patchy catch, and much competition from weeds. If you wish to seed in the spring prepare the seed-bed the summer before; then by spring the soil will have settled, will be in a better working condition, and if the weed seeds have had a chance to germinate, largely free from this competition. You will also be ready to seed earlier and have your new lawn well established before the hot weather.

The time generally recommended for seeding new lawns in Manitoba is from August 15th to September 15th. Seeding at this time gives the lawn builder a better opportunity to previously work his seed-bed as well as get rid of most of the weed seeds. Temperatures at this season are usually high enough for early germination. Also seeding at this time, under normal conditions, gives the grass roots a chance to become well established during the good growing fall weather.

Seeding—Small areas are usually seeded by hand. Do not seed on a windy day. It is well to divide the seed and sow half

in one direction and the other half at right angles to your first sowing. With larger lawns, mechanical seeders, many of which double for plant food spreaders also, are very useful as they distribute the seed more evenly.

Plenty of seed should be sown. A thick stand in the early days of a new lawn discourages weed growth. A common seeding recommendation is four to five pounds to 1,000 square feet where Kentucky blue grass forms a high percentage of the mixture. It is interesting to note that a good grass seed mixture contains from 2 to 2½ million seeds per pound.

Immediately after seeding, the soil is raked lightly in order to cover the seed. A light dressing of screened top soil may also be used to cover the seed instead of raking. The lawn area is then rolled to firm the soil around the seed and thus encourages rapid, uniform germination. The roller must be kept dry so that it will not pick up the seed.

There are three distinct rolling times (a) immediately after sowing; (b) after germination to press the heaved ground down and firm the roots; (c) after the first cutting.

The new seeding should be kept moist but not flooded until the seedlings are well established. Use a fine spray from the hose—this is one of the few occasions when light watering is good practice.

Seed—Where water is available, the most satisfactory results are obtained by using a mixture of seed, with Kentucky blue grass forming the bulk of the mixture. Kentucky blue grass is hardy and spreads by means of underground rhizomes. It is the basis of all good lawn grass mixtures in our northern area. It is, however, a little slow in getting started, taking from two to three weeks to germinate and then rooting slowly.

Because of this, it is usually more satisfactory to use a grass mixture for seeding a new lawn, which will germinate, in part, in approximately seven days The quick-growing grasses in the mixture provide a quick cover and fill the ground with roots subsequent to giving way to the slower-growing but longer living, more permanent Kentucky blue grass. A good lawn grass mixture usually contains from 60 to 70 percent Kentucky blue grass with the remainder normally consisting of red top and red fescue. Red top grows rapidly, is adaptable to a wide range of soils and climates. It is, however, short-lived, living only two to three years, by which time when planted in combination with Kentucky blue grass, the Kentucky blue grass has taken over. Red fescue is useful in mixtures for dry, sandy locations and for shady areas.

Kentucky blue grass, being the permanent basis of all

northern lawns, can also be used 100 percent in the seeding of new lawns. It is, however, recommended for the lawn builder with the little extra patience, time and care.

Give your lawn the periodic attention it needs. It will pay dividends in satisfaction and pride. There is no appeal so inviting as a well kept, neatly edged, smooth lawn. It is a chief part of the foreground and the base of every landscape planting. It provides the setting for flowers, trees, shrubs and enhances the beauty of the home.

The Committee responsible for publishing this book aim to make it a source of helpful information to home gardeners throughout Manitoba.

Suggestions, gardening hints and material suitable for publication will be gladly received by the Secretary of the Winnipeg Horticultural Society, Mr. R. W. Brown, Valour Road.

Flower Arrangement

MRS. E. F. TROENDLE

The topic of Flower Arrangement is being discussed in practically every magazine in the country and it is most interesting to follow the various suggestions. We are told that flower arranging is not merely a hobby, but one of the oldest arts in the world, the Chinese being the first to appreciate live flowers as a decorative art. It may be a bit difficult for a beginner venturing into the arts, to understand the various phrases and definitions. In a few words, a flower arrangement when analyzed is simply plant material fashioned into a design. This design is an idea or pattern you wish to carry out. A good composition should have proportion, balance, form, harmony and rhythm.

It is not the intention in this article to introduce any new ideas, but simply to offer a few suggestions which may be of assistance when next you plan a floral setting.

The selection of flowers is important. Therefore the first thing to consider when selecting the flowers is how you wish to use them. Some flowers have such an intimate appeal that they seem made to be looked into, others have a stately and dignified appeal—these are to be looked upon. Select your flowers to fit the use and location. Violets, Lily of the Valley, Pansies, Water Lilies and many Roses show to better advantage when looked into or down upon. These are the examples of intimate flowers and do well upon tables and lower locations. Gladioli, Hollyhocks, Lilacs, etc., are seen best slightly above the eye and against a background. This does not constitute a hard and fast rule, but is only a general suggestion.

Color harmony also enters into selection. Colors must not clash with each other or with wall paper or furnishing, and also very important, flowers must suit the container in which they are displayed. Both vase and flowers may be beautiful, but they do not belong together unless they complement one another.

Color is a fascinating subject by itself. Colors vary in visible weight. A dark flower looks heavier than a white one, even though actually both are exactly the same size. That is why we place lighter colors on top and dark flowers at the base of an arrangement. Light affects colors, too. During the day, yellow flowers make a dark room sunny and

cheerful. At night, the artificial light absorbs the brightness. Pink is a much better color to use with artificial light. White roses are the most formal for a living room, and any white flowers add gayety. Do not use strong colors or heavy arrangements in very warm weather. Bowls with water showing, soft colors and the more delicate flowers add coolness. Clever grouping of colors is necessary for harmony. One color alone is likely to be monotonous, therefore a combination of one color, a little of a second, possibly a shading of your first color, and a mere accent of a third works best.

In selecting containers consider your flowers and the places where arrangement will be used. For example, in a hall with cheerful welcoming flowers, you can use brass, copper or bronze, with perhaps a tall jar for the floor for tall spikes. The living-room will need light pottery and glass, the dining-room calls for silver, china and crystal, the bedrooms quaint figures and vases in small scale for delicate flowers. Roses like glass, silver and porcelains. Peonies need large heavy pottery, heavy silver bowls or flaring vases. Avoid using gaudily colored vases. The most pleasing containers are plain ones of simple line, made of pottery in either dull or fine and delicate glaze. Good colors are all shades of green, brown tones, soft shades of grey, white and black are also very effective.

Anyone who has ever arranged flowers knows how important it is to have strong sturdy flower holders. These may be in the form of glass blocks, pinpoint metal holders and wire mesh. Strips of sheet metal have innumerable uses, too. Scotch tape criss-crossed over your container is very practical. But take every precaution to hide your holder with well placed leaves or flowers. Even when your plant material is not heavy, it is wise to fasten holder to container with modelling clay. Be sure all are thoroughly dry. Twigs and greens may be used as fillers in heavy pottery, but are not as practical as wire.

The following are a few suggestions which you may find helpful:

To ensure crispness, keep flowers deep in water while arranging them.

Flowers must never face each other Siamese twin fashion.

Never put a gladioli or any sword-shaped leaf with the sharp edge toward the front.

Take care not to criss-cross stems in your arrangement, or if you must, conceal the fact with a spray of leaves or flowers.

It is best to keep round flowers low for mass or color and use spike flowers for points at the sides and for height. Your

tallest stem should be one and one-half times the height of container, or if a low arrangement, one and one-half times the width of container. This is a good proportion.

Remember to place the bud at the top, with half open flowers lower, and fully opened blooms at the base of your arrangement.

Do not use too many varieties of flowers. There is dignity and restraint in an arrangement of one variety in its own foliage. When you do use several varieties and colors, do not scatter them through the composition, but try to hold color together, and as mentioned earlier, allow no two colors to be equal in amount, but have one color dominate and the others act as complement to it.

Dinner table centrepiece arrangements should be kept low so guests can see across the table. However, avoid a flat appearance by placing one point or several tips in your design. Do not have drooping flowers touch the table cloth.

No matter how lovely the colors, never use flowers of unpleasant odors for table arrangements.

Be careful not to leave a void if your arrangement is to be placed low, as on a coffee table.

For taller groupings, treat the flowers and vase as one. This may be done by allowing some of the leaves to hang over the edge of the container.

A mirror behind an arrangement makes your flowers look as though you had twice as many and brings out the beauty of your design. Similarly, lamps can be placed at angles to create interesting shadows on the wall.

Each leaf or flower you add to your composition should form an imaginary triangle. This will result in balance.

As you will have noticed, most of the foregoing remarks have been dealing with mass arrangements. Line arrangements are much more interesting than mass effects, but for a beginner they may be a bit more difficult. A simple method is to allow one gracefully curving stem or the tallest flower to become the centre of the composition, being careful to keep the tip directly over the base. It may curve away from the base, but should return at the tip. Upon either side of this (using few flowers) are formed the stems, rising in strong lines from a central source. These stems should not be the same length, and should form definite curves. This is easily achieved by putting your flowers in holder on a slant. Create a definite centre of interest by well placed flowers at the base. It is not necessary to have many flowers. Remove all unnecessary stems and leaves. It improves your arrangement.

Gloxinias

MRS. F. MOYER,
Omemee, Ontario

Gloxinias, in my estimation, are the most attractive and most nearly perfect of all house plants. For color, size and number of their blooms, they have few, if any, rivals. The general appearance stands second to none. They have gorgeous trumpet of flowers and lush green leaves of velvety texture, some beautifully veined and others very large.

The flowers come in gorgeous shades of scarlet to crimson self, violet and white to violet and purple self, white, pink and white—others daintily spotted like a foxglove. These are easily grown by any house plant fancier, but growing them requires a certain amount of skill and patience.

Gloxinias may be grown from young potted plants, from mature tubers or bulbs, from seed or from leaf cuttings. The latter method is often resorted to when a person has a choice variety and would like to have several of the same. I have used this method a number of times. Last year I started seven leaves and have seven fine blooming plants at present. To make a leaf cutting, I use a sharp knife or razor blade to remove the leaf from the plant, leaving one-half or two-thirds of stem attached to leaf.

I remove this leaf when the plant is in bloom for the plant is very vigorous at that time. Also it is best to do this in June or July when there is more heat and warmer nights.

I insert the stem of the leaf cutting in water or a good rooting medium such as damp sand or vermiculite. I have had good success rooting in water which most amateurs use. The stem first sends out a thin rootlet. Before long one begins to note a thickening on the end of the stem. This is the beginning of the bulb or tuber. From here, more rootlets are sent out till quite a mass has formed and the end of the stem is about half an inch across. The old leaf, bulblet and roots may then be potted up, taking care not to break the leaf off. A potting mixture of good fibrous loam, peat moss and sharp sand is used. The leaf may decay or shrivel, but do not throw the tuber away. Continue to water and if the tuber is firm, it will finally send up a sprout. I have waited up to four months for several little tubers to sprout. When the tuber is ready to discard the leaf, it will gradually die. A leaf started this June or July will be a full grown plant next year bearing a number of fine blooms.

When Gloxinias are raised from seed, it is important that the seed be fresh. The seed is small and shows a marked decrease in germinaton after one year. The first seed advertised is usually in September or October. It may be kept for seeding in February or March. There are some experts who are experimenting in raising larger bloom, decidedly more ruffled and in a greater color range. These would be worth trying. It is always interesting to raise new varieties of any plant. The best is not too good in raising Gloxinias. The seed is very small, so it need not be covered with soil. The soil medium recommended is equal parts peat moss or sifted sphagnum moss sand and leaf mold. The peat should be screened through a fine sieve and the soil sterilized and cooked. The mixture is placed in a seed pan or flat, the surface levelled, and then covered with an eighth-inch layer of sifted sphagnum. The seed is sown into this layer and watered but not pressed down. A pane of glass and a piece of newspaper is used to cover the seed bed. Seedlings are transplanted to a flat as soon as they are large enough to handle and from the flat to a 2½" or 3" pot and finally to a 5" pot. In transplanting, tubers should be barely covered with soil. They should be kept growing until after the first blooming. Following that, they may be stored for a rest as is the usual custom.

The Gloxinia is a cousin of the African Violet. Both are members of the Gesneriaceae family. Both have hairy leaves and may be propagated in the same manner. The African Violet is a native of Africa, while the Gloxinia comes from the swamplands of Brazil. Both require a temperature of not lower than 60° at night, 62° is even better during the rest period. They may be watered from the top or bottom, but they do not like water on the leaves or a soil that will become soggy. Good drainage is therefore a necessity. The mature plants should be kept growing actively until after the blooming period, about the end of August. At that time, water is gradually withheld until the tops wither. They are then ready for the rest period. The tubers are stored in the pots for at least three months. The top shelf of a pantry with occasional watering, three or four times during the winter to keep the tubers from drying too much, has proven satisfactory for storage. However, they will keep without the water.

After the tubers start to grow in the spring, a liquid fertilizer once every two weeks is beneficial. One tablespoon in one gallon of water is suggested, or liquid manure may be used.

Gloxinias have been known to live fifty years. I have had one for seventeen years. Given good soil, sufficient water and a rest every year, Gloxinias will well repay one for the outlay and the care they need.

Garden Features

F. J. WEIR

Garden features or ornaments are added usually to provide interest or contrast in the landscape picture. Where correctly used, whether architectural or natural, garden features give spice and sprightliness to the home surroundings. Often they can be used to emphasize some particularly attractive portion of the home or garden.

In selecting a suitable garden feature for a special spot, whether it be a sundial, a lily-pond, or merely an attractive shrub, there are a few questions which must be asked, and answered truthfully:

(1) What purpose is fulfilled by a garden feature in such a spot?

(2) Is this form of ornament the most effective?

(3) Is this the most suitable location for such an ornament? It is most important that these questions be considered very carefully, before proceeding with the actual project.

In the development of any garden feature, a plan is, of course, a fundamental. It costs little, in terms of either money or time, to make mistakes on paper. This is, perhaps, more important in considering architectural features such as rockeries and other more permanent structures, than the natural features such as perennial borders which can be moved as occasion arises. It is advisable then, that a plan to scale be sketched out before any actual work is started. In this way, it will be found out if the individual project can be fitted suitably into the master plan for the whole home grounds.

The home owner should exercise great caution in the number of features or garden ornaments he uses. In small city or town lots, the number should be limited. It is better to have too few, than too many. A great many home grounds are spoiled by the use of too many points of interest. In such cases, an effect of confusion, rather than interest and attraction results, and the grounds take on a cluttered or overdressed appearance. In a small city lot the only features might well be the foundation shrub plantings, a specimen or shrub on the front lawn, and a shrub border with garden seat, and perhaps shade tree, at the back of the house. Where grounds are extensive there is greater scope for development.

The main problem in larger lots seems to be to ensure that the various features are so co-ordinated that a harmonious and pleasing picture will result.

However, no matter how many individual features are selected, the gardener must cater to the interests and hobbies of the household members and friends. If the members of the family are interested primarily in gardening, the features should consist of shrub and tree plantings, perennial borders, and rock gardens. Perhaps some member is interested in wild flowers, or in some special phase of gardening. Where the family is only mildly interested in gardening, more of the architectural forms of features could be used, such as sundials, birdbaths, stone walls and summer-houses.

As previously mentioned, before any actual work is done a plan should be made. In making up this plan, and selecting the sites for the various features to be used, emphasis must be placed again on the reasons for using each feature. The net result, be it pleasing or otherwise, will depend to a great extent, on the suitability of location, and the degree of co-ordination achieved in tying the various individual projects into an attractive home grounds.

BIRD BATHS

Bird baths are both interesting and useful. When correctly placed bird baths can be used as a focal point of interest, and as an attraction for the birds. They should be so located that the bird visitors can be watched, and where they will not be in danger of enemy attacks from branches of nearby shrubs and trees. A good supply of fresh water is important. It is also essential that the basin be placed on a fairly high pedestal as further protection from enemies.

BORDERS

Borders are attractive, whether of an annual or perennial nature. The duration of color and bloom is of primary importance. This is assured when carefully selected shrubs are used, with perennials and annuals as fillers-in during the growing season. Shrubs should be chosen which have some distinguishing characteristic, such as attractive bark, graceful branches, or beautiful flowers. Many shrubs can be grown which retain fruit or seed-pods through most of the winter. If attention is given to the choice of shrubs, the shrub border can be attractive throughout the year. Where a home-owner has a hobby of growing particular kinds of flowers, and where these are grown in quantity, it may be advisable to set aside a separate portion of the garden for their culture, so that attention can be given their individual needs.

ENCLOSURES

Sometimes it becomes necessary to have the home grounds

or gardens enclosed either to keep children in or to keep dogs and other animals out. Fences and walls, of course, are commonly used for this purpose. However, a living fence or hedge can be just as effective as well as being attractive. A fence, wall, or hedge, where required, can also be used to advantage, as a background for shrub or other flower borders.

GARDEN FURNITURE

Any garden furniture used, of course, should be of such construction and material that it will harmonize with the home buildings and the garden itself. Furniture made of wood treated with preservative or painted with exterior paint, is generally recommended. Colors should be neutral or pleasingly contrasting. Metal furniture looks and feels cold. The structure of present-day homes calls for furniture which is simple in construction with graceful lines.

GAZING GLOBES

Gazing globes are attractive when placed at the end of a walk or as the central feature of a sitting-out area. When used in the latter manner, they should be located at a side or in a corner of the garden. If used in combination with shrub plantings the sitting-out area should fit easily into the landscape picture.

LAWNS

For many home-owners, the lawns will always be the main feature of the home grounds. Careful preparation of the soil, selection of seed or turf, and constant attention to watering, feeding and clipping, are essential in the development of an attractive lawn. Plantings of flowers and shrubs should be restricted to the outer edges, where possible. This will make the lawn more spacious in appearance, and cut down maintenance costs.

LILY PONDS

Lily ponds or pools, where practical, can be attractive and interesting. In areas where the most popular varieties are not sufficiently hardy, it is necessary to winter the bulbs in the cellar. Full use should be made of whatever native plant material is available. In formal gardens, the pools are usually located on the garden axis, but appear at their best when they are of informal structure, treated informally placed at one side or in a corner of the garden.

OUTSIDE LIVING-ROOMS

An outdoor living-room is one garden feature which puts more "home" into home grounds than any other. The type of outdoor living-room and the many individual features which make it up are, of course, determined by the needs and interests of the family and the tastes of the planner. Because of this, it should be located conveniently to the house, but at the

rear, so that maximum privacy will be obtained. Partial screening of the area may be provided by using shrubs, hedges, or trellis-work. Into the outdoor living-room, dependent of course, on its size, and the size of the lot, can be fitted easy chairs, areas for sun-bathing, barbecue or fireplace, and children's wading pool. The planner should attempt to use as much taste as possible in the selection of garden furniture, so that a restful atmosphere will result.

ROCKERIES

With rock gardens, location is most important. Construction of an attractive rock garden is made difficult on the prairies, because the surface of the lot in most cases, is quite level. Extreme care is therefore necessary, in order to make the rockery "look at home." Whatever the location, selection of rocks is important, and skilful arrangement is necessary in order to have a pleasing and well-balanced ratio between rocks, plants and soil.

SEATS

There should be a definite purpose in locating lawn seats about the garden. They may be placed in a secluded portion of the garden for rest purposes, or in other spots to take advantage of an interesting vista or attractive picture. Care should be taken that they are not scattered indiscriminately about the lawn.

SUNDIALS

A sundial, of course, should be so placed that shade from overhanging trees or shrubs, will not interfere with its use. It should be of low enough structure that it can be read easily. Sundials are most frequently used as a centre of interest in the corner of the garden, but quite often also, as the centre of a formal arrangement of regular flower beds.

SHRUB AND TREE PLANTINGS

Shrubs and trees appear at their best when planted as borders, or in clumps or groups, but are often outstanding when displayed as single specimens. The appearance of "leggy" shrubs can be much improved by "facing" them with with lower-growing types. Some shrubs seem out of place when grown singly, because of their growth habits. On the other hand, a tree such as a Weeping Birch should be grown by itself and allowed to develop naturally into its normal form. Caution is necessary in placing shrubs or trees which are strikingly different from others as these may attract attention, where attention is not desired.

WALKS

The main consideration in the location of walks, is that they must lead to something definite. Unless they lead to an attractive picture, or a sitting-out area, or other interesting

sight, the lot is better without them. Walks, like other features, are of various types, but a type should be chosen which will fit in with the existing architectural features of the home, and harmonize with the garden itself. One of the finest types of garden walk is made by setting flag-stones down the grass, low enough that there is no interference with grass-trimming. Such a walk is inconspicuous, and yet it serves all the purposes required.

WINDOW BOXES

A good selection of healthy plants having attractive foliage and colorful bloom, growing in a suitable box, can do much to brighten up a drab window, or house front. A window box is of particular value on a small lot where space is limited. In selecting plants, a little variety in type and color of foliage along with plenty of bright bloom, will be an asset. The colors of the box, the plants, and the house should harmonize. A few plants of trailing habit of growth will provide unity in the whole picture.

After considering some of the many different types and forms of garden ornaments, the need for a preliminary plan before any actual work is undertaken, is even more apparent. If a plan is made at the outset, and followed through the years, there will be less chance of the individual garden features remaining as separate bodies. The ultimate result should be a unified, harmonious picture, and a home grounds suited to the interests of the family.

Some Plant Disease Control Methods

B. PETURSON

Practically all our garden plants are subject to the attack of plant diseases of various kinds. Our success in gardening oftentimes depends to some considerable extent on our ability to cope with the various plant diseases that threaten the well being of the plants we grow.

PRINCIPAL CAUSES OF PLANT DISEASES

A large percentage of plant diseases are caused by **fungi,** some are due to the action of **bacteria** and still others are caused by imperfectly known minute infective agents called **viruses.** Again, certain diseases, non-parasitic in nature, are due to **improper environmental conditions** and are usually referred to as physiological diseases.

DISEASE CONTROL MEASURES

The control of plant diseases is based on prevention rather than cure. Ordinarily diseased plants cannot be cured. The most that one can do with a diseased plant is to prevent the spread of the disease from affected to unaffected parts and to surrounding healthy plants. Disease control is based on the application of one or more of the following principles, sanitation, exclusion, eradication, protection, crop rotation and use of resistant varieties.

SANITATION

The organisms that cause fungal and bacterial diseases are present in affected plant debris. Since these organisms can live over winter in diseased plant parts it is of utmost importance to destroy all plant refuse, by fire, as soon as the plants are harvested. Ths is particularly important in small gardens where crop rotation is difficult.

EXCLUSION

It is usually easier to keep diseases out of a garden than to control them after they become established. It is, therefore, most important to make certain that all plants are brought into the garden are disease-free and that seed used is treated with a good seed protectant.

ERADICATION

By eradication is meant the removal and destruction of diseased plants. When a disease first appears it may be con-

fined to a few plants. In such cases the immediate removal and destruction of the affected plants may well be the most practical means of control. One of our greatest faults as gardeners is our reluctance to destroy ailing plants. Control of many diseases depends on ruthless eradication of affected plants.

CROP ROTATION

Growing the same crop on the same plot of land year after year tends to increase the disease organisms, in the garden, to which the crop is susceptible. Crop rotation prevents the build-up of disease organisms affecting a particular crop and should be practiced if at all possible. Where crop rotation cannot be practiced, small garden areas can be disinfected by application of soil disinfectants.

PROTECTION

The use of fungicides as sprays or seed protectants can prevent the development of certain, but not all, diseases. However, to be most effective the sprays must be applied before the disease has become firmly established. Sprays and dusts are most effective when applied just before or after rains or heavy dews for it is during the periods that the foliage is moist that spores of pathogens germinate and cause infection. Although many new fungicides have been developed in the last several years, few, if any, equal Bordeaux mixture as a general fungicide. Fixed copper fungicides, sold under many trade names, are also effective against many diseases. Sulphur, preferably fine dusting sulphur or wettable sulphur, should be in every gardener's plant disease arsenal. This ancient remedy controls many plant diseases. All seed, even disease-free seed, should be treated with a good seed protectant before it is placed in the soil. There are many good safe seed protectants stocked by local dealers in garden supplies. A good seed disinfectant will destroy disease spores carried on the seed and it will as well disinfect a small area around the seed in the soil and protect it from fungal spores that are present in the soil. For protection against certain soil inhabiting parasites, such as the one causing aster wilt, soil disinfection is necessary. Formalin is effective for this purpose. One pint of commercial formalin mixed with 50 pints of water and applied to the soil at rates of 2 to 4 quarts per square foot will destroy most soil fungi.

SOME COMMON DISEASES OF ORNAMENTAL PLANTS

Adequate treatment of the many diseases of ornamental plants, that occur even in a small area, is far beyond the scope of a short article. However, in the succeeding paragraphs, suggestions will be given for the control of a few of the more

common diseases that occur on ornamental plants in the Winnipeg area.

Grey Mold Blight of Peony (Botrytis paeony)

This disease is often referred to as bud blight. It is caused by a fungus and is the most common disease of peonies in our area. Some of the affected buds turn black and fail to open, others open partially or fully and then turn brown. In some instances only a few buds per plant are affected; in others, every bud may be blighted. Later in the season brown spots develop on the leaves and stems. Sclerotial bodies (small, hard, seed-like bodies) are formed in the affected parts, especially in the stems at the base of the stalks. The organism overwinters by means of these sclerotia.

Control

In the fall, cut stalks off just above the crowns. The stalks, leaves and other plant parts should be gathered up and burned. If plants are badly affected, two inches of top soil around plants should be removed and replaced with new soil. Spray soil around the base of the plants with Semesan or some other Mercury compound. In the spring, spray the plants with Bordeaux Mixture when the plants are about a foot high. Repeat this treatment again about two weeks later. Remove any young shoots that wilt.

Aster Wilt (Fusarium species)

Wilt is caused by a soil fungus that attacks the roots and the lower parts of the stems of asters. It causes wilting and death of affected plants. The aster wilt organism can live in the soil indefinitely.

Control

Use wilt-resistant varieties. These are now generally available. Although none of the wilt-resistant strains are completely resistant a high percentage of them will come through even in wilt-resistant soil. Soil disinfection is effective but expensive and bothersome.

Yellows (Virus)

Yellows which was prevalent in the Winnipeg area this past summer, is often the cause of aster failures. The affected plants are stunted, spindly, and pale yellow in color. They produce deformed flowers or none at all. This disease attacks many kinds of garden flowers and several common weeds such as sow-thistle and wild asters. The disease lives overwinter in these weeds. It is spread from plant to plant by the aster leaf hopper.

Control

This disease is very difficult to control, for it involves the control of the leaf hoppers that spread the disease as well

as the weeds on which it overwinters. All susceptible weeds near the aster beds should be pulled and destroyed as soon as noticed. Affected asters should also be pulled and destroyed. The plants should be sprayed with nicotine sulphate or pyrethrum sprays to control leaf hoppers. Spraying with Bordeaux Mixture also helps as it acts as a repellent to leaf hoppers.

Chlorosis (Physiological)

It certain spots throughout the Winnipeg area some plants fail to produce healthy green foliage. The leaves of the affected plants are yellowish or even whitish in color. These abnormal leaves are very susceptible to sunscorch. Crabapples, plums, mountain ash, raspberries, delphiniums, beans and many other plants are very subject to chlorosis. This condition is due to lack of available iron or manganese for the use of the plants. In our area, both these elements are present in the soil in sufficient quantity but owing to the high lime content of our soil an alkaline condition prevails which renders iron and mangenese so sparingly soluble that plants fail to get the required quantities of these elements needed for normal growth. This condition can be corrected by spraying the plants in early spring with a one percent solution of iron sulphate acidified with citric acid to keep the iron in soluble form. Iron and manganese can be made available to the plants by adding either sulphur or acid peat, treated with iron sulphate, to the soil. Detailed instructions for the treatment of this disease, often referred to as lime-induced chlorosis, is given in an article by Dr. J. E. Machacek, in the 1946 issue of "The Winnipeg Flower Garden".

Production of this book entails a great deal of work, and it is supplied at less than cost to Horticultural Societies.

Suitable material for the 1953 issue will be received at any time.

Equal parts of dusting sulphur and derris powder are useful as an all-round insecticide and fungicide. Apply the dust regularly. It is easier to keep plants free from insects or disease, than to clean them up after they have been attacked or infected.

African Violets (Saintpaulias)

D. L. McARTHUR

In Canada and the United States no other house plant enjoys the popularity of the African Violet. The reason lies in the way the plants bloom month after month. I have had plants bloom steadily for over two years. Even if you only have a few plants, some of them should always be in bloom if you will pull off the stems after the blossoms fall and do not let the seed pods form.

African Violets are not true violets but belong to the Gesneria family which is a group of mostly herbaceous plants, such as Gloxinia. Members of this family are widely distributed in tropical America, parts of Asia and Africa, and islands of the Pacific. Baron Walter Von Saint Paul discovered African Violets in Tanganyika, South Africa, and sent seeds to Europe. Plants were shown at the Ghent Exhibition in 1893. So African Violets have been grown in Europe for about sixty years.

The first African Violet show held in North America was held at Atlanta, Ga., in the fall of 1946. About 200 persons exhibited nearly 500 plants. It was expected about 1,500 would visit the show during the two days but it is estimated 8,000 attended. Since that time, numerous African Violet shows have been held in many parts of the United States and Canada. Ontario people seem to have more interest in this plant than persons in other provinces.

African Violets are easy to grow if a few simple rules are observed. Plants should be watered every two or three days from the bottom with lukewarm water: that is, water should be put in saucers under the pot, but water should not be allowed to stand in the saucers continually. What the plant will not soak up in a few hours, should be taken away. Care should be taken to see that water does not drop on the leaves as it may cause yellow spots. While African Violets can stand plenty of heat and light, they cannot take strong, direct sun in the summer, as it will blister the leaves and flowers and cause them to turn yellow. This is especially true with the white and pink varieties. In winter, don't expect plants on a cold or cool window sill to grow or bloom.

Roots of African Violets spread all through the earth in every direction. Two parts of sandy loam containing a small amount of well rotted manure, with one part of vermiculite makes a suitable mixture. I add a teaspoonful of bone meal

and a little charcoal to each small pot. Do not over-pot—use small pots for small plants. Plant food will improve your plants. Use any 5-10-5 food in powder or liquid form by adding it to water according to directions obtained with the plant food. I find a powder called "Hyponex" satisfactory.

A few varieties that grow out flat with foliage resting on the flower pot, such as Sailor Boy or Commodore, may have stems injured by moisture in the clay pot, causing the leaves to die. A strip of tinfoil, an inch or so wide, around the top of the pot, bent inside and outside, will prevent this. The tinfoil is not noticeable when the plant grows out a little and many leaves will be saved.

Many new varieties are grown from seed. Seeds can be purchased with no guarantee as to what varieties they will produce. You can grow seeds on your plants, but you may have to pollinate by hand. One seed pod may produce plants of many different types. Most plants are grown from leaves which are rooted in water, vermiculite or sand, then planted in soil. Plant hormone powder will hasten the formation of roots. There are different brands of this powder on the market including Auxan, made in Montreal.

I have been requested to name some of the older and new varieties and think that the best way is to divide the colors or shades of the blossoms as is usually done at violet shows, and name three in each section that I happen to have in my collection.

PURPLE	BLUE (Med. to Dark)	PINK
Blue Boy	Sailor Boy	Pink Beauty (P.1942)
Blue Girl (P.1942)	Blue Bird	Pink Girl (P.1947)
Viking	Dark Blue Fringette	Blushing Maiden
REDDISH PURPLE	**LIGHT ORCHID**	**WHITE**
Commodore	Amethyst	White Lady (P.1943)
Mentor Boy	Orchid Bicolor	White Fringette
Lady Geneva (P)	Light Mauve Fringette	Blue Eyed Beauty
LIGHT BLUE	**RED and REDDISH ORCHID**	**DOUBLES (Any Color)**
Ruffles	Red Head	Double Duchess
Periwinkle	Red King	Double Orchid Creation (Light Lavender)
Sailor Girl	Fantasy	

"P" shown after the name signifies same is patented and the figures represent the year it was patented.

Under "Purple": "Blue Boy" is the most common of all. Usually if only one plant is in a home, it is "Blue Boy". This is a hybrid introduced in the 1920's. "Blue Girl" has a similar blossom to "Blue Boy" but has serrated (or girl) leaves.

"Viking" has pretty, dark green, shiny leaves with a reddish tint on the under side.

Under "Reddish Purple": "Commodore" and "Mentor Boy" are different shades of reddish purple. Leaves on my "Commodore" plant are large, dark green and rest on the pot, and the large blossoms are well above the foliage. "Mentor Boy" leaves grow up and my blossoms are not quite as large as "Commodore". "Lady Geneva", a very pretty variety, has one of the most unusual blossoms—purple with slight reddish cast and a pure white edge. This plant does not grow as large as most. It has been on sale only in the last two years.

Under "Light Blue": "Ruffles" gets its name from the irregular edge of its leaves. "Periwinkle" has light blue blossoms with a white centre. "Sailor Girl" is the lightest of the light blues. Its girl leaves are exceptionally pretty and, in certain light, throws a bronze cast.

Under "Blue": "Sailor Boy" has large dark green, spooned foliage which either rests on the pot or hangs over the sides. The blossoms are held erect and are large dark blue (no purple tinge) making it a different and attractive variety. "Blue Bird" has smaller blue cupped flowers. When the blossom is held flat, it suggests a bird in flight. "Dark Blue Fringette's" blossoms are fringed around the edge and the leaves are fluted. This is one of the Fringette series of six shades (no pink yet) which have been on sale only for a year or so. They are very popular. Fringette blossoms do not drop off the stem as soon as other singles, due to having been crossed with doubles.

Under "Light Orchids": "Amethyst" has light orchid blossoms and is very pretty. "Orchid Bicolor" blossoms have the three lower petals, a pale orchid and the top two a few shades darker. "Light Mauve Fringette' is shaped like the "Dark Blue Fringette" already mentioned. The color is a very delicate mauve and is the favorite of the Fringette series.

Under "Red and Reddish Orchid": First, I will say there are no crimson red violets. They are mostly a wine color. "Red Head", with lilac red blossoms, was the first red and its name is very deceptive. "Red King" has large claret red flower. "Fantasy" is an odd new variety-orchid with dark purple spots and splashes with no two blossoms exactly the same.

Under "Pink": "Pink Beauty" has large amaranth pink blossoms. "Pink Girl" is similar except the pretty girl leaves and blossoms are a little smaller. "Blushing Maiden" has waxy-like creamy white blossoms with a pink tinge in the centre.

Under "White": "White Lady" was the first white and has large sparkling white blossoms. "White Fringette" has

smaller fringed blossoms. "Blue Eyed Beauty", new two years ago, is a nice white with a blue centre.

Under "Doubles": "Double Duchess" was the first double. The blossoms are purple rosettes with silver backs. This plant is also known as "Double Blue Boy", "Double Russian", etc. "Doubles" now come in all shades including pure white with a variety of foliage including some with girl leaves. Blossoms do not fall off "Doubles" and have to be picked off.

There are no yellow African Violets. Several times I have been told someone had one. I no longer get excited, as I get in touch with the supposed owner. Some day somebody may produce one.

About a year ago a new series of miniature violets came on the market, about tea-cup size, mostly with fancy girl-type foliage, some with a bronze cast. They are called "Violette Pixie", "Violette Bronze Baby" and "Violette Bronze Elf". The same company also offers violets of regular size with fancy foliage, named "Bronze Queen", "Oriental Girl", "Sea-foam Sea Queen" and "Rosette Red". The foliage of those named in this paragraph is new and different and all plants are exceptionally pretty.

Recent new "White's" are: "Orchid Bi-Boy"—having a fine white blossom with an orchid border; and "White Beauty" —which has a blue border. "Star of Bethlehem" is dark blue with a white star centre. "Gorgeous Blue Wonder" has a white background with blue overlay—a new color in African Violets. "Geneva Rainbow" is burgundy red with a sparkling white border, similar to "Lady Geneva". "Lacy Girl" has large dark blue fringed blossoms and fancy wavy girl-type foliage. "Purple Dawn" has bluish-purple blossoms impregnated with deep purple veining in the flower. "Star Sapphire" is a Ceylon Blue, five-pointed star shape, with all petals the same size and shape. "Queen Betty" is a two-tone pastel blend—upper two petals are reddish-orchid and the lower three, white.

Among the new doubles in the "Rainbow" series are: "Purity", pure white; "Rose", rose and white variegated; "Dark Beauty", dark blue and white variegated; and "Azure Beauty", light blue and white variegated.

In naming the new or recent varieties, I have tried to keep to what I think are unusual and outstanding. The foregoing is by no means a complete list. In the past, certain varieties have been sold by dealers under different names but there is not so much of this now, thanks to the African Violet Society, who print an excellent magazine every three months. A common question is, "How many varieties are there?" It is

impossible to give the exact answer with new varieties being produced and many older varieties having more than one name, but I think between two and three hundred would be a conservative estimate.

If hybridizers ever add scent to African Violets, I am afraid a lot of us will have to start our collection all over again. Should the scent be very strong, fanciers might be unable to keep so many plants in the house. However, hybridizers are still working on singles in solid colors, pastels, stripes, dotted effects, etc., and the new very fancy doubles.

My Garden and I

LEONARD R. CONDON

For more than a score of years, my garden and I have been good friends . . . friends that never bore, never impose and never conflict any penalties upon one another. We understand each other . . . and as a result . . . both of us flourish. But my garden is different from the average . . . vastly different.

For instance, in the average garden when one plants petunias, petunias come up and bloom . . . and if one plants radishes, radishes grow! But I repeat, my garden is different . . . I plant petunias, asters, zinnias and harvest in bountiful return . . . contentment, satisfaction, relaxation and appreciativeness.

In short, my garden gives me solace and quietude from a world of turmoil and strife . . . it is the one spot in my life, where, after the world extracts eight, ten and even twelve hours of physical and mental energy, I can gather to me a feeling of contentment, and rest, that try as I may, I cannot duplicate in any other manner, believe me.

To start with, my garden is no different from that patch of ground outside your own doorstep . . . it starts out exactly the same as that . . . with dirt . . . the stuff for which children are scolded when they become too familiar with it . . . and yet, did you ever see a healthy normal youngster that didn't like to dig in the soil?

There's something warm and intimate in working with good growing-earth . . . and why not . . . does not life itself stem from the very earth? So, when I plant my garden I feel privileged indeed to stimulate to life the tiny live spark deep within each seed . . . I love seeds . . . small diminutive specks endowed by God with the power to bring forth living testimony of Nature's greatness . . . it makes me stop and think . . . when I plant a seed! And when I realize that that privilege is mine, something inside me swells with a feeling that wipes away all man-made cares and tribulations.

Yes, gardening brings a man to his knees, right down to earth . . . and for most of us that's good . . . for too often do we walk among our fellow men with our noses held just a bit too high! But on your knees in contact with the moist soil, gently warmed by spring's early sunshine, ah! that's the time you

have a moment to yourself in which to relax and think about the worth-while things in life.

Oh, yes, the world passes by my garden and admires its beauty and colors . . . its fragility of blooms and its generosity of crisp, health-giving vegetables . . . some of my friends and neighbors comment on the practical side of my gardening . . . even smack their lips in anticipation of preserved fruits and tasty vegetables, way out of season . . . and others perhaps envy my "savings". Yes, those things, the passing world sees and admires.

Perhaps that's why I smile to them and to myself when their words of praise ring in my ears, for little does the world know that the outward signs of my gardening are but the aftermath of the true harvest of gardening . . . the feeling inside, that you're glad that you're alive . . . that there's a God in Heaven . . . and that once again throughout the world shall re-echo the cry that "All's Well".

Currants and Gooseberries

R. W. BIRCH

Importance and Value

Although not highly important commercially, except in the fruit processing industry, currants and gooseberries are a normal part of the home garden. They require comparatively little care, are hardy and easy to grow, and provide a ready source of nourishment and flavor, which is easily stored in various forms. These fruits, especially black currants, are high in Vitamin C. Moreover, black currants have the highest caloric value of all small fruits. Varieties of red currants and gooseberries may be quick-frozen, and all may be stored as jams, jellies and preserves.

Ease of Culture

Elaborate cultural methods are not required for these bush fruits. Indeed, a commercial grower in Minnesota has grown them profitably for several years without pruning. However, some care is advisable and even necessary.

Planting

Well developed, one-year-old canes from the nursery are best for planting. Almost any location except the south side of a natural or artificial shelter is suitable as long as the soil is not poorly drained. They will tolerate some shade, if there is sufficient ventilation to prevent mildew. Humus, of course, should be added to heavier and lighter soils. The general procedure for planting most trees and shrubs is followed, the canes being headed back to about a foot after planting.

Generally, planting is done most successfully in early spring. Bushes which are still dormant should be planted as early in spring as possible, at the depth or a little deeper than they stood in the nursery row. If a good supply of moisture is available, planting in early September has advantages. Good root formation takes place at this time and the bushes get an early start the following spring.

Spacing is about five to six feet in the row, with preferably eight to ten feet wide between rows for red currants and gooseberries; a foot wider spacing in the row is required for black currants. A little closer spacing is permissible under irrigation.

Care and Maintenance

Shallow cultivation, little more than is required to control weeds, is all that is necessary. Deep cultivation destroys

feeder roots, reducing the potential crop. A light annual dressing of well rotted manure, compost, or leaf mould maintains a healthy soil condition. Addition of a little ammonium-phosphate or complete fertilizer in the spring, about three or four teaspoonfuls spread around the base of the bush, gives the bushes a good start in the spring. Often nutrients are not readily available at this time.

Pruning

Pruning is something which confuses and even frightens many home gardeners. It need not do so. There are three reasons for pruning fruiting trees and shrubs: (1) for the health of the plant; (2) to obtain a maximum crop, and (3) for the appearance of the plant. These cannot be separated in the pruning process but should be kept in mind throughout the procedure.

First, all diseased and injured branches or portions of branches or canes are removed. Then the thinnest and weakest growth, along with straggling and prostrate canes, are cut out. Now a knowledge of the fruiting habits of the species comes into play.

Red currants and gooseberries produce their best fruit on two and three-year-old canes. Therefore, a well-pruned bush of either of these types is made up of approximately equal proportions of one, two and three-year-old wood. Older canes produce inferior fruit and are removed. This means that about one-quarter of the **number** of canes is removed each year but much greater than this **volume** of wood is removed. Many new gardeners are aghast at this great reduction in the size of the bush until they see the improvement brought about in the amount and quality of fruit produced.

Black currants, like raspberries, produce the best fruit on canes grown the previous year, that is, one-year-old canes. With these it is desirable to have the largest proportion of the bush made up of this type of cane. A vigorous and healthy bush can be pruned to leave only year-old canes. The further desirability of removing two-year-old canes will be pointed out below in connection with insect control.

Currants and gooseberries should not be pruned to any extent until they are three years old except for the removal of damaged and unhealthy canes. Prune three-year-old bushes to eight or nine canes and increase this gradually, about two canes per year, to 14 or 16 canes per bush.

Some attention should be paid to spacing the canes, both for the sake of appearance and to reduce competition for light between canes. Then, too, an open, well ventilated bush pro-

vides conditions less conducive to fungus development than a crowded bush.

Pruning may be done in spring or autumn provided the bushes are dormant. Fall has the advantage that the ground is not muddy at this time of the year. However, it should be done when all danger of breaking dormancy is past. November is the best time for this. Snow at the base of the bushes may prevent the possibility of cutting the canes right down to the ground. Spring pruning must be done very early since these bush fruits start growth extremely early. The ground is muddy at this time of the year but pruning can be done on frosty mornings. The advantages of spring pruning are that there is no danger of winter killing due to breaking of dormancy, and winter-killed tips may be removed at the same time. The latter may be done in the spring after fall pruning, of course, but the amount of wood originally meant to be left may be reduced.

Red currants, and possibly gooseberries, may be headed back, that is, the new canes may be cut back at the tips to give better fruit spurs spaced more evenly along the canes. English investigators have found that gooseberries should not be headed back, while American research workers advocate it. The varieties grown here are similar to those used in the American research work and are grown under conditions more similar to those in the United States. Straggling tips are best removed, at any rate, since usually the fruit on these is spoiled when the branches are weighed down to the ground. Black currants should not be headed back.

Types and Varieties

There are many naturally occurring species of currants and gooseberries, and hybrids between different species increase the numbers of different types to several score. Of these, a few are of importance, either as existing varieties, or as potential breeding material for disease resistance or adaptability to certain environmental conditions. Since only a few are suitable for planting here, a discussion of the various types would be superfluous. The Recommended Horticultural Varietes and Zonation Map of Manitoba, published by the Extension Service, Manitoba Department of Agriculture, lists the varieties which should be grown in the different localities. This may be obtained from the Extension Service, Publications Branch, Manitoba Department of Agriculture, Winnipeg, or your Secretary could secure a supply of them for distribution to members.

The variety Crandall, listed under black currants, is of the species **Ribes odoratum**, known as the Clove currant or Golden currant, and is grown widely as an ornamental. It is a

somewhat larger growing type than most black currant and is spreading in habit. The fruit is highly regarded for pies.

Diseases and Insects— Control

Currants and gooseberries need little protection in winter but are slightly intolerant to drought and subject to sunscald. Therefore, hot, dry conditions should be avoided and some irrigation should be provided during drier spells.

The greatest hindrance to their popularity has been the Currant Fruit Fly. This insect deposits its eggs in the newly fertilized ovary soon after blossoms fall. The maggots hatch and feed inside the developing fruits, emerging from the prematurely dropped berries in late summer to pupate in the ground until blossom time the next spring. They then emerge as adults to breed and repeat the cycle. All infested currant and gooseberry fruits should be gathered and burned as soon as detected. They may be recognized by the fact that they seem to ripen prematurely and, especially in gooseberries, an area on one side becomes colored much sooner than the rest of the fruit. DDT, applied at the rate of one pound of 50% wettable powder to 100 gallons of water, or two level teaspoonfuls to one gallon of water, in two applications—one at blossom fall and a second 10 days later, has given control of this pest. Spray until the foliage begins to drip.

The use of DDT creates another problem. Mites and aphids are normally controlled by their natural enemies, the insects which feed upon them. DDT kills these predators and this allows mites and aphids to increase. It is necessary to control these by spraying.

Nicotne sulphate is a well-known control for aphids. Wettable sulphur, at about 10 pounds per 100 gallons of water, or about seven tablespoonfuls to a gallon, is effective against mites, aphids and fungus diseases. It will also mix with DDT and both may be applied simultaneously. Dormant sprays normally used for mites and aphids may also be used.

Cane borers become a problem, especially with the black currants, if neglected. Infested canes fail to develop properly and are easily seen in early and mid-season. The borer may be found tunnelling through the middle of the cane. These canes should be removed and burned, making sure, of course, that the borer is removed with the cane. Pruning out all two-year-old black currant canes is very effective in reducing the number of these pests.

The imported currant worm has caused considerable damage at times in the past. However, the control measures

outlined for the other pests should discourage any serious outbreak of this insect.

Cane blight, leaf spots and mildew are the diseases commonly occurring in currants and gooseberries in Manitoba. Dormant sprays of lime sulphur, applied in the spring before the buds burst, plus periodical applications of wettable sulphur or copper fungicides, will control these. Since the newer sulphur and copper preparations are wholly effective, it is not advisable to use Bordeaux, which has a tendency to injure the foliage. Rates of application of the fungicides are usually given with the package.

The added interest, value and variety in your garden and kitchen will more than repay for the little extra space and time spent in growing currants and gooseberries. Here is wishing you success and joy in what may be a new adventure for you!

Scarlet Runner Beans are delicious, besides being a showy climber.

House sparrows often destroy seedling peas and lettuce. Cover a light frame with Vita Pane, and place it over the seedlings. This will encourage growth and baffle the sparrows.

Sow Borecole or Kale for late season greens. Frost improves the flavour, and the curly leaves can be gathered and cooked long after the other vegetables are harvested.

A Farm Flower Garden

CLIFF ROBERTSON,
Gilbert Plains, Man.

It would be strange indeed if, with all the added time on the farm for other things as a result of power farming, a hobby so interesting and satisfying as gardening should not suddenly assume new importance. So, I am not surprised to learn that our rural flower gardens have copied the beauty of those on city lots or to find myself as enthusiastic over following this pastime as any office worker who feels that outside relaxation and more fresh air are "musts" in his search for better health.

One who loves gardening and who hopes to interest others in it naturally hesitates to introduce the topic of work so early in a discussion of this nature. Let us first of all assume that work is doing what you must do and play is doing what you do not have to do. In gardening, like everything else, one must begin at the beginning. There must be a tree belt. Our government has simplified this problem greatly by supplying free of charge a number of varieties and types of trees and shrubs necessary. A tall, heavy windbreak to the north and west will provide protection against lashing spring winds and so reduce the odds against success. Therefore, a wise gardener will make this his first step in his plans for beautification. In addition, there should be some protection on the other sides with lower growing trees or hedges on the south so that vital sunshine may not be kept out and growth hampered in our rather short Manitoba summers. As well as serving as a windbreak, the tree belt will add humidity to the air in warm weather and act as a snow-trap in winter with heavy resulting spring moisture. Perennial plants, too, will benefit from the protection of the added depth of snow and less hardy types of flowers may thus be added to the varieties to be used. If I have disappointed my readers by suggesting the labor of a tree belt, may I now suggest to them that rural electrification has removed much of the toil from gardening by making water supplies in any amount easily available from nearby streams, wells or dug-outs. Whirling sprays, luscious growth and carpety lawns are no longer limited to city dwellers. These have all become our pleasure and the heritage that today will pass along to those destined to enjoy the greater charm and beauty of tomorrow's country life.

Nowhere can one give vent to his individuality better than in his garden arrangement—unless it be in the choice of

a tie! My suggestion here would be to follow one's own desires and neither to be guided too much by landscaping authorities nor gardens you have visited. I do feel, however, that every garden should include both formal and informal plantings and that the variety of straight lines, curves and clumps will each in turn claim admirers among your visitors. While it may not meet with favor from everyone, I have bordered many of my beds with stones of even shape and uniform size—and I like them. They permit definite lines for odd-shaped plantings, catch the eye at greater distances and help to focus attention on particular varieties of flowers. I think also that the garden should contain some corner of special interest to people of all ages. In my own a collection of deer horns, antlers of elk and moose, caribou and jumpers, skulls of buffalo, timber wolves and bears, and a number of Indian relics often hold the interest of male visitors, while their wives pass on to become absorbed in the beauty of hybrid tea roses or the color arrangement of beds of nicotiana, snapdragons, petunias, sweet alyssum and other hardy annuals. Children, too, fail to get farther than the lily pool where darting goldfish catch their attention and hold them during the whole of their visit. As I look back over the years of gardening that I have done, I lay claim to only one title—I am the seed houses' best sucker! Always anxious to have some new interest or to carry out some new experiment, I try everything. Today, as a result, my garden has almost thirty varieties of lilies, from which, in my opinion, Regal easily heads the list, more than the same number of roses including Ramblers, Climbers, Polyantha, Hybrid Tea and the Iron Clad or winter hardy Rugasas; gladioli ranging in variety from the old and highly reliable strains to those carrying no name at all but only a number to indicate their parentage and the fact that they are the result of cross pollination and a flare to experiment further. Nor should I forget to mention that for young folks, too, the bird bath and numerous bird houses are always a source of keen enjoyment and that they are, to me, a daily reminder of a valuable ally in a continuous war against insects and plant vermin who appear to have no other ambition in life than to destroy the things that I have come to love. No garden can be complete without the variety of seasonal beauty—iris and peonies in the early spring perennial beds, lilacs and honeysuckles for flowering shrubbery and the wide range of leaf coloring in the autumn to herald the approach of winter and the resting period for the garden.

Many of my friends and visitors are prone to mention the time my gardening must take, or the amount of work it must be, or what it must cost! I should hate to have to even estimate the time it takes for time has a way of passing quickly when it is being spent pleasantly. As for my labor—I do not become

more tired as I work my garden but relaxed and fresher for the time that I spend in it; nor can I count the cost too great if its beauty attracts to my door those whom otherwise I might not have seen or some who, without the facilities for one of their own, come to my country garden and find a pleasure there. And in the quiet of evening, with the scent of nicotiana heavy on the air, the stately Regal Lilies nodding in the dusk and the birds murmuring their sleepy good-nights, I find it easy indeed to agree in all sincerity with the person who, many years ago, wrote "I am nearer God's heart in a garden, than anywhere else on earth."

Transplant and divide Irises right after blooming. Most lillies should be moved in Fall as soon as the growth ripens.

Tuberous Begonias require shade from midday sun. They like rich soil and ample moisture. Start indoors for best results.

Dahlias and Cannas like lots of water in dry weather. Wet weather or overwatering is harmful to Petunias.

Shrubs from Holland

WM. J. TANNER

At a meeting of your Directors, held on April 6th, 1951, Mr. W. McNaught, of the Manitoba Flood Relief Board, was present. He informed the meeting of a shipment of shrubs which were being donated by the Association "Holland-Canada", The Hague, and The "Holland Canada Chamber of Commerce", Rotterdam, to the people of Winnipeg who lost their shrubs and plants in the flood in the spring. These shrubs were already on their way and Mr. McNaught asked your Directors if it would be possible for The Winnipeg Horticultural Society to look after the distribution of these shrubs. After considerable discussion, your Directors agreed to do so, and a committee, composed of Messrs. Brown, Coffee, Hall, Campbell and Tanner, was appointed to take charge of the distribution. Stories of this generous gift by the people of Holland were published in the local papers, and applications for these shrubs were invited from those eligible. Some twelve hundred letters were received, and these were all listed in alphabetical order. This, in itself, was a big undertaking, and your committee was greatly assisted in this work by Mr. Jack Nichol. In due course the shipment reached Winnipeg and was unloaded at The T. Eaton Company Curling Club Rink on Mayfair Ave. The shipment consisted of 2,040 Peonies, 1,110 Hydrangea, 1,000 double Mock Orange, 980 Golden Elder, 1,000 Spiraea, 1000 Potentilla and 2,000 Grootenderst Roses. These were immediately unpacked. Stories and advertisements in the local papers advised all those who sent in applicatons to come and pick up their allotment on Saturday, May 11th. Several hundred shrubs were sent to Emerson, and also to Morris, and many residents of Fort Garry and district were able to pick up their allotment at the Municipal Office there. Every effort was made to see that all those who wrote in got something they requested, but unfortunately, some did not see the notices in the papers and were disappointed. There was a tremendous demand for everything, and it is to be regretted that many who came down, but had not written in, had to be turned away. By early afternoon on Monday there was not a shrub left in the rink.

Several of your Directors were on hand at the rink all day and every day during the time of distribution, and to these and also to all others who worked so hard, my sincere thanks. It was a big undertaking, and it was only by the whole-hearted effort of all Directors and others that the distribution was successfully completed.

This gorgeous garden at the rear of 1180 Wolseley Ave., home of Mr. and Mrs. J. J. Klassen, came about because of the flood. "The garden we had was ruined," said Mr. Klassen, "so we made it all over, raised the level, put in the pool, and built the cement balustrate as a further protection." The white house with its green roof, red and yellow patio and flowers of every hue "is as nice as anything I saw in California," said a friend.

Some Interesting Native Plants

HECTOR MacDONALD

The use of native plant material in horticulture is more common than most people realize. The home grounds winning the Shaughnessy Trophy this year has a good selection of native material including a collection of native ferns, while the runner-up has a corner of the grounds set aside as a wild flower garden. Native trees and shrubs are extensively used in our parks and on the grounds of our public buildings, while our playing fields, parks and many lawns and boulevards are sodded with native grass.

Several good articles have been published in the last few years on native plants suitable for general planting, and the requirements of many native trees, shrubs and plants are well known. This article will deal with some lesser known native species, with or without horticultural value, but with peculiar characteristics which makes some of our native plants interesting subjects.

Few people realize that there are twenty-nine species of ferns growing in Manitoba. The common Ostrich Fern, once plentiful in the Winnipeg area, is only to be found today in city gardens and public parks. The tiny CLIFF BRAKE grows in cracks in limestone cliffs and is quite rare, the blue green fronds are about two inches high when full grown, it is most difficult to transplant. The COMMON POLYPODY transplants quite easily and grows ten inches high. The leaves remain green over winter withering when the new leaves appear in spring. Three species of WOODSIAS and the maiden-hair-like OAK FERN grow about six inches high and are excellent for shady corners in the rock garden. They like leaf mould and rotting wood. The POLYPODY will flourish in a decaying tree stump.

The MALE FERN, SHIELD FERN and SENSITIVE FERN are all easily transplanted and grown. The SENSITIVE FERN is usually found along the edges of creeks and ditches and likes lots of moisture. It gets its common name from its sensitiveness to frost. The above three are about two feet high and make handsome plants.

The CANADA YEW, an uncommon evergreen shrub, found east of Lake Winnipeg to the Ontario boundary, has dark green foliage and bright red fruit. It grows naturally among rocks in cool moist locations. Another evergreen is the TRAILING JUNIPER found on dry sandy ridges. There is

quite a variation in the color of the leaves between individual plants. The COMMON JUNIPER, a good rock garden shrub, is a compact bush from two to three feet tall. It has definite value as a foundation shrub in a suitable location. The evergreen leaves are silvery on the underside.

Manitoba's ponds and streams provide an interesting collection of water plants, many suitable for growing in pools and streams under semi-cultivation. Four species of WATER LILIES are native and of doubtful value for home grounds. They require large expanses of water. WATER PLANTAIN and two species of ARROWHEADS found in the Red River are useful plants. The root system of ARROWHEAD during winter resembles bulbs about half the size of a golf ball and green in color. WATER BUTTERCUPS and WATER CROWFOOT, both found at Grand Beach, are suitable for large ponds. When in bloom the water is sprinkled with the white or yellow blooms.

There is a large number of moist soil and bog plants. Many are suitable for planting around the edges of pools and streams. The NATIVE IRIS or BLUE FLAG and the BLUE MONKEY FLOWER are quite showy and easy to grow. EUPATORIUMS or JOE PYE WEEDS are handsome plant, three to four feet high, found in bogs east of Winnipeg. Along the Red River there are CAT TAILS and BULRUSHES easily established in artificial pools.

Among the bog plants we find plants of peculiar forms and habits such as the PITCHER PLANT. The leaves are cylindrical and contain water to trap insects. The plant absorbs food elements from the decaying insect bodies. The leaves are mottled brown and green and odd in appearance. The flowers are reddish above and green underneath. It is quite difficult to grow under cultivation. There is another group of insectivorous plants, the SUNDEWS found in SPHAGNUM bogs. They are quite small, the leaves are less than a half inch in diameter and are covered with hairs bearing a gummy substance on the tip. When an unwary insect alights on a sundew leaf the hairs bend over, sticking the fly down and gradually the leaf absorbs the insect. Seen by the naked eye the sundews are not very showy but under a lens each hair glistens and shines. Along the eastern boundary of our province grows the odd-shaped flower, JACK-IN-THE-PULPIT. The leaves are large and ornamental. The plant grows well in a moist shady location.

We are all familiar with the PEMBINA, or HIGHBUSH CRANBERRY, and the RED DOGWOOD or KINIKINIK, to give it its Indian name. The inner bark of KINIKINIK was dried and used in place of tobacco by Indians. But there are

other shrubs not so well known that are deserving of a place in our landscapes.

Only along the east side of the Red River we find CORNUS BAILEYI or BAILEY'S DOGWOOD. This shrub makes a symmetrical bush and requires very little pruning. The flowers are creamy white. SHRUB BIRCHES are common but seldom seen under cultivation. Their growth habit is good, the small leaves are shiny and the slender twigs all make a worthwhile specimen shrub. Both these shrubs are fairly easy to transplant and thrive under cultivation.

For rock gardens and sunny banks the BEAR BERRY makes an attractive ground cover. The small and glossy leaves turn reddish in the fall and the fruit turns a bright red. This trailing shrub adds a little color to the autumn scene. The SHRUBBY POTENTILLA grows about two feet high and blooms throughout the summer. We find this shrub on dry gravel ridges and in swamps. Plants taken from either location will grow well in ordinary garden soil. It seems to adapt itself to conditions more easily than the majority of plants.

The SILVER BERRY, with its silvery foliage and scented bloom, looks desirable but its suckering habits bans it from our home grounds. BASSWOOD and WILD GRAPE have sweet scented bloom. WILD GRAPE is hard to beat as a climber. Pruning hard in March seems to increase the bearing of fruit. We have a couple of very sweet scented perennials that are not recommended for home grounds, MILKWEED, food of the Monarch Butterfly, and DOGBANE. Before snare wire was introduced, Indians made rabbit snares of fibres from the dried stems of DOGBANE.

Two or three other vines are worth mentioning. The BITTERSWEET has bright colored fruit used for winter decoration. WILD VIRGINIA CREEPER grows too rampant for small grounds but the leaves in fall turn bright red. WILD HOPS and WILD CUCUMBER are quick growing but spread rapidly.

Most of the native annuals are weeds but there are two or three very showy annuals. Unfortunately, they are difficult to grow under cultivation. In a few places, in open woods, we can see the SHOWY GROUND CHERRY with large white blooms. This handsome plant is now very scarce. FRINGED GENTIANS like moist sand or gravel and are seldom seen now.

Manitoba has a wide range of climatic and soil conditions. As an illustration we find our only native species of RHODODENDRON, a typical acid soil moisture loving plant, growing near Churchill in the north. In the southern parts of

our province three species of CACTUS plants requiring semi-arid conditions, are found. It is doubtful if the Rhododendron could be successfully grown in Winnipeg, but all three species of CACTUS do well in a sunny spot in our gardens.

There are many native plants excellent for the rock garden. Our provincial emblem, the PRAIRIE ANEMONE, is one of the first plants to bloom in spring, it likes a well drained, sunny location. Most people call our emblem PRAIRIE CROCUS. This is an example of how misleading common names can be. It is no relation to the true crocus. Another suitable rock garden plant, commonly called PRAIRIE COWSLIP, is far removed botanically from the true cowslips. A better common name is HOARY PUCCOON. This golden yellow, sweet scented flower is easy to transplant and grows well under cultivation. We have several nice violets, the early blue HOOKED VIOLET, the common white CANADA VIOLET and the deep blue LARKSPUR VIOLET. These are all easy subjects to establish. In the bogs east of the Red River we find a sweet scented white violet which is quite rare and difficult to grow away from its native bogs. This is unfortunate as it is one of our prettiest native plants.

Early in the spring, before the leaves are on the trees, the HEPATICA or LIVER LEAF and the BLOODROOT are in bloom. Indians used the juice of BLOODROOT as a dye. These woodland plants do well in a shady spot and once established will multiply from self-sown seed. The HEPATICA is a neat little plant with china blue flowers. The BLOODROOT flowers are pure white.

There are several species of ANTENNARIAS or PUSSY TOES, good carpet plants. One species with small grey leaves is found in grass right in the city. A few miles out of the city we find MERIOLIX or TOOTHED EVENING PRIMROSE, a shrubby plant about a foot high with yellow blooms. Two species of PENTSTEMON, one white, one blue, and, of course, our native PRAIRIE LILY are easy to establish. Closely related to the lily is BLUE EYED GRASS, common everywhere, and the scarce STAR GRASS, a dainty little yellow flowered plant. Many other worthwhile plants for the rock garden can be found.

An interesting group of plants are the parasitic and semi-parasitic species. They are hopeless as far as horticultural value is concerned. One, the COMMON DODDER, is an undesirable pest, but their peculiar habits and coloration are worth mention. DODDER is often found in gardens, parasitic on PERENNIAL ASTERS and GOLDENROD. The seed germinates in the usual manner and the young plant grows like other plants till it makes contact with a suitable host. Then it attaches itself to

the host, severs its connection with the soil and draws all its nourishment from its victim. There is no green coloring in DODDER and the whole plant is a golden yellow.

The GHOST PLANT is well named, being white all over. Found occasionally in woods, it is also called DUTCHMAN'S PIPE. A form of MISTLETOE is parasitic on JACK PINE near Victoria Beach. The semi-parasitic plants are not wholly dependent on other plants but require close association and contact with plants of other species in order to survive. Examples are the lovely INDIAN PAINT BRUSH, INDIAN PINK and possibly SENEGA ROOT. Attempts have been made to grow the latter in commercial quantities with indifferent success.

There are fourteen hundred distinct species of plants native to Manitoba, so far recorded. It is possible that new records may be obtained. It is not possible to be familiar with so many but a greater knowledge of our wild plants is worth considering. There is plenty of material available for horticulturists to work on, either by breeding or selection to introduce more native plants to our gardens.

Let's Have More Rock Gardens

R. C. PRAGNELL

As a keen rock gardener I should like to draw attention to this branch of horticulture. It seems to me there are a great many people quite interested in it, but do not quite get the idea of such a garden, afraid, perhaps, it will clutter up the home grounds with a pile of rocks. It could do just that for several months if planted to annuals. And unless they have seen a rockery when in full bloom with proper plants, they have no conception of how beautiful it can be, without in the least marring their grounds.

This type of gardening is a little more complex than growing annuals. Nearly all the plants used will be perennials and these are many and varied, having keen likes and dislikes. What thrives in one person's garden may be a poor specimen in another. To name two very choice things in this category with which I have fussed with little success are the Gentian acaulis and the Daphne creorum. Yet they may grow and bloom to perfection just over the fence without fussing. But such things shouldn't stop anyone from starting a rock garden. Such little things make it a lot more fun. One hears a lot about the rock gardens on the West Coast. I know they are very fine, but out there all one has to do is throw a plant down, step on it for a minute and it will grow. To me that takes the fun out of gardening. The harder a plant is to grow the greater the challenge to us who do our gardening in Manitoba. And when we succeed we feel we have achieved a little and it gives us pleasure. Now do not let the foregoing discourage anyone. But go ahead, build a rock garden (while you are resting from your ordinary garden work), you'll enjoy it. And for the few pernickety plants one tries to grow there are oodles that will grow and please you and they will make a glorious show from early spring through late summer. Long before the annuals are even planted there's bloom aplenty in the rockery. Often before the snow has all gone some of the Alpines and small bulbs are flowering. Some plants such as the Thymes and Sempervivums (Hen and Chickens) are practically evergreen, in fact things are stirring very early, which makes one feel winter is about over.

There are many articles in garden magazines on how to build a rock garden, but do not try to be too exact in following the printed page. Because if you do and start counting the costs of a ton of rocks, soil, etc., it will discourage you. Rather, start in a small way, adding a few good weathered rocks as

you gain knowledge of plants and their habits of growth. A very good idea is to make a pool, not too large. Use the soil from the pool as the base for the rockery. A pool is not hard to make and it combines beautifully with the whole garden, especially when water lilies and other aquatic plants and fishes are added. One thing which may seem to be a puzzle is what plants to get, and where to get them. It's quite easy to find out such information by attending the horticultural meetings and getting acquainted with members who are rock garden enthusiasts. They will gladly give advice on the subject. There has been some articles in the "Winnipeg Horticultural Society's" year book with very concise lists of rock garden plants, but, of course, not the nurseries from which to obtain them. Here again, such information can be gained from some person who does know the best places to buy rock garden plants and seeds. Ordinary catalogues do not list many and none of the choicer ones.

There are a few plant names which could here be mentioned. These will be found of easy culture, almost certain to give a good and encouraging show of bloom in early spring. A list would include: Draba aizoon, several varieties of creeping phlox, Arabis, Aubretia, Dianthus in variety, small bulbs as Scilla, sibirica, Snakeshead Frittilaria, and some of the Tulipa species. For later bloom, campanula in variety, true violas, dwarf iris, creeping Gypsophila and Thymes in variety. None of these are tall growing. But they soon fill out and form a foil of greenery and flowers. A few taller flowering plants to use in the background are Iceland Poppy, and Anemones, just to name two. These are just a very few of the perennial rock plants. One is tempted to add more, but that may prove to be a trifle boring to some.

The main idea of these few notes is to create interest in this style of gardening and if this has been achieved by adding a few more rock garden enthusiasts, I feel the purpose has been fulfilled and worthwhile.

When the rock garden competition is held, usually in mid-June, there are not as many entries as the judges would like to see. So I remark in closing this short preamble: Let's have more rock gardens.

A Concrete Walk

D. CAMPBELL

Provision for a good walk from the street to the door of a home is a necessary part of any good landscaping plan. The size of the building will, to some extent, determine the width of walk. Having decided the width—the kind of material to be used and pattern to be made will come next. The walk should be straight, or at least as direct as possible. Curves should be omitted, unless unavoidable.

Having decided where the walk is to be placed, the work of construction comes next. The ground should be excavated to a depth of around six inches and the width decided on. A framework of six-inch boards can be placed at edge of excavation if a gravel or crushed rock one is desired, and filled in with either material.

A concrete walk is more substantial and will last longer, the same framework is used. The bottom of walk should be well rolled or tamped down to make a solid foundation. Having done this, the mixture comes next. Gravel or sand are mixed with cement at ratio of five or six parts sand or gravel to one part cement, well mixed with required amount of water. This mixture is then placed in the framework and levelled off to top of boards. This can be done with a straight edge or ordinary piece of material, then finished off with a trowel.

If the blocks are to be separated, a thin board or piece of paper can be placed between each. When the top is firm any pattern desired can be placed on top. Some use a roller, others, just use a trowel.

If a very smooth top is desired, a mixture of two parts sand and one part cement can be used. This is placed on top of former mixture. When this is firm and set, sprinkle with water first. Then any pattern as above can be used. Few walks now have this second coat as it is not necessary.

Lawn clippings are an excellent mulch.

Half-inch mesh chicken wire loosely wrapped around tree trunks keeps sap-suckers at a safe distance.

Prairie Farm Tree Planting

JOHN WALKER, Superintendent,
Forest Nursery Station, Indian Head, Sask.

It is fitting that readers of "The Winnipeg Flower Garden" should be interested in, and be familiar with, the unit of government service responsible for the promotion of farm tree planting in the prairie region of Canada. This is a project of vital importance and timely interest, not only to residents of the Prairie Provinces, but to all the people of Canada. This claim is justified because, unless we can bring the benefits of tree planting to every farm in the agricultural area of Western Canada by way of protection for buildings, gardens, fields and roads, this area cannot continue to be populated by a contented and prosperous people.

Among the early settlers of Western Canada there was a definite urge to find means of sheltering their homesteads against cold winds in winter, and drying winds in summer. Government officials of the day realized that this was a project beyond the resources of these early settlers. So, in keeping with policy already in operation through established Dominion Experimental Farms, for the distribution of grains, potatoes, etc., tree distribution was undertaken in 1901.

During the first few years material for distribution was produced at the Experimental Farms at Brandon, Manitoba, and Indian Head, Saskatchewan. Mr. Norman M. Ross was appointed to promote this new activity. The Forestry Nursery Station, Indian Head, was established in 1903 as a distinct unit of the Department of the Interior with Mr. Ross as Superintendent. To take care of demand a second station was established in 1914 at Sutherland, Saskatchewan. The benefits of the foresight of all officials connected with this project at the outset are now being enjoyed.

When this service was started little was known about tree species which might survive, the best arrangement and method of planting, and many other factors. From early tests it was soon learned that few species from other lands and areas would survive under open prairie conditions. Definite test plots of both imported and native species were set out at the Forest Nursery Station. From these, reliable species and strains soon began to be recognized.

In this connection I may say that significant differences as to hardiness exist between strains of American Elm; for example, seed from trees established in Regina as compared

with seed from trees growing in New York. Strains of so-called Chinese (Siberian) Elm also differ markedly in this respect.

From a modest annual distribution of 1,049,500 trees to 645 farms during the five-year period 1901-05, average annual figures covering the five-year period 1946-50 are 5,340,000 trees to 5,542 farms or planters. Total distribution including the 1951 shipping season has been 228,114,775 trees to an estimated 220,292 planters. There has also been a satisfactory and sustained distribution of evergreen trees over the years. Total distribution of these since 1910 has been 5,958,368 trees to approximately 38,067 planters.

Many planters continue to plant trees for several successive years. Planting may also be renewed with a change of farm occupancy or ownership. Desirable tree planting within the prairie region has been accomplished on approximately 100,000 farms. On about an equal number of farms tree planting remains a neglected asset.

As a matter of interest and information it should be stated that evergreens distributed are for the most part 2-2 stock, or four years from seed, in the case of Pine, and 3-3 stock, or six years from seed, in the case of Spruce.

The policy and recommendations followed throughout the years were not fully tested until the dry 1930's. During these years it was learned that:

(1) Shelterbelts should not contain too many rows of trees;
(2) Shelterbelts would not survive if neglected;
(3) Poplar and Willow failed under extremely dry conditions;
(4) Proper soil preparation was most essential and
(5) Evergreen and broadleaf trees should be planted in separate rows.

The merits of that imported species, common Caragana, particularly as a shrubby plant to provide ground protection, were also fully established.

During the same dry years, however, the influence of vigorous and well-managed tree belts in reducing drought and wind hazards to crop production had been forcibly demonstrated on various farms in the prairie region. Since early in the century all had been convinced of the value of tree protection to homes, gardens and buildings. Farms where field crops benefitted from tree belts became well known during the drought years. These need not be specified here.

When P.F.R.A. was established in 1935 to study and develop practices which would rehabilitate prairie agriculture

following the drought years, four Field Shelterbelt Association areas were organized for the specific purpose of determining the value of field shelterbelts in overcoming soil drifting, reducing wind influence and curtailing loss of soil moisture. In other words, would field shelterbelts provide some protection against crop failure! These project areas are supervised by the Forest Nursery Station, Indian Head, Saskatchewan.

Total Number of Trees Supplied for Planting in Field Shelterbelt Associations 1935-1949[1]

Name of Association	Size of Association	Miles of Hedges Planted	Total Mtce. Payments
Conquest, Sask.	126 sq. miles 80,640 acres	554.06	$36,922.25
Aneroid, Sask.	144 sq. miles 92,160 acres	87.47	3,906.93
Lyleton, Man.	72 sq. miles 46,080 acres	287.73	22,380.10
Porter Lake, Alta.	25 sq. miles 16,000 acres	27.60	1,926.84
Total	367 sq. miles 234,880 acres	956.86	$65,136.12

[1] Mostly single rows of Caragana, or Caragana with trees interspersed at various intervals in the same row.

While these Association areas have been developing and extending, the number of independent farmers throughout the Prairie Provinces planting field shelterbelts has steadily increased. Figures covering this distribution for the past six years follow:

Year	Planters	Number of Trees
1946	89	298,675
1947	92	377,250
1948	129	420,075
1949	226	744,450
1950	268	1,056,075
1951	583	2,188,925
Annual average	231	847,578[1]
Per planter	1	3,669

[1] Sufficient trees for a little less than three-quarter mile each, or over 160 miles for all planters, with plants set at one foot apart.

These people are realizing, or expect to realize, a dollars

and cents value from their field shelterbelts. We frequently receive testimonials from tree planters in which they vouch for increased yields in areas protected by field shelterbelts. We are pleased to receive such statements but we are reserving final judgment until results of carefully-conducted tests covering a period of years may be verified.

Meantime, at the Forest Nursery Station data concerning the development and survival of numerous tree species in specific plots have been secured. The following table shows the height and diameter of various evergreen species during a 30-35 year period. The figures given indicate potential development of somewhat uncommon kinds:

GROWTH OF EVERGREEN SPECIES
Forestry Nursery Station, Indian Head, Sask.

Species	Years Planted	Height in feet	Diameter in inches
Colorado Spruce	35	30	5.2
White Spruce	35	35	5.0
Black Hills Spruce	35	35	5.6
Norway Spruce	32	33	5.0
Balsam Fir	35	36	5.6
Douglas Fir	30	19	3.5
Red Pine (widely-spaced)	30	31	8.3
Jack Pine	35	28	4.0
Lodgepole Pine	35	28	4.0
Limber Pine	30	24	4.7
Bull Pine	30	23	4.0
White Pine	30	26	4.0
Scots Pine—Finland	25	25	3.4
Scotch	25	26	3.5
Russian	36	32	4.9
Russian (Riga)	36	29	5.5
Scotch	36	39	6.5
German	41	39	6.9
Larch —Siberian	35	42	5.6
European	35	32	6.0
American	35	32	4.5

DEVELOPMENT OF BROADLEAF SPECIES
Forest Nursery Station, Indian Head, Sask.

Species	Years Planted	Maximum Height (ft)	Diam. (in)	Remarks
Cottonwood	45	75	24.5	General Border
Larch, European	42	63	11.8	Plantation
Larch, Siberian	42	62	11.0	Plantation
Larch, American	42	61	11.4	Plantation
Poplar	?	39	7.1	Plantation (near Basswood)
Boxelder	39	38	8.2	Plantation
Silver Maple	39	33	6.4	Plantation
Green Ash	39	36	8.4	Plantation
Manchurian Ash	23	23	5.2	Specimens
White Birch	42	36	5.2	Thin Planting
Elm, American	39	29	8.8	Plantation
Elm, Siberian	?	29	6.7	Thin Planting
Elm, Japanese	22	27	9.7	Specimens
Willow—Red, Laurel	39	29	6.8	Plantation
Basswood	?	28.5	8.1	Plantation
Bur Oak	19	19	4.2	Thin Planting
Ohio Buckeye	18(?)	17.5	5.3	Thin Planting
Ohio Buckeye	?	22	7.7	Specimen
Black Walnut	10(?)	14.5	2.9	Thin Planting

As one travels through the various communities of the prairies examples of good and poor husbandry in the matter of tree culture are not difficult to find. Our recommendations are illustrated in farm shelterbelts containing three or four rows of mixed broadleaf trees, Caragana occupying the outside row. Within the protection of these broadleaf tree rows, and separated from them by a cultivated strip 16-20 feet wide, will be planted one row or more of evergreen trees, generally Spruce. The wise planter will see to it that fences or other obstacles do not prevent his keeping ALL margins thoroughly cultivated and free from weeds. Pruning is to be kept at a minimum.

I have tried to indicate that tree planting is not just history. With the passing years definite progress is being made. Tribute is due the farmers of Western Canada who have done a grand job of building islands of tree growth in an area which was formerly bald prairie. But, if rural life is to remain stable and attractive the progrm of tree planting must be speedily expanded. Can we afford to be indifferent about it?

Plan and Plant Your Own Home Grounds

By PROF. E. T. ANDERSEN

Attractive and convenient home grounds are the result of planning and forethought — not accident. By adherence to a few basic principles any home owner can produce, not without effort, but certainly with a great feeling of accomplishment, a garden area full of enjoyment, inspiration and relaxation.

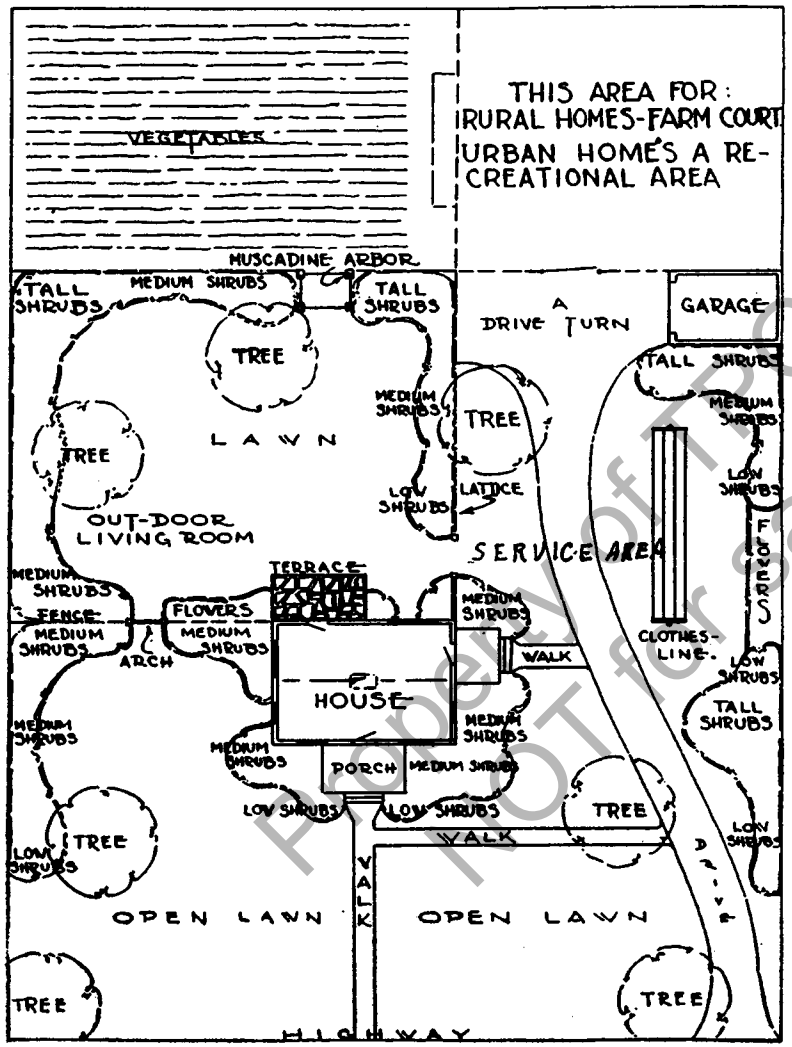
This brief article will attempt to deal with the subject in a general way so that the suggestions may be fitted to any particular set of circumstances. As each home is a problem by itself, no one detailed plan can be used to suit the needs of more than one home. Basically, all homes should be developed with consideration of the same general principles.

Putting first things first, let us start at the bottom and consider the soil, the foundation upon which we are going to build the entire garden. If foresight has been used, the black topsoil will have been saved in the excavation process and spread back over the surface after levelling. Too many of us, however, find that a layer of lifeless subsoil has been spread to completely bury the valuable black topsoil originally on the surface. When this is the case, it is necessary to improve the surface for growth, in some manner. Probably the most satisfactory way of doing this, from the long term standpoint, is to have black topsoil spread over the area to a depth of 4 or more inches. Three to five inches of well rotted manure worked into a surface of subsoil will go a long way toward making it suitable for most plants. Seek the advice of your government soils extension specialists or the University Soils Department.

In levelling the soil about the house always consider the grade. A slope, even ever so little, should always be provided away from the building in each direction. Steep slopes are not desirable. If there is considerable drop between house and sidewalk, a terrace may be necessary. Such a terrace is generally best located so that about 1/3 of the area in front is above the terrace and 2/3 below. If it divides the area in half, both will appear small. If at all possible, it is well to allow the soil to settle for several months before walks are laid or any planting is begun. There is likely to be considerable settling

of the soil during these first months.

This is a good time to start planning. Do it on paper first. This will prevent many errors and avoid many disappointments. Few of us like planning, particularly on paper, but this is one place where a small amount of time and effort is generously rewarded. A rough sketch is better than nothing, but better still is a plan drawn to scale on squared or cross-hatched paper. Such a plan will give a clearer impression of sizes and distances, and avoid cluttering, crowding, over-spacing, or misplacing of plants.



Sketch 1

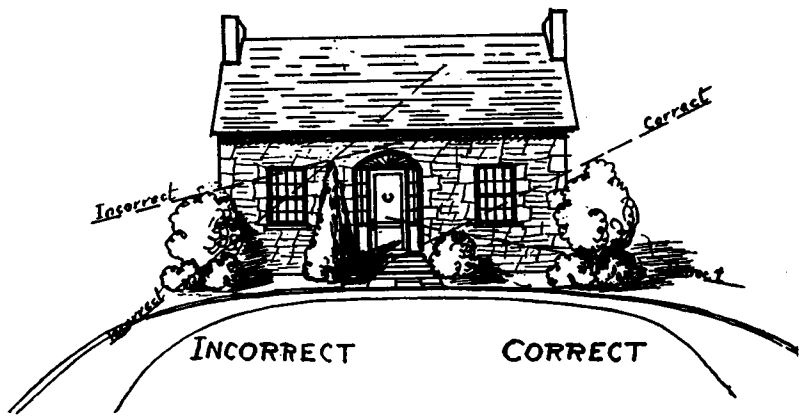
HOW TO BEGIN YOUR PLAN

Begin by choosing a simple scale such as one inch equals four feet, and draw in the shape and size of your property, the location of buildings, and walks, which are permanent or already in place. Large trees which you wish to have remain should also be located and drawn in.

Next consider the general plan of your grounds. Basically, a home grounds should have three main areas: (1) A public or entrance area in front, leading to the front door and seen from the street or sidewalk, (2) A service or utility area conveniently located for use from the back or kitchen door, and (3) An outdoor living-room or private garden area. In very small grounds, it may be impossible to provide both a service area and outdoor living room area and the two may be more or less combined. The accompanying sketch (See Fig. I) shows these three areas roughly located. Smaller grounds would have proportionately smaller areas.

THE PUBLIC AREA

Let us now consider these areas one at a time, starting with the public or entrance area. Landscaping in this region is for the purpose of improving the appearance and accentuating the better features of the house. Planting must for this reason be simple, neat, and so arranged that it will not hide the building from view or obstruct the views from within. Plants should be selected and arranged to enhance the beauty of the house through framing of features and by softening the rigid vertical lines and easing them into the horizontal lines of the lawn. See illustration Fig. 2. Comparatively few plants are necessary to bring about the desired effects. An



Sketch 2

open stretch of lawn in front, leading up to the foundation plants located largely on the corners and beside the doorway; with a few larger trees to the side of the house and either in front or back of it to give framing to the picture will usually suffice. See Fig. 1. The largest shrubs should always be located at the corners with slightly smaller ones beside the doorway. Smaller shrubs may be used for facing of the larger ones and under windows. See Fig. 2. This simple planting is all that is essential in this area. Other features may be added for the sake of interest but these should be at a minimum to avoid attracting attention from the main part of the picture, namely the house. A low hedge in front (never tall unless road dust is a serious factor), or a low, neat, attractive lattice or other fence may help a great deal in keeping out dogs and preventing unnecessary traffic on the lawn. A few perennial flowers of long lasting appeal or a window-box may be used in front to add a bit of brightness and color. But remember — these features must not steal the show.

THE OUTDOOR LIVING ROOM

Next, let us consider the living area, With most small properties, this area will have to be located to the back of the house. With medium-sized properties, it may be partly along one side and to the back; in larger areas, a portion or all may utilize part of the area to the front of the house, leaving more space at the back for playground, garden or orchard areas. The outdoor living area should be closely associated with the living room of the house — either by doors or a large picture window. Frequently a patio joins the informal garden area to the house. See Fig. I. In addition, there should be easy access to the living area from both the public area and the service area; don't create an enclosure with a "fenced-in" feeling. Convenient movement from one garden area to another is a sign of good planning. And yet the main consideration in this area is privacy. It has been said that "the difference between just another back yard and outdoor living starts with privacy". This, in fact, was one of the main ideas of the first garden developments. We and our families want a spot where we can lounge or read in the sun, or shade, in comfortable attire; or have an outdoor meal without the feeling that we are public specimens for our neighbours and the general public to study. The whole area does not need to be, and should not be enclosed to give the privacy needed. Only certain locations need to be private.

Privacy may be gained in several ways. On small properties, vine-covered fences or attractive wooden fences are frequently used to save space. In medium-sized properties, a combination of fences and shrubs are often used. In large

yards where space is not at a premium, dense plantings of shrubs may be used to advantage. Whichever material is used the tallest should be along the outside of the area with smaller shrubs and flowers coming toward the inside, gradually bringing the level of the border planting down to that of the lawn. The width of the border plantings should be in proportion to the size of the area. A 12-foot border makes a lawn 25 feet wide seem very cramped and small; a 4 or 5-foot border will make a 25-foot lawn width appear larger. On the other hand, a 4-foot border around a large lawn area appears puny and artificial.

Do not use a straight line of shrubs of the same kind. These will be monotonous and artificial. A small informal grouping of one or similar kinds in combination with others, larger or smaller, will leave a more interesting and natural effect. Use mass or group plantings of shrubs where possible.

SHRUBS TO USE

Elsewhere in this publication you will find a recommended list of ornamental shrubs, classified according to small, medium, and large or tall. For border plantings large and medium-sized shrubs are best for background, with a few small ones out in front of the groups. For foundation planting, medium and small shrubs will prove most suitable. Reference to this list should prove invaluable to you in the choice of these shrubs. Locate them on your plan.

TREES

Before leaving the plan, we must consider briefly the place and purpose of trees in the home landscape. In small or medium-sized properties, they must be used sparingly. Trees require much space if they are to grow into attractive plants and space is at a premium in such home sites. Trees are used mainly for two purposes; to frame the picture and particularly the house, and to provide shade. Exotic trees are often used for the purpose, which in addition add much interest and general beauty. One tree on each side but several feet from the wall of the house will serve to frame the two sides when seen from the front. These are usually located most advantageously several feet to the front or the back of the house, and should not be closer to the corner than 15 feet if possible. This will help to avoid crowding. Trees should never be planted directly in front of the house where they will, in time, hide the house and obstruct the views. One or two large growing trees such as American elms near the back of the property line which will grow taller than the ridge of the house, will add framing and comfort to the picture and in many cases provide shade. More trees should, of course, be used on correspondingly larger properties.

A list of trees for various purposes are also included in

the recommended varieties list. When such trees as are deemed desirable have been located, the plan is more or less complete. That is to say, the main structure of your landscape has been planned; the more detailed furnishings such as flower borders, pools, rockeries, arbors, specimen plants, may be located in a general way but can be planned in greater detail at a later time.

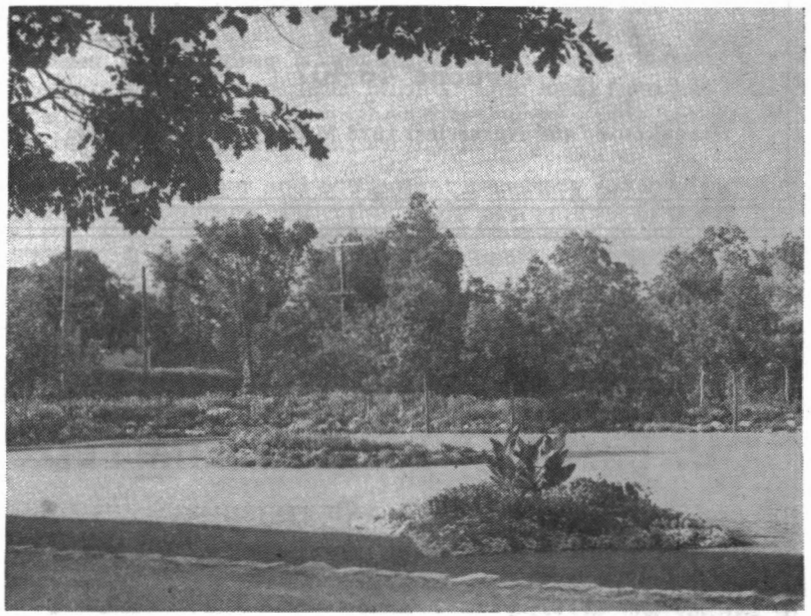
It is impossible in the space of this brief article to present the details in connection with home grounds planting and planning. It is hoped that this may serve as a basis for a plan and a development which can, in turn, be developed in its details. It is not proposed that the entire task be completed in one season or even in two. The development of a plan will permit the job to be done in pieces and yet result in a closely knit harmonious picture on completion. The following order in the development tasks is suggested, one or several of which might be undertaken in any one season: (1) First and foremost is the matter of a well graded, levelled, and enriched top or surface soil. If provided in the early Summer, leave idle till late August or early September when the lawn may be sown or sodded to good advantage; if prepared in the Fall, leave unplanted to settle over winter. (2) Establish the lawn. It is preferable to get the lawn areas underway as early as possible both in front and back of the house. No single feature is more essential both from the standpoint of beauty and comfort than is the lawn. If time is pressing, preference should be given the front lawn. As indicated, lawns are best started in early Fall or in early Spring. (3) Foundation plantings of shrubs, and trees for framing are best planted in early Spring and follow the lawn in order of importance. They may be planted at the same time as the lawn. It is well to get these shrubs and trees underway at an early time as they will require several years to produce optimum effects. (4) The planting of border and screening or background plants around the outdoor living room area should next receive attention. Annual flower beds or borders are frequently planted in areas where these shrubs are to be located until such time as they can be planted. (5) Last comes the establishment of garden features. Do not locate these in the open stretches of the lawns but rather along the borders, in bays and corners where they will have a natural foliage background and setting. Rock gardens, pools, plants, or flower beds which form separate garden effects and break the even sweep of the lawn area can be very disturbing, unnatural, and add greatly to the inconvenience of garden maintenance.

One last thought should be left with you. Try to visualize the shrubs and trees as they will appear in 5, 10 or 20 years. Remember that they grow in both spread and height. In this way try to avoid overcrowding and placing plants too close to walks and buildings.

Mrs. J. Slipetz, 417 Scotia St., winner of the Winnipeg Novice Home Grounds and the Shaughnessy Trophy for the best Home Grounds in all classes.

Mrs. W. W. Gyles, 825 McMillan Ave., winner of the Home Grounds up to 33-foot frontage.

Mrs. M. Harding, 198 Bell Ave., winner of the Home Grounds, 34 to 36-foot frontage.



Mr. J. K. May, 210 Hertford Boulevard, winner of the Home Grounds 66-feet and over.

Spud News

N. SHENDEREVICH

It is of interest to watch the changing picture of the potato industry in Manitoba. During the last number of years overproduction, low prices and a poor ungraded product were bywords that went with Manitoba potatoes. Drastic measures were necessary to improve the quality of, and to restore consumer confidence in Manitoba-grown potatoes.

Early in 1951 grading regulations were first enforced, and the result to date has been very encouraging. It has been proven that Manitoba potatoes are good if the culls are kept off the market. The biggest single fault is mechanical injury of tubers which can be considerably reduced only through a continuous educational program for the producer, the trucker and the wholesaler, to impress them with the need for careful handling. In the seven months since grading was enforced, tremendous progress has been made in the quality of the product put on the market. Manitoba potatoes are now being bought with confidence by local consumers, and are at the same time slowly regaining lost markets in other provinces.

An aftermath of enforced grading has been the introduction of special processing equipment to Winnipeg. Washing potatoes has become a general practice with enthusiastic acceptance by the consumer public. One local firm has introduced a large unit which washes, dries, waxes, polishes, grades and bags potatoes in one assembly line.

The extra labor and equipment necessary for grading and packaging, together with the high percentage of culls has

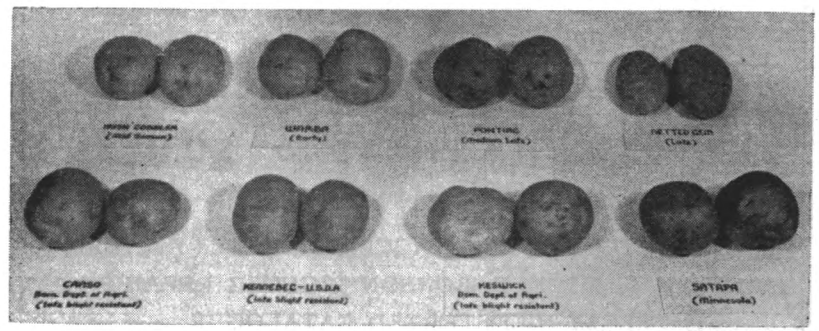


Photo by H. R. Hikida

A comparison of potato varieties—in the back row four varieties in general use in Manitoba, and in the front row four promising new varieties that have been under trial at the University of Manitoba.

brought about a considerable increase in price, although in most cases this increase does not go to the grower. However, other factors have been largely responsible for the sharp increase in potato prices as at November, 1951. Adverse fall weather, with sharp frosts, reduced the local marketable crop considerably. Alberta, always a large exporter, harvested only a part of its crop, while the United States produced the smallest crop in many years. The over-all picture is one of shortages and resultant high prices.

These high prices of potatoes will be an additional burden with the present high cost of living. Thus it is only natural that many will think again in terms of that potato patch in the backyard. A brief look at what is available in potato varieties will be of value. The eight varieties below are in general commercial producton in Manitoba:

Warba and **Red Warba** are main early varieties with good yielding, cooking and keeping qualities. Both are rough and deep eyed. **Bliss Triumph** yields well, and matures early but has only fair cooking and keeping qualities.

Irish Cobbler and **Canus** are white varieties of midseason maturity. Cobbler is a good yielder with good cooking and keeping qualities but has deep eyes, usually rough tubers and a tendency to produce hollow heart. Canus is a good yielder with fair cooking and keeping qualities, also a thin easily bruised skin.

Pontiac and **Red Pontiac** are attractive high yielding red varieties of later maturity. Cooking and keeping qualities are fair but because of their high yield both are very popular as commercial varieties.

Netted Gem is a finely russeted late variety with very good cooking and keeping qualities. It requires a light soil with uniform moisture, otherwise many rough, knobby, unmarketable tubers are produced. It is quite resistant to common scab.

Columbia Russet is a coarsely russetted late variety with very good cooking and keeping qualities. It is not scab resistant, but easier to grow than Netted Gem. Both Netted Gem and Columbia Russet are considered low yielders.

Green Mountain is a late white variety with good cooking and keeping qualities. Produces well on good soils but tubers are usually rough. It is especially susceptible to virus diseases.

The saying "beauty is only skin deep" applies very appropriately to potatoes since there is no relationship between the outward appearance and the cooking quality of a potato. Home gardeners can, and should, grow high quality varieties

in preference to low quality ones, even where they may lose out in appearance. In most cases the outward attractiveness ends up in the garbage anyway. Of the eight varieties mentioned Pontiac, Red Pontiac, Bliss Triumph and Canus are rated as having comparatively low quality.

New varieties are continuously being produced as a result of breeding programs at several places in Canada (including University of Manitoba) and throughout the United States. The University of Manitoba makes an effort to bring in all new varieties as soon as they are released in order to get information on their adaptability, yield and quality under Manitoba conditions. As yet no one variety has been developed that possesses all the desired characters to satisfy all growers. Each variety mentioned below has been under trial for one, two or more years at the University of Manitoba. Some of these show particular promise. Those marked with an asterisk are now licensed for distribution in Canada.

*__Canso:__ Dominion Department of Agriculture. White, late maturity, low yield, good quality, some hollow heart. Resistant to late blight.

*__Keswick:__ Released by Dominion Department of Agriculture. White, medium-late maturity, good yield, fair quality, low tuber set, thus producing oversize tubers. Resistant to late blight.

*__Kennebec:__ Released by the United States Department of Agriculture (U.S.D.A.). White, late maturity, good yield, fair to good quality, oversize a problem, resistant to late blight.

__Essex:__ Released from New York State. White, late maturity, good yield, fair quality, resistant to late blight.

__Cherokee:__ Released by U.S.D.A. White, flattened, midseason maturity, good yield, good quality. Resistant to common scab.

__Satapa:__ Released from University of Minnesota. Dirty red, round, medium-early maturity, good yield, fair to good quality.

__Lasoda:__ Released from University of Louisiana. Red, flattened, medium-late maturity, good yield, fair to good quality.

__Progress:__ Released from University of Nebraska. Red, good appearance, medium maturity, fair yield with many tubers per plant, fair to good quality.

__Snowdrift, Chanango:__ Released from New York State. Both resistant to late blight, late in maturity, good yielders, fair to good quality.

__Yampa, Pungo:__ Released by U.S.D.A. Both varieties resistant to common scab, but little information is available on their performance in Manitoba at present.

It will be noticed that six of the new varieties mentioned show that they are resistant to late blight. This disease is not a serious one in Manitoba every year, however, it can and does cause serious damage in some years, usually when the July weather is cool and moist. The disease kills the tops prematurely and then causes a rot of the tubers. Varieties which are not resistant to late blight can be adequately protected against it by a dusting or spraying program with a fungicide.

At present the available information on the new varieties mentioned would rate the following worthy in Manitoba: Kennebec, Satapa, Canso, Cherokee, Lasoda and Essex. Kennebec and Canso can be purchased from local seed growers, but it may be difficult to secure seed of the other varieties till such time that they are licensed in Canada.

High yields of good quality potatoes should be the objective of every grower. The first step is the selection of a suitable variety, which is adaptable to local conditions. The next step is very important and usually is the difference between success and failure. "PLANT ONLY GOOD SEED". In most cases this calls for certified or better seed which is vigorous, true to variety and has a minimum of seed-borne diseases.

For the control of insects DDT has proven to be the most reliable insecticide, possessing contact and residual killing powers, while being relatively non-toxic to humans. Mixed with a fungicide, a good all-purpose compound for insect and late blight control is produced. Recently the trend has been towards the use of organic fungicides like dithane, parzate, etc. DDT will not give good control of potato aphids which are largely responsible for the transmission of virus diseases. New experimental insecticides like parathion and systox that have been found to control aphids require extreme care for they are very poisonous to humans.

Probably the most significant recent development in the potato industry has been the potato harvester or combine. Although in general use in the U.S.A., it was not until 1951 that the first machines were tried in Manitoba. The principle involves the pickup, elevation, grading and depositing of bulked potatoes into a specially built truck box. Local experience substantiated many claims by American producers to to the efficiency of operation. However, it was found that soil type played a big part in the machine's performance. With proper care there was less injury to potatoes through the use of this method than with the old method of hand-picking and bagging. It will take several years before the advantages and disadvantages of these machines are fully realized. However, the present labor shortage will just hasten the time of complete mechanization of the potato harvest.

Foundation Planting

W. A. CUMMINGS
President, Manitoba Horticultural Association

Careful planning coupled with a knowledge of suitable materials for use in Foundation Planting are prime essentials in the successful landscaping of our home grounds. Border plantings, shrubbery screens, and specimen plants, all help to create the picture we desire but the house and the plantings immediately around it are the focal points of our landscape.

Trees and shrubs are the only materials which we can use to tie the house to the earth and make it look as if it belonged to the landscape instead of sticking up like a sore thumb. The time-honored slogan "It is not a home until it is planted" bears repetition. A building without the softening effects of properly spaced and carefully selected trees and shrubs looks bleak and cold no matter what it's architectural excellencies.

Perhaps one of the most common mistakes in foundation planting is the use of too much material. This a natural tendency. Young plants as they come from the nursery do not fill up the space and in order to do so much more is often planted than will eventually be required. This tendency is often taken advantage of by the unscrupulous nursery salesman, whose eye is on immediate results in commission to him and who doesn't worry too much about the final results. Hand in hand with overplanting is the practice of planting materials in the wrong place without a thought to their ultimate or mature size. A honeysuckle which will grow from 10 to 12 feet in height may look alright planted under a window for the first few years, but it will soon nullify the original purpose of the window. A blue spruce planted along the walk or on the lawn a few feet out from the house may look very much in place while it is still small, but as it reaches maturity with a 20-foot spread and 40 feet in height it is, to say the least, grotesquely out of place. Some properties have several of these in front of the house. How much better they would now look slightly back and to one side or better yet right at the back of the lot, always assuming, of course, that the lot is large enough to hold them. Many of our common trees are much too large for the average city lot and should be left for park and boulevard planting.

Our rigorous climate in Western Canada somewhat limits the material available for landscaping. Not many years ago

one could count the shrubs commonly in use on the fingers of one hand. Common lilac, Chinese lilac, Tatarian honeysuckle and some less hardy individuals such as Van Houtte spiraea. Fortunately, in the last few years many new shrubs both native and foreign along with hardy hybrid material have been made available to us by the untiring work of plant experts.

It is only in fairly recent years that the true value of many of our native shrubs and trees has been brought out. The problem of shrubs to grow in shady locations had long bothered the expert until the native dogwood and three native Viburnums were brought into cultivation. Red-Osier dogwood with its brilliant red bark, clean foliage, white clusters of flowers followed by white berries will grow and thrive in considerable shade as will also the ordinary high-bush cranberry, nannyberry and downy arrowwood. The European high-bush cranberry is not nearly as hardy as its native cousin but in sheltered locations the double form known as Snowball can be grown successfully. Under cultivation these are all shrubs which grow to about six feet in height with the exception of nannyberry which is quite upright in form to ten feet in height. The latter is very useful where a tall upright shrub is required.

Flowering currants are also shade tolerant and somewhat dwarfer. Golden currant, Ribes aureum, grows to about 5 feet, as does also the Siberian Ribes diacanthum, while alpine currant, Ribes alpinum, is quite dwarf 2 to 3 feet. Ribes diacanthum is a relatively new plant in Canada, it is quite upright, has bright green shiny leaves and red berries. It also makes an excellent medium height hedge.

Another native plant which has greatly enhanced the list of shrubs for foundation planting is the shrubby cinquefoil, Potentilla fruticosa. It has a wide adaptation as to soil and moisture. Growing to about three feet in height, it is one of the very few continuous blooming shrubs which we have. The flowers are single yellow about one inch in diameter and are borne in abundance. The bush is dense and the foliage is greyish green. Two horticultural varieties, P. f. friedrichseni and P. f. farreri, are also grown, the former is upright in habit and grows slightly taller than the species, while the latter is a dwarfer form with very brilliant yellow flowers. An introduced form P. f. dahurica has white blossoms and is as hardy as the native.

With the advent of hardier varieties of mock oranges, their use in foundation planting is increasing. They have good foliage and are quite upright in habit, from four to five feet. The pure white, sweetly perfumed flowers appear early and

in great profusion, especially if the shrubs are planted in a protected location. The variety Mrs. Thompson is one of the most reliable and the Manchurian species P. schrenki stands our winters well and in most years bloom profusely. This species like other Manchurian introductions may suffer from late severe frosts, fortunately this happens only rarely. Purity and Patricia, two Dropmore varieties, both have large single flowers and can be relied upon to bloom most years. Morden's double flowering variety Sylvia is an excellent double but unfortunately lacks the hardiness of some of the single-flowering varieties. P. virginal is another double flowering form commonly grown, it also lacks hardiness and is taller than most of this group. Mockoranges, because of their upright habit, are excellent shrubs for use in corners such as those made by the steps on a house.

Honeysuckles have long been represented by the fast growing rangy Tatarian honeysuckle and because of its ability to become overgrown in a very short period of time, many people have become prejudiced against this group. Although it still has a place in screens and hedges on larger properties, its indiscriminate use in the past has caused many householders some backaches in trying to get rid of it.

The new Ottawa hybrid honeysuckle Carleton is much more compact and has uniformily bright pink flowers followed by large very bright red berries. It can be used at the corners of the house where often a taller shrub is required to break the line of the house. Fly honeysuckle, Lonicera xylosteum, is a recently introduced honeysuckle with greyish green foliage, yellow flowers and bright red berries. It grows to about six feet and is much finer and denser than Tatarian honeysuckle. Lonicera coerulea edulis, commonly called sweetberry honeysuckle, is a neatly rounded compact shrub to 4 feet in height with bluish green foliage which can be used to advantage in foundation planting. Another honeysuckle of quite different type is the climbing Dropmore Scarlet Trumpet honeysuckle. It is a hybrid between the non-hardy Scarlet trumpet honeysuckle and the native Lonicera hirsutus. Being a vine, its use is confined in foundation planting to wall spaces where a trellis can be erected. The flowers are trumpet like, red and yellow borne in clusters from early summer until severe frost. It sohuld be taken off the trellis and left lying on the top of the ground so that the snow will cover it for the winter.

Two Cotoneaster species are useful in this type of planting. Peking cotoneaster, C. acutifolia, is upright with shiny green leaves and black fruit in the Autumn while the European cotoneaster, C. integerrima, is more spreading with

greyish foliage and bright red berries. The former grows from 4 to 5 feet and the latter from 3 to 4 feet in height.

Spiraeas as a group include many of our best and most popular foundation shrubs. Van Houtte spiraea has been widely used in the past, but it is not nearly hardy enough for our climate and is being replaced by hardier and more adaptable varieties. Among these are one of its parents, the three-lobe spiraea, which is quite similar, not quite so tall and hardier. The Korean spiraea, S. trichocarpa, is another hardier white-blooming spiraea which grows from 3 to 4 feet in height. New hybrids of both Spiraea trilobata and Spiraea trichocarpa are proving hardy and will, when available, be equal or better than S. Vanhouttei and quite hardy. Spiraea media sericea or Oriental spiraea has sprays of creamy white flowers, grows to about 3 feet in height and is one of the earliest of the hardy spiraeas to bloom. Spiraea flexuosa has starry white flowers in clusters and blooms about two weeks later than the oriental spiraea. Spiraea pikowensis is a stiffer, more upright shrub to 4 feet, hardy and drought resistant. Two other spiraeas are worthy of mention, both are dwarf and have colored flowers. Anthony waterer has flat clusters of red flowers on an 18-inch bush and Rosabella has pink flowers in flat racemes on a 12-inch bush.

Many of the hardy shrub roses can be used to advantage in foundation planting. Among the lower growing forms the variety Dr. Markeley with its shiny green leaves and double pink flowers in July is highly adapted. Its height is about 2 feet. The dwarf, single pink flowered bristly rose, R. nitida can be used with good effect. It has numerous bright red spines and the leaves turn a brilliant red in the Autumn. Where a taller, more upright shrub is required, the native rose hybrid Betty Bland with its double pink flowers is useful. It has the added attraction of having bright red bark which lends color to the winter landscape. Two single flowering white rose species, R. altaica and R. laxa, both have their place. The former has large rounded black fruits and the latter bright red bottle-shaped fruits. Among the rugosa roses we have a fairly wide choice of hardy varieties and hybrids. Hansa has red flowers and continues to bloom throughout the season. Two newer hybrids, Geo. Will and Will Alderman, also have this everblooming habit, both are pinks. The blooms of Wasagaming closely resemble the old cabbage rose but it is much hardier.

The genus Prunus contains many of our really good ornamental shrubs. Russian almond is a low growing shrub which is literally covered with its pink blossoms early in the Spring. Its one fault is that it suckers badly, still it has its place where it can be contained. A new form recently secured by the Experimental Station at Morden is even more ornamental and lacks the suckering habit. It is taller and more upright. The double flowering plum, Prunus triloba fl. pl., is one of our loveliest shrubs when in bloom; unfortunately, in some locations it does not seem to do well. A Morden hybrid, Prairie almond, also has double pink flowers and is much hardier. In contrast to the ordinary double flowering plum which produces fruit, this hybrid has bright red fruit in abundance which adds greatly to its attractiveness. The straight species Prunus triloba is single flowered but it produces its bloom in such abundance that its light is not hidden by any of its more aristocratic offspring. It is spreading, 6-8 feet in height and is another excellent shrub for planting at the corner of the house.

Taller material is quite often required. Two lilacs, which are admirably suitable for foundation planting where height is required, are the Amur lilac and its taller variety the Japanese tree lilac. Both have large clusters of creamy white fragrant flowers in July. They are the latest of the lilacs to come into bloom, thus extending the season of one of our most popular groups of flowering shrubs. Amur lilac grows 8 to 10 feet, while Japanese tree lilac grows to 20 feet in height. Another relatively new tall, upright small tree which is becoming increasingly useful is an upright ornamental crabapple from the Arnold Arboretum, Malus bacatta pyramidalis. The original tree at Jamaica Plains, Mass., is 25 feet in height and only four feet wide. Both the lilacs and crabapple are also highly effective as framing subjects.

Constant search for new shrubs to add to the variety now available for foundation planting continues. Passing mention of a few of these should be made. Arctic willow, Salix purpurea nana, a dwarf two-foot very dense shrub, looks promising and will soon be available to Canadian gardeners. A dwarf buckthorn Rhamnus pallasi will soon be on the market. It has just recently been released from quarantine by the Dominion Department of Agriculture which keeps its eye on all buckthorns to see whether they are liable to harbor the serious disease of oats known as crown rust. It grows two to three feet in height, is very dense, has dark green very narrow foliage and is quite thorny. It gives promise of making an excellent dwarf hedge plant as well as a good foundation subject. Globe caragana, a determinate sport of Caragana frutex, is a compact rounded shrub which in over fifteen years has not grown to more than three feet in height. Weigelia rosea Dropmore Pink, grown from seed secured from Manchuria, makes it possible with a little care to grow a member of this lovely group in our climate.

Space will not permit the mention of many more shrubs

which can be used for Foundation Planting, but it is hoped that the few mentioned will act as a guide to the home owner who is anxious to start landscaping his property.

Do not overplant and always keep in mind the mature size of the trees or shrubs which you are using.

Weekly Notes

EXPERIMENTAL STATION, MORDEN, MAN.

The ROYAL SHOW of the Royal Agricultural Society of England, now 112 years old, was held this year at Cambridge, July 3, 4, 5 and 6th. The last time this unusual show was held at Cambridge, the home of the renowned University, fifty-three miles northward from London, was in 1922. War conditions prevented shows in 1917, 1918 and 1940 to 1946 inclusive. The site in 1950 was at Oxford.

A Canadian, privileged to attend the first three days of the show, experienced many surprises. An area of 150 acres was packed with Agricultural interest. There was nothing akin to the midway customarily met at fairs in North America. As the show moves about from year to year, there is absence of large substantial buildings. Most of the exhibits are staged under canvas tents, many of them huge in extent. This applies to the very extensive flower show, the livestock entries, the educational exhibits placed by the Ministry of Agriculture, and many industrial displays. Breed societies and some horticultural firms have frame structures of modest size but pleasing designs.

The Royal Show was held at Cambridge for the first time in 1840. It occupied about 5 acres. The livestock entries totalled 337 and the implements, 115. This year was the fourth holding at Cambridge. Nearly 5,000 head of livestock competed for prizes, totalling 20,000 pounds. There were 20 breeds of cattle, 32 of sheep and 10 of pig breeds. A large number of overseas visitors come each year to study and buy foundation stock.

The high light of the show for breeders is the parade of prize-winning pedigree livestock. At one time, the Grand Ring had 500 cattle filling the enclosure. Breeds include the long-horned Highland, Dairy Shorthorns, Ayrshires, British Friesians, Red Polls, the Channel Island breeds, South Devons, Kerries, the tiny Dexter, Herefords, Aberdeen-Angus, Lincoln Reds, Shorthorns, Devons, Sussex and Galloways.

The Grand Ring was first filled with Heavy Horses. These marched out and the ring was refilled with Light Horses. Patrons of the grandstand were entertained by two splendid bands, that of His Majesty's Grenadier Guards and the Metropolitan Mounted Police Central Band. Attractions included awards of special cups, judging of harness horses, Musical Ride by the Metropolitan Mounted Police, Sheep Dog display of tending sheep, the Puckeridge Foxhounds, Parade of Trac-

tors and Agricultural Implements, Jumping Competition of horses from home and abroad, Parade of Pet Ponies, and Activity Ride by Metropolitan Mounted Police.

The Grand Ring measures about 200 by 100 yards. It is the setting for the afternoon parades and special events. The area is also used for judging livestock the first day and in the mornings.

The Show is strictly agricultural and it is reassuring to note that features of farm and garden, without any side-shows, rides or circus tones, in themselves are sufficiently attractive to draw as many as seventy thousand persons per day. Moreover, people are not deterred by the relatively substantial entry fees.

A visitor on the second day pays 20 shillings at the main gate and another 20 shillings for a reserved grandstand seat. He purchases a livestock catalogue and programme for 5 shillings. Admission to the Flower Show is 2/6. Meals and refreshments are secured at dozens of buffets and cafes at moderate prices.

At the end of the day, the stranger realizes he has experienced very great value for his investments. Among the things to view the following units proved impressive.

The Ministry of Agricultural Exhibit of modern farming practice, graphically illustrated with animals, plots of growing crops and model farm equipment. Bulletins and books were on sale.

The Forestry Exhibition presented demonstrations of saw sharpening and setting. There were competitions for gates, and displays of numerous articles made from home-grown timber.

The Flower Show was made up of exhibits staged by 56 commercial firms. There were no competitive classes but Gold and Silver Medals and Cash were awarded to exhibits of special excellence. This visitor considered every exhibit in the two large tents worthy of an award. The freshness and fine quality of blooms, vegetables and fruits, and the art of staging them, were of top order. Prominent were carnations, dianthus, sweet peas, delphinums, roses, astilbes, ferns, peonies, dahlias, gloxinias, orchids, clematis, fuchsias, pelargoniums, scabious, begonias, rock garden and heath plants.

The Forge saw competitions for horse shoeing and other smithing.

The Rural Industries Bureau had demonstrations in making saddlery, hurdles, flower pots and wheels.

The Milk Marketing Board pictorially told the story of

scientific and technical developments on the breeding, handling, transport, manufacturing and distribution sides of milk production.

The National Institute of Agricultural Botany and Plant Breeding Institute with demonstration plots exhibited methods of breeding, testing and propagation of agricultural crops.

The Centenary Exhibit was a museum of machinery and implements in use on farms a hundred years ago. Several of the items were those shown at the Great Exhibition of 1851.

Other enlightening exhibits dealt with bee-keeping, the Ministry of Food, the National Federation of Women's Institutes with demonstrations of quilting, flower packing and floral decoration, and the work of Young Farmers' Clubs.

The Junior Garden

IRENE STUDNEY,
Lord Selkirk School, Winnipeg

A garden is a symbol of work, of pleasure and of satisfaction. It requires careful planning and continued effort. Little Johnny found this to be true. Early in the season he was out in the garden, digging the soil and measuring the required length and width for his plot. Using the pointed edge of his hoe he ran a line around the measured garden plot. Next he planned how to sow his flower seeds and vegetable seeds so that the plants would be in the proper relationship to each other. He decided to have two rows of marigolds on the opposite sides of the plot. A row of bachelor's buttons at each end completed the border. Then he figured out how many rows of vegetables he should have, and the space needed between them. Finally, he settled on three rows of carrots, two rows of beans, two rows of beets and three more rows of carrots.

After the seeds were planted Johnny watered his garden every day, pulled out the weeds, and cultivated between the rows. At the beginning of August Miss Matchett came to see how his garden was progressing, and to give him some pointers on how to improve its appearance. Then Mr. R. Jack visited all the gardens to pick out the best gardens for the final judging by the committee in charge of annual Waugh Shield Children's Garden Competition.

Johnny was repaid for his careful cultivation of his garden plot, for his was one of the gardens chosen for the final judging. A week later the judges came, and in a short while he learned that he was to receive the gold medal for having the best garden plot in the Greater Winnipeg 1951 Competition. His high mark of 95 also helped his team of twelve to win the Waugh Shield.

Note: Johnny is actually my brother, Donald Studney. I am pleased to write this short account of his garden, because I, too, have been a successful contestant, and found the experience to be most rewarding.

Hints for Exhibitors

JOHN A. ORMISTON

RULES

READ THE ENTRY RULES, AND FOLLOW THEM EXACTLY. There is just no point in growing and exhibiting a beautiful lot of flowers and then find that due to an error they are not entered in the proper class, or are disqualified for some other reason.

The judges are not allowed to vary the rules in any way. If the rule book says a class calls for Six blooms, it means Six blooms not Five or Seven. As a judge, I do not know of anything more disappointing than having to disqualify an entry, often the best in a group, simply because someone did not follow the rules. But, it happens at nearly every flower show.

It is your responsibility to see that your exhibit is correctly entered. The judge just cannot fix it, if it is not right.

BUGS

Be sure that your entry is free of insects and not showing signs of insect damage. The judge, particularly if he is a commercial grower, is sure to take a very dim view of GLADIOLI that show trip damage, or DAHLIAS, that are loaded with green fly, just to mention a couple of items that I saw in two different flower shows this Fall. Worse than insects on cut flower entries, insect infested house plants are sometimes entered in pot plant competition. This is to say the least of it unfair. I remember once seeing a FUCHSIA plant entered in a flower show, it was a beautiful plant, but it had enough white fly on it to infect every plant in the hall. I disqualified the plant, on account of the bugs, but the owner of it was not pleased. That was years ago, but I can still hear the Lady's candid comments about judges who were too fussy.

ARRANGEMENTS

In making up your basket or other arrangements, the important thing to remember is not to overcrowd them. Most baskets entered for competition have far too much stock in them.

First, use a type of basket suited to the flowers you are using. Be sure that the container is watertight. (Flowers in a leaking container usually look pretty sorry for themselves by the time the judges get around.) Select your finest blooms, do not worry too much if the stems are not all straight, a bent

or crooked stem is often just what you need in your arrangement. Remember that the Extra greens and foliages are to be used to set off your flowers, not to hide them.

One of America's most prominent florists tells this story. A customer asked him for advice on making up a basket for a garden club competition. He gave her two sealed envelopes marked One and Two, told her to go home and make up the basket; when she was satisfied with it, to open envelope marked No. 1. The message inside simply said, "Discard one half of your flowers and rearrange your basket, then open envelope No. 2." The message in No. 2 envelope was exactly the same as in No. 1. The lady followed instructions and won the prize.

Maybe you do not crowd your flowers as badly, but next time you are making up a basket — just think of that story.

Provincial Honey Show

A Provincial Honey Show was held for the first time in conjunction with the annual Provincial Fruit Show. It proved to be a very successful event both from the standpoint of the beekeepers and the spectators. Twenty-five entries were made in the competitions and although this number is not large, it is a good start for something new.

Mrs. Annie E. Cairns, Clearwater, won the Clovercrest Rose Bowl, donated by the Manitoba Co-operative Honey Producers Limited for first prize in the granulated honey class, and Paul Uhrin, Pine Creek, won the C. T. Loewen Rose Bowl, donated by C. T. Loewen and Sons Limited, Steinbach, for the first prize in the liquid honey class.

In addition to the entries of the beekeepers which were arranged in the form of a display, the Manitoba Co-operative Honey Producers Limited put up a very attractive and educational display showing how honey is handled from the beehive to the consumer.

Provincial Fruit Show

The Provincial Fruit Show 1951 was sponsored by the Winnipeg Horticultural Society, and held in conjunction with the Winnipeg Show. In view of the fact that considerable damage resulted to fruit trees from the winter weather, entries were much heavier than in the 1950 Show, at least in some classes. Entries in PLUM and SANDCHERRY PLUM HYBRID classes were light, as were also entries in GRAPES and NUTS.

Entries in CRABAPPLE and APPLE classes, in both open and closed sections were heavy, running in some cases as high as twenty-two. Quality in all entries was particularly good.

Judging was done by Mr. B. R. Wilkinson, of the Dominion Experimental Station, Morden; Professor E. T. Andersen, University of Manitoba; and Professor F. W. Brodrick, Winnipeg, assisted by Mr. W. A. Cumming, President of the Manitoba Horticultural Association.

Special displays were staged by the Dominion Experimental Station at Morden and by the Morden Horticultural Society. These displays were both of a particularly high calibre and did much to improve the Show. The naming of varieties is always a particularly good educational feature which assists home owners and gardeners to see and identify varieties which are hardy and worthy of cultivation.

A number of special championship trophies were won by exhibitors including the following: The T. Eaton trophy for the highest number of points in the Show — R. Marshall, Roseisle; Dominion Bank trophy for the best plate of true Plums — J. H. Enns, Morden; Royal Bank trophy for best plate of Crabapples — McB. Dudgeon, Morden; C.K.R.C. trophy for best plate of seedling fruit — A. Barkley, Morden. Many other prizes of cash, nursery stock and agricultural products were awarded.

It was indeed a pleasure to have His Honour R. F. McWilliams, Lieutenant-Governor of Manitoba, and Mrs McWilliams at the opening of the Show. His Honour officially opened the Show in his usually capable manner.

As one wondered around through the exhibits, the remark heard most often was "I never knew that fruit like this could be grown in Manitoba." There is room on every home lot, no matter how small, for fruit growing. It is hoped that home owners will take advantage of the information gained from the Fruit Show in the selection and planting of suitable varieties of home fruits.

The Directors of the Manitoba Horticultural Association and the members of the Fruit Show Committe, are deeply appreciative of the excellent co-operation and assistance given by the members of the Winnipeg Horticultural Society. Present plans are to have the 1952 Show at Dauphin, Manitoba.

Report of Home Ground Committee — 1951

The winners in the various competitions handled by this committee are as follows:

Rock Gardens, Class A	— Mr. R. C. PRAGNELL
Rock Gardens, Class B:	— Mr. T. YAGER
Home Grounds up to 33 ft. frontage	— Mrs. W. GYLES
Home Grounds, 34 to 36 ft. frontage	— Mrs. M. HARDING
Home Grounds over 66 ft. frontage	— Mr. J. K. MAY
Novice Home Grounds	— Mrs. J. SLIPETZ
Utility Garden	— Mr. Wm. A. EDMONDS
Flower Garden	— Mrs. M. HARDING
Window Boxes	— Mrs. T. McKEOWN
Lawns	— Mrs. M. HARDING
Vegetable Garden, First Year	— Mr. R. N. McLEAN
Vegetable Garden up to 25 ft.	— Mr. A. H. SOUTHBY
Vegetable Garden, 25 to 50 ft.	— Mr. Isidore MERCIER
Vegetable Garden over 50 ft.	— Mr. R. SMYTH

The cup for the highest aggregate number of points in all competitions was won by Mr. D. E. WALKER.

Mrs. W. W. Gyles and Mrs. M. Harding, having won their home grounds competitions in 1949 and 1951 (no competitions in 1950), are entitled to miniature trophies and are also barred from competing in these classes for two years.

Your Committee thanks the following gentlement who judged our competitions: Messrs. E. F. BALL, R. W. BROWN, GRANT CHURCHER, R. H. HIKIDA, T. E. HOWARD, R. SKELDING and F. J. WEIR.

The following business firms kindly donated prizes: Winnipeg Free Press, Winnipeg Tribune, Winnipeg Supply and Fuel, Swift Canadian Company, Burns and Company, Dixon's Plant Food, Steele Briggs Seed Company, Taintor Twomey Seeds, W. Atlee Burpee Company, McConnell Nursery Company, Morden Nurseries, Prairie Nurseries Limited, Skinner's Nurseries Limited, Sadok Nurseries, and Wallace Nurseries Limited.

The competitions were keenly contested and entries in all classes were satisfactory.

Respectfully submitted,

HECTOR MACDONALD,

Chairman, Home Grounds Committee.

Annual Flower, Vegetable & Fruit Show

Wm. J. TANNER

The annual Flower and Vegetable Show was held in The Civic Caledonian Curling Club Rink on August 30th and 31st., 1951. This year's show was held in conjunction with the Manitoba Horticultural Association's Fruit Show, and also the Manitoba Beekeepers Association Provincial Honey Show. On account of this, an effort was made to hold the Show in the Civic Auditorium, and while the City of Winnipeg offered us valuable assistance, your Directors felt that the cost of the Auditorium was beyond our means. By careful utilization of every inch of space in the Civic Caledonian, the combined shows were successfully staged. Some changes were made in the prize lists with the hope of improving the show, and other suggestions have been noted for the consideration of The Flower Show Committee of 1952.

The Show this year was one of the most successful ever staged by your Society. Entries in the Flower and Vegetable Sections totalled 1,100, an increase of 429 over last year. Entry Fees amounted to $97.60 and prizes amounted to $532.60. Prizes in the Fruit Section totalled $156.50; rent of rink, printing, cartage, and other expenses amounted to $532.37, making the total cost of the Show, $1,221.47.

His Honour the Lieutenant-Governor of Manitoba, Mr. R. F. McWilliams, very kindly attended and officially opened the Show on Thursday evening at 8 p.m. Mrs McWilliams was also present and was presented with a bouquet of roses.

The attendance this year was the largest for many years. This, your Directors felt, was due to the kind co-operation received from the local Press, and also from advertising in over 500 streetcars and busses.

Judges for the Flower Section were: Mr. H. F. Harp, Morden, Professor C. W. Lowe, Vancouver, Mr. J. A. Ormiston, Mr. T. E. Babb, and Mrs. B. Shortt, of Winnipeg; Vegetables, Mr. Krass DeJong. We are greatly indebted to them, they had a difficult task and performed it well. Our thanks also to all those who so ably assisted the judges.

We are once more deeply indebted to The T. Eaton Co. for the loan of tables and flags, and also to the University of Manitoba for the loan of tables. Our sincere thanks to the Winnipeg Public Parks Board for a very fine no-competitive display of cut flowers. These flowers, and all others not taken

away by the exhibitors, were distributed between the Winnipeg General and the Children's Hospitals.

I would like to take this opportunity to express my sincere thanks to all members of the Flower Show Committee and to all Directors and others, for their willing help and co-operation. My thanks also to our secretary, Mr. R. W. Brown, and all those who assisted him writing out entry tags, etc.

Congratulations to all those who won prizes in the show, and to those who didn't, might I suggest, "Keep trying." It is only by your combined efforts that success can be obtained. Keep up the good work and may your efforts be crowned with success next year. Let us make next year's Show, Bigger and Better than ever.

Dr. H. M. Speechly

Prof. F. W. BRODRICK

I have been requested to prepare a brief note on the services rendered to horticulture in Manitoba by one whom I knew for many years and one whose friendship I have deeply appreciated. It might be further added that this friendship extending over nearly a half century ripened into feelings of mutual understanding and respect.

Dr. Speechly was born in Cochin, India, and spent the earlier years of his life in England where he was educated and where he received his professional training. During his student days, he was associated with Dr. Wilfred Grenfell, of Labrador. The friendship formed at this time continued throughout their lives.

Dr. Speechly came to Manitoba from the Old Land in the early years after the present century. Shortly after his arrival he moved to the village of Pilot Mound, in Southern Manitoba. At this later place he developed an interesting garden where he grew for trial plants which he had collected from various sources. His interests centred largely around the hardier herbaceous perennials.

I distinctly recall the interest displayed when on one of the earliest visits to his garden he displayed to me the beautiful rose purple blooms of a plant he had introduced. This goes under the name of Incarvillea Delavayi, a plant introduced from China. The generic name is after Incarville, a French missionary to China, and the specific name after Delevayi, the Abbe who collected in China. As a result of his observations, he contributed notes to the Press on the plants which he grew. He also prepared papers which were presented to horticultural societies' meetings and to other gatherings.

His interests in organized horticulture found expression in his election as President of the Manitoba Horticultural Association. Through this Association he was instrumental in introducing a motion to set up within the Association a board known as the Stevenson Memorial Board. This Board established a fund from the revenues of which a gold medal was to be awarded from time to time for outstanding services rendered to Manitoba horticulture. The services particularly recognized were for the production of valuable new varieties of horticultural plants or the betterment of established horticultural varieties. This medal to be known as the Stevenson Memorial Medal. Six awards have already been made to those

who have contributed to horticultural advancement in this Province.

The Manitoba Horticultural Association very early established the practice of recognizing outstanding service by granting Honorary Life Membership in the Association.

Dr. Speechly was one of the early members to whom this award was made. His sustained interest in the welfare of the Association was demonstrated by his attendance annually at the annual meetings.

As a further mark of appreciation for services rendered to horticulture in the City of Winnipeg, he was granted honorary life membership in the Winnipeg Horticultural Society.

Man's interest and influences do live after him. Dr Dr. Speechly will long be remembered as one who had a very definite interest in the betterment of home surroundings both urban and rural in the Province of Manitoba. He gave of his abilities and time to the betterment of Prairie horticulture and to the attainment of this ideal.

Mighty Mites Disappear In The Wake Of A New Insecticide

By D. FRASER

The greenhouse red spider mite ranks among the half-dozen worst plant pests in the country. There are very few plants grown in greenhouses which are not subject to injury by red spiders. Unfortunately these red spiders quite frequently infest house plants. Leaves of plants infested by red spiders present a peculiar appearance. Those lightly infested have pale blotches or spots showing through the leaf. In heavy infestation the entire leaf appears light in color, dries up, often turning reddish brown in blotches or around the edge. Plants generally lose their vigor and die. The under surface of lightly infested leaves will show silken threads running across them. In heavy infestation these threads form a web over the entire plant upon which the mites crawl and to which they fasten their eggs. On close examination, reddish, greenish, yellowish and blackish moving dots may be seen on the underside of the leaves. The color of the mites appears to vary in part with the kind of food.

The adult female is only about 1/60 of an inch in length whereas the male is even smaller, measuring about 1/80 of an inch long. These, to be seen, should be examined under a magnifying glass. It will be noted that two dark spots composed of food contents show through the transparent body wall of both the male and female mites. Bodies are oval in outline and are sparsely covered with spines. The mites feed through sucking mouth parts with which they pierce the epidermis or outer skin of the leaf. A complete generation is produced every twenty to forty days, and during their lifetime a female will lay 70 or more eggs. Generations overlap so that all stages of the mites are frequently found in the greenhouse or on infested plants at any time.

One of the time honored control measures for this insect is to syringe or spray the plants frequently with a stream of clear water applied with sufficient force to tear up the webs of the mites and knock them from the plant. This treatment cannot, however, be applied to many species of house plants, which are injured by frequent watering or develop disease if actually treated with water at all. The use of highly poisonous insecticides has been quite effective and this method has been used rather widely in greenhouses which can be completely closed or shut off for a limited period of time.

Within recent years a newly developed chemical called

Aramite has appeared. Aramite has the double advantage of killing mites without being toxic to humans or animals. The only other insecticides known to kill mites are toxic to humans.

Aramite also works well against mites on outside planting and in the Winnipeg area Evergreens, Hydrangeas, Roses and Clematis quite frequently suffer very severely from mite infestation.

Aramite is purchased as a 15 percent wettable powder. This wettable powder is added to water and sprayed through a coarse nozzle to the infested plants. Although Aramite usually persists for up to thirty or more days, it is suggested that two applications be made at about two week intervals.

The chemist calls Aramite beta-chloroethyl-beta-(p. tertiary butyl phenoxy)-alpha methyl ethyl sulphite.

Horticultural Society Committees

R. W. BROWN

A society having been constituted according to the provisions as set forth in The Horticultural Society Act, it is adviseable that the work of the society, through its directors, be organized in such a way as to get the best results from its activities. This will depend largely on the ability and initiative of the personnel comprising the directorate, which should include members of executive ability with two or three with technical knowledge, if available.

As the objetc of the society is to encourage improvement in horticulture, it is desirable that a definite plan of work be evolved and the various phases allotted to different committees which might be as follows.

Membership — As the amount of work accomplished will depend largely on the strength of the society, this committee would be responsible for building up the membership.

Program — This committee would be responsible for arrangement of meetings for hearing lectures on subjects connected with horticulture and discussions and for any other meetings such as picnics, etc.

Home Grounds — If this committee functions properly, it will have a lot of work. It will be responsible for arranging for garden competitions including home grounds and all the different phases, such as lawns, flower borders, window boxes, vegetable gardens and in some sections boulevards. It will also have to provide the prizes and look after the judging.

Flower Show — It is very important that a society hold an annual exhibition of flowers, vegetables and fruit and this requires a strong committee as a lot of work is involved. The committee will be responsible for compiling the prize list, staging the show, arranging for judges and distributing the prizes.

Publicity — It is important that the work and accomplishments of a society be made known to the residents of the district through the press or otherwise and this committee might also arrange for the distribution of horticultural pamphlets among the members. A number of these may be obtained from the Extension Department of the University of Manitoba. (Division of Plant Science)

Nominating — This committee should be appointed by the directors before the annual meeting to contact members whom they think would be desirable directors and submit their names to the annual meeting.

These suggestions are intended for societies which have been recently organized or are being organized, not for the older and well organized societies.

Manitoba Gardens

By F. J. WEIR, Provincial Horticulturist

As a newcomer to Manitoba, I was first impressed, on the way to Winnipeg by train, by the deep black soil in evidence on both sides of the railway line east of the city. Accustomed to the grey or grey-brown, rather shallow soil found in most parts of Ontario, to me the horticultural and agricultural possibilities of such a soil loom large. I have often wondered if those Manitoba people, living in areas where the soil is so dark and deep, appreciate what they have. Sometimes the facts are learned more forcibly when they are heard miles from home. Not long ago, some of the local market gardeners, attending a convention in the United States, were told that the vegetables having the best flavor and quality were those grown in the Red River Valley in Manitoba. This came from growers in the specialized truck farming areas in the United States.

There is little doubt that these growers were right. It is fairly common knowledge that the farther north any plants can be grown successfully, the better quality and flavor they have. Here in Manitoba, where the frost-free period is short, growth is so fast that maximum quality does result. When an excellent type of soil for vegetables is coupled with a favorable location, and weather, the combination leaves little to be desired. Of course, dry weather is not unknown to Manitoba, but a great amount of work has been done by the research men in introducing varieties which are more drought resistant.

They are also doing an excellent job with varieties maturing earlier to miss the first late summer frosts.

However, there is much yet that can be done by the individual. In driving through the province, the traveller is impressed by the number of farms having shelterbelts. Many of these were planted by farmers who migrated to the province from more-treed areas in Canada. Everyone must realize by now that "trees will grow on the prairie". And yet we still see farmsteads with no protective plantings. I have seen rural school yards in Manitoba with no tree shelter, where the out-houses had to be wired to the ground to prevent them being carried away by the wind.

Of course, there is always another side to the question. Planting a shelterbelt does take a bit of work for a few years until it is established, but after the first eight or ten years, the beneficial results of more moisture, wind protection, less

soil drifting, and the greater varieties of crops for culture, soon mount up. Added to this, is the more "at-home" feeling on the land realized when the farmstead is linked to the soil by the trees supplying the protection.

One of the shrubs most used in shelterbelt plantings is a comparatively new one to me—Caragana. It is an especially fine one when used in a shelterbelt, particularly in the drier areas. I do think that it is, however, a mistake to use it as a specimen shrub or for hedge purposes on a town or city lot. Its roots are aggressive and other plantings near it suffer. If used in town or city, it requires trimming, and usually trimming twice a year. There are shrubs which can be planted which require much less clipping and which are not such competitors for food and moisture as the common Caragana.

Caragana, of course, will not endure "wet feet". The disastrous flood of 1950 proved that quite conclusively. Where any portion of a snow-trap planting of it was under water for any length of time, the shrubs died. In areas where drainage is not satisfactory and where Caragana is not happy, the willows make very attractive and satisfactory substitutes. There are several varieties which are strikingly beautiful, and many of them add color to the winter landscape when colors are at a premium.

Evergreen material is another type of tree which could be used considerably more. Most of the shelterbelts planted today include rows of Colorado Spruce. This is a kingly tree, beautiful, fast-growing and is well suited to most areas in the province. It will tolerate alkali soil conditions much better than the Black or White varieties. It is a fairly shallow-rooted tree and so will do much better in areas where the layer of top-soil is inclined to be shallow.

Where the soil is shallow and gardeners do have troubles in fighting drought, it is rather interesting to reflect on the three different categories of dry-land gardeners. The first type is the devil-may-care one, who does not worry if the dry weather does ruin his garden. The second type is the fussy individual, who feels he must water the lawn and garden every night and does so. The third, and, of course, best gardener, realizing that light frequent sprinklings cause more shallow root development and consequently more damage to the roots when drought does strike, soaks his garden thoroughly once a week. These types are not common to Manitoba alone, but can be found anywhere gardening is done.

One excellent practice I have seen in home gardens in Manitoba, is that of watering individual plants by the "tin-can" method. Several nail holes are punched in the bottom of a used fruit juice tin. Holes are dug a few inches away from

the plant, depending on its size, and water is poured into the tins regularly. In this way, the moisture has a better chance of getting close to the roots and there is much less evaporation.

Another practice, which seems to be on the increase, too, is that of using mulches to conserve moisture, and help keep down the weeds. Most gardeners keep a compost pile. In many cases, those lawn-clippings, weeds or vegetable parings will do more effective work when used as a mulch then left to rot in a corner of the yard. I know a nurseryman in Ontario who obtains a truck load of spent hops from a local brewery each year and uses them for a mulch. He has noticed a tremendous difference in growth and health in a plot of evergreens so treated. To most mulches, if put on to any depth, some commercial fertilizer high in nitrogen should also be added. When organic mulches break down, nitrogen is used up. If there is not a sufficient supply available in the soil the growing plants may suffer. A little nitrogen fertilizer scattered over the mulch will overcome this difficulty.

One soil treatment, I feel, which most gardeners in Manitoba should practice to a greater extent, is the use of acid peat. Most of the agricultural soils in the province are inclined to be high in lime or alkali. The use of acid peat, when mixed with soil, or used as a mulch, will minimize the troubles arising from an excess of alkali in the soil. In addition, being very absorptive, peat will retain moisture in the soil, releasing it to the plants when needed. It also provides organic matter.

One question which keeps cropping up periodically is that of shrub and fruit tree hardiness. Many gardeners ask why shrubs which they bought in Ontario or British Columbia do not survive, although they are the same varieties as are grown in Manitoba. I think the reason is largely due to a difference in the climate and soil, but more particularly soil. In many parts of Ontario the soil is either neutral or slightly acid in reaction. If shrubs which have been accustomed to such soil conditions are planted in a soil which is alkali or high in lime, they cannot expect to develop in a healthy manner. It is quite understandable that the closer one can approximate the natural or native habitat and culture of a plant, the more satisfactory its growth will be.

There is another group of growers in Manitoba which is providing home gardeners and commercial growers with good potato seed. Many potato growers, both those growing for home use only and those growing table stock potatoes for the market, do not realize the importance of using certified seed. Usually the difference in price between certified seed and stock table potatoes is slight, and yet the need for clean, disease-free seed is of great importance. All the seed growers are located in areas in the province where potatoes are grown

most successfully. In some cases, this cannot be said for our growers of commercial potatoes. Too large a percentage of the potatoes appearing on the markets for consumption are grown in the Red River Valley area. This may sound contradictory to what was said earlier about the quality and flavor of vegetables grown in the same location. However, the soil prevalent in the Red River Valley, particularly in the vicinity of Winnipeg, is not suited to potatoes. The soil is too heavy, and potatoes become rough, knobby and irregular. In addition, if the digging season is a wet one, considerable difficulty is encountered in harvesting clean potatoes. I would like to see the growing of all the potatoes for the Manitoba market, both for local and export purposes, restricted to the Birds Hill, Swan Lake, Interlake, Portage-Carman-Winkler, and the Sprague areas. In each of these areas the soil is lighter and the potatoes are more uniform and regular, of better quality, and easier to harvest.

In travelling over the province, one is impressed with the number of ornamental farm gardens which are planted with a more permanent type of plant material, trees, shrubs and perennials. As well as being attractive for longer periods (often throughout the whole year), they give a better picture of informality and naturalness than is found in their sister lots in town. In many of our town lots, we depend to great an extent on the use of annuals. Annuals are very attractive and have a definite place in the garden, but that place should be as a filler-in in the perennial or shrub border—when there is a lull in interest in some part of the season.

I would feel that I were doing Manitoba gardeners an injustice if I failed to mention the owners of a few of the outstanding home gardens visited in 1950 and 1951. I realize that there are a great many more, but these are a few of the ones seen in the past two summers. Mr. G. MacVicar, of Portage la Prairie, had an outstanding flower garden in 1950. His whole garden was a riot of color, but well-planned and well-grown. Also, in the Portage area, Mr. C. Greenslades has made quite a contribution to the traveller by providing an attractive flower garden of trees, shrubs and perennials on the north side of No. 1 highway east of the city.

Two ardent gardeners at Treesbank are worthy of note. Mr. Vane specializes in roses, and Mr. S. Criddle has a wonderful garden of flowers, shrubs and trees. At Westbourne, Mr. D. Patterson has undertaken a very worthy project. Not content with having a beautiful home grounds, well planted with ornamental shrubs and trees, he has also landscaped a picnic area which he has opened up to the public. In these grounds can be found swings and slides for the kiddies, game areas, swimming facilities and barbecues.

Much farther north, at Gilbert Plains, Mr. and Mrs. C. Robertson have developed a farm flower garden which is a treat to see. The garden is laid out very tastefully into formal beds which provide a blaze of color throughout the season. Visitors from points far south in the United States call in to view the Robertson's garden.

And lastly, if any of my readers ever travel up near Hamiota, I would suggest they go a little farther to Isabella, and that they call in on Mr. and Mrs. L. Hall (or Mr. and Mrs. F. Hall) who live on a farm there. The Halls' garden is the finest farm flower garden I have ever seen. Stretching up from the road on either side of the lane, are groups of trees, shrubs and perennials which are interesting throughout the year. The Halls' are enthusiastic gardeners—in fact are so enthusiastic that Mr. and Mrs. Hall, Sr., go out to the coast in the winter so that they can garden out there in that season as well. Their garden at Isabella, although a collection of many, many shrubs and trees, is so well arranged that it is a complete picture. Here it is not a case of a couple having four "green thumbs", but rather a case of them having four "green thumbs" and sixteen "green fingers".

The Vegetable Garden

H. ROBERT HIKIDA

Gardening is an art and must be learned as other arts are learned—by practice and experience. This is best achieved by following the practices of someone who has already acquired the necessary skills and judgment. This does not mean that the basic principles involved in gardening should be disregarded or forgotten. Such prerequisites are made readily available to gardening enthusiasts in forms of bulletins, articles in gardening magazines, booklets, and gardening books.

A city backyard or vacant lot garden can often supply an important proportion of fresh vegetables a family needs. Sometimes it can furnish a surplus for storing, canning, quick-freezing, or drying. This depends on how much good land is available and how well the garden has been managed. A well-handled home vegetable garden, in a suitable place, should consistently yield produce having a money value considerably greater than the cost of seeds, fertilizer, manure, chemicals for insect and disease control, and the tools needed for the garden. The health values of the produce and of the outdoor exercise are often not accounted. Furthermore, vegetables from one's own garden can be harvested at the right time and used promptly when they have the highest quality and food value. The home gardener appreciates the superior quality of truly fresh vegetables and takes particular pride in having grown the crops. The profit motive should not be overlooked during these days of high costs of living.

Location of the Garden

The home garden should be located as near the house as possible. This will save the housewife many steps in bringing in the vegetables. Nearness is an important factor in utilizing the spare moments for gardening. The garden should be located away from shades of trees, fences or buildings as most garden plants require the maximum amount of sunshine for healthy vigorous development. Availability of water is another important factor during times of drought. If possible the area should be level or on a slight slope toward the south. Windbreaks, hedges, fences or buildings on the north will increase the earliness of the crops.

The Soil

The plants obtain their nutrients from the soil. Therefore it is important that there be plant food available in quantity in the soil. The main chemicals that are required in abundance

are nitrogen, phosphorus, and potash. A heavy feeding of nitrogen leads to luscious foliage development and retards fruiting and root development. Phosphorus and potash aid in flowering, root formation, and hastening maturity. Leafy crops such as spinach, swiss chard, and lettuce need an abundant supply of nitrogen. Root crops and fruiting vegetables such as carrots and tomatoes require a lesser amount of nitrogen and a higher proportion of phophorus and potash.

Roots must be surrounded by free moisture and air. Therefore a light loam soil is preferred to heavy clay soils. The heavy soils may be lightened readily by a liberal application of leaf mold, manures, or peat moss. All of these supplements have some fertilizer value.

Preparation of the Soil

Fall is the time to plough or fork over the soil—especially the heavy clay soils. Manures, leaf mold, or peat moss may be applied at this time over the area before the digging operations begin. The action of the frost will break down the soil lumps into fine particles. Only a light raking will be necessary before seeding in the spring. Earlier seeding is possible by following this practice.

Garden Planning

A definite plan of the garden some time before planting begins can avoid much loss of time and effort. The location of perennial crops, such as asparagus and rhubarb, small fruits, perennial flowers and shrubs should be provided for in the plan. These should be located so as not to interfere with ploughing or preparing the soil.

Good garden planning can provide a maximum of crop from the minimum of available space. Early crops and quick maturing crops may be planted close to late maturing crops. Thus radishes, lettuce, and spinach may be planted close to or in the same row as cucumbers, cabbages, tomatoes, or corn. After the early crop has been harvested the later crop will continue to maturity. Such full use of the land requires special attention to the availability of nutrients and moisture in the soil to the plants.

Time of Planting

In order to derive full benefit, each crop should be sown as early as possible. As soon as heavy frosts are over and the ground can be worked, peas, onions, radishes, lettuce, spinach, and parsnips should be planted. Later when frosts are over and the weather is somewhat settled, carrots, beets, sweet corn should be planted and cabbages and cauliflower plants set out. When all frost danger is past and air and soil temperatures are warm and settled, beans, pumpkins, squashes, cucumbers, and melons should be planted and tomatoes, celery,

eggplants and peppers set out. After some of the early crops have been harvested a midsummer planting of carrots, beets, spinach, rutabagas, lettuce, and radishes may prove worthwhile.

Seeding

Seeds should be sown deeper in sandy soils and shallower in heavy soils. A good rule is to sow seeds to a depth of three to four times the diameter of the seed. The soil should be packed lightly so that the seeds will be in contact with the soil and moisture, thus ensuring early germination.

Transplanting

Early crops and larger yields may be obtained by transplanting such crops as cabbages, cauliflowers, tomatoes, peppers, eggplants, and celery. Certain precautions are necessary in order to ensure success in setting out these plants. The plants in the flats should be well watered before transplanting and always taken with the maximum amount of soil with the roots. Pressing the soil firmly around the roots and watering are factors in successful transplanting. Protecting the plants for a day from the strong sun and wind will help the plants to become established.

Thinning

Failure to thin out plants crowding each other is frequently the cause of failure with vegetables. The first thinning should be done as soon as the plants are large enough to pull. A second thinning may be done when the plants are a bit larger and the vigor of the plants become evident. The spacing between the plants should be as uniform as possible.

Cultivation

Cultivation should be such that all weeds are kept under control and the top one-half inch of the soil surface be in a loose friable condition. Since weeds compete with the crops for moisture and nutrients, weed control is very important. A surface soil mulch helps retain soil moisture. Deeper cultivation will often damage the fine feeding roots, thus cutting off the supply of nutrients and moisture to the plants.

Storing Vegetables for Winter Use

There are many vegetables which are well adapted to winter storage. Among the most popular ones are potatoes, carrots, beets, parsnips, turnips, onions, cabbages, and squashes. If properly stored, all of these will retain most of their delicious flavor for some time.

Root crops such as potatoes, carrots, beets, parsnips, and turnips, and cabbages keep well in a cool (33-36°F.) moist location. Small closets which will provide these conditions may be quite easily set off in a basement. Onions keep better

in a cool, dry location, while squashes do better in a warmer and dry place. These conditions may be readily established in a home basement.

Some Important Don'ts

DON'T try to grow vegetables on a lot that is: Too poor to make a good growth of weeds or grass; made up mostly of rubble or subsoil "fill"; contaminated with coal, chemical, or oil-product wastes; located so that it receives much surface water from above; so wet that it grows weeds common to poorly drained spots; shaded by large trees more than a few hours a day.

DON'T cultivate soil that is too wet.

DON'T apply any lime.

DON'T plant seeds, roots, or tubers too deeply.

DON'T sow seeds too thickly.

DON'T cultivate deeply enough to injure the shallow roots of the vegetables.

DON'T let the weeds get big before you try to destroy them.

DON'T apply water in numerous light sprinklings, but water thoroughly about once a week if rainfall is deficient.

DON'T let the insects damage your crops.

DON'T let the vegetables become too old before harvesting them, thereby losing high quality.

"Learn to Do by Doing"

GLENN McLEOD
Oakbank Garden Club

"Learn to Do by Doing" is the motto of some 8,500 rural Manitoba boys and girls, members in 1950 of 627 clubs scattered throughout the province. Manitoba's 4-H clubs, on a pattern similar to the American 4-H clubs, include Sewing and Food Clubs for girls, Potato, Swine, Calf, Tractor and Garden Clubs for boys and girls.

Manitoba's 4-H clubs are supervised by the Extension Service, Manitoba Department of Agriculture, and organized by the local Agricultural Representatives, who select club leaders to assist in the program.

In 1951 there were 94 Garden Clubs in Manitoba and a total membership of 1,058. By applying the motto "Learn to Do by Doing" in the Garden Club program, we hope to learn something about gardening, how to conduct meetings, and how to become better citizens.

In our own Garden Club, perhaps the first thing we learned was the correct method of running a meeting. We learned how to get the greatest benefit from our meetings, held once a month. Our reference text on gardening is a small book, "Garden Club Study Material", published by the Extension Service, Manitoba Department of Agriculture. This handbook sets out a program for three years. Various aspects of gardening are considered, such as garden planning, garden soil, seeding, control of diseases and insects, harvesting, storage and preparation of vegetables for exhibition. The material is graded, so that the program for second and third years is more advanced, with topics such as "construction and uses of hot beds".

Garden Club members must be between the ages of ten and twenty, and each member must plant his own plot, and according to the plan supplied. Each member must also look after his own plot, its cultivation, control of pests, and harvesting.

At our local club meetings we study the various lessons, assisted by the club leader. Of course, our meetings are not all work. We have to have some means of raising money for prizes and other expenses. Some time is spent in making plans to raise money. In our club most of our money has come from

prizes won at fairs and exhibitions where we had displays. Other clubs raise money by having concerts or social evenings. The Provincial Department of Agriculture each year donates 50% of the prize money awarded at the fair up to a maximum of $5.00 per club.

This "achievement day" or "fair" is one of the most important events of the club year. It is here that each member exhibits his vegetables and competes against other members. In some parts of the province, where there are several clubs in one area, club displays are also in competition. Our entries are judged usually by a representative from the Department of Agriculture, who also gives a few comments on the quality of the vegetable entries and on how their appearance could be improved.

The greatest thrill in club work, at least for me, was to be selected, along with another member of our club, to represent Manitoba Garden Clubs at "National Club Week" in Toronto in connection with the Royal Winter Fair. This amounted to a free trip to Toronto for seven teams of two members, from each province, representing the various projects undertaken across the Dominion. Semi-final eliminations were held at Portage la Prairie in July. The three successful teams in each project again competed in Winnipeg early in October. My partner and I were successful in winning this competition also, and thus the honor of representing Manitoba in the Dominion finals. After the Winnipeg contest, work soon began in earnest.

For a week before we left for Toronto, we were coached in Garden Club work. We had many vegetable judging classes in which we had to judge plates of vegetables, and then give reasons for our placings. We listened to many lectures on vegetable culture and garden planning. While in the city we stayed at the Y.M.C.A. as guests of the Manitoba Department of Agriculture. On the Thursday night all Manitoba teams, and members of the Extension Service, were given a banquet by Line Elevators Farm Service.

Finally, the night arrived for us to entrain for Toronto. At the station we met many of the club members from the other western provinces on their way east. Our trip down was an interesting but uneventful one, with plenty of sing-songs and games.

While in Toronto, we stayed at the Royal York Hotel, the largest hotel in the British Empire. Our trip east, however, was not limited to Toronto, or to the Royal Winter Fair. After our judging contests were over we had a chance to see the Fair itself, with its many entries of prize livestock, poultry, grain and garden produce. The flower show was outstanding.

We also saw the "Ice Capades" in the famous Maple Leaf Gardens. We met such distinguished men as John Fisher and Foster Hewitt. We were taken to Hamilton, to Niagara Falls, to Ottawa. In Ottawa, we had the honor of meeting the Governor-General and Lady Alexander. In fact, we spent a week so full of banquets, luncheons, and other activities, that when we got back, we found it difficult to remember everything we had experienced.

I feel that our free trip to the Royal Winter Fair has been, and will be, one of the greatest experiences of my life. However, I realize that had I not been a member of a Junior Club, I probably would never had had a similar opportunity to see another part of the country. I doubt that I will take up gardening as a profession, but my experiences in garden club work have given me an interest in gardening which will always remain with me.

Flower Borders

GRANT CHURCHER,
Chief Gardener, Legislative Grounds.

Flower borders generally are the easiest and most likely to please of any form of home grounds improvements. A good mixed border is a colorful living achievement from early spring until hard frosts blight the last of the perennial asters.

A good border is composed of a selection of perennials, annuals, bulbs, with the addition of a few small shrubs, or evergreens to lend a feeling of beauty to the area.

Most city lots will not allow for large borders. The most economical use of ground is made by planting borders along property lines, leaving the centre area entirely for lawn and recreation.

Preparing the soil is important, as the border once planted remains for several years. A heavy dressing of well-rotted manure with the addition of leaf mould, where available, dug in deeply the Fall before planting, makes an excellent start. It is impractical for succession of bloom to have the border less than four feet wide.

Plants in a flower border should be arranged according to height in ascending order. Occasionally, for accent, a tall plant can be brought further forward than it normally would be. In your perennial planting, bays or irregular areas should be left for annuals. For your background or tall perennials the following may be used:

Delphiniums (Pacific Giants), Aconitum (Monkshood), Hardy Asters (New England), Lythrum (Morden pink), Ligularia Speciosa (a little known plant with elephant ear-like leaves and spikes of yellow flowers, followed by fuzzy seed pods).

Groups of Maxwill and Tigrinum lilies may be planted with the above, also the annual Cleome (the Spider plant). The above should be planted 18 to 24 inches apart.

Perennials of medium height, planted preferably in groups, consist of: Campanula, Chrysanthemum, Pyrethrum, Bleeding Heart, Gasplant, Heliopsis Pitcheriana, Hemerocallis (Day Lilies), Iris (German), Lilies, Phlox (Ada Blackjack and Hardy White). Peonies, of which Sarah Bernhardt (pink), Festiva Maxina (white), and Carl Rosenfeld (red), are three of the best. Ranunculus acris Fl. pl. (tall Buttercup), Trollius

Europeus (Globe Flower), Funkia Siebaldi (Plantain Lily), Ixiolirion (blue lily-like flower), Oriental Poppy, in variety, Carnation Shadow Valley, Columbine.

Interplanting in this area Tulips (Darwin's preferably), and Squills, give you early spring interest, with the perennials, lilies and annuals following up in unbroken succession. Tulip bulbs should be planted as soon as received in early Fall, in groups of three's and five's, about six to eight inches apart and four inches deep.

To get the strongest color in your border, the bays left for annuals should be planted in solid groups of one color and variety. The following are some of the best for this purpose: Asters, Ball's pink and white; Callendula (Beauty strain); Celosia, Thompsonia; Marigolds, Cupid, Happiness, Sunny, Glitters; Nicotiana, Sensation mixed, a daylight flowering type; Affinis, for fragrance; Pansies, Maple Leaf Giants; Petunias, in variety; Salvia, St. John Fire or Firebrand; Snapdragons, Intermediates; Stocks, Ten weeks; Verbenas, Gigantea; Zinnias.

Insects

There are a number of insects which attack flower borders. Chief among these are aphids, red spider mites, thrips, cutworms and slugs.

Aphids, commonly called Green Fly but which may also be black, brown or red, are often found in the underside of curled leaves or clustered on stems. Spraying with contact insecticides, such as nicotine sulphate and soap, will give good control.

Red spider mite is an insect so small that most people do not recognize it until the injury is apparent. Injury generally shows up in yellowed or, later, brown leaves, along the lower portions of the plants, especially in hot or sunny locations. On close examination of the undersides of these damaged leaves you will find a greyish webb, which is apparently woven by these mites as a protection. If the leaf is shaken over a white paper you will see these tiny eight-legged mites, which may vary from red to white. Spraying the plants with cold water under heavy pressure will dislodge and kill many of them. A new spray, Aramite, is considered to give good control.

Thrip is one of our worst enemies and may attack a host of plants, including gladioli, on which the damage is most apparent, showing up in light streaks or flecks on the petals or early shattering of flowers on small flowered plants. Thrip is a long, thin-bodied, fast-moving insect, varying in color from brown to white. Control can most easily be affected by

frequent spraying with DDT 50% wettable powder. Spraying should begin on a warm day, before flower buds appear.

Cutworms, where bothersome, may be controlled by spreading a bait made of the following: 1 tablespoon of arsenic, 1 quart of bran, 2 tablespoonfuls of molasses, 1 pint of warm water. This bait must be spread thinly in late spring, on an evening when the temperature is about 70 degrees.

Slugs, though not insects, will be treated here because they have become very troublesome in the Winnipeg area lately. We find that Meta Slug Killer (a bait), used according to directions, gives good control.

There are also several types of insect larvae, or worms, which chew up the plant leaves and flowers. These may be controlled by spraying with a stomach poison, such as DDT, arsenate of lead, calcium arsenate, etc.

Cleaning up the border and removing all trash will help prevent insects wintering over in the border.

A specimen of any damage, insect or disease, may be sent to the Plant Science Division, University of Manitoba, or the Extension Service, Manitoba Department of Agriculture, for identification and control.

Manitoba Vegetable Variety List

ASPARAGUS.....*Mary Washington, Vineland, (V-35), Eden.

BEANS
- **Green Podded**....*Tendergreen, *Stringless Green Pod.
- **Wax Podded**.....Pacer (very early). *Round Pod Kidney Wax, *Pencil Pod Black Wax.
- **Broad Beans**.....Broad Windsor (long and short pod varieties).
- **Pole Beans**.....*Kentucky Wonder (green and wax podded), Dutch Case Knife, *Early Blue Lake.
- **Edible Soybean**....Agate (early), Blackeye.

BEETS.....Early Wonder (early), *Detroit Dark Red Types.

BROCCOLI.....*Italian Green Sprouting or Calabrese.

BRUSSELS SPROUTS.....Improved Dwarf, *Long Island Improved, *Catskill.

CABBAGE
- **Green, Early**.....Golden Acre, Viking Golden Acre (very early), Jersy Wakefield.
- **Green Mid Season**.Copenhagen Market, Green Acre, Enkhuyzen Glory.
- **Green Winter**.....Danish Ballhead, Penn. State Ballhead, Roundhead (drier area).
- **Red**.....Red Acre (early).
- **Savoy**.....Chieftain Savoy.

CAULIFLOWER....*Snowball types, Snowball "A" (Perfection) early, Snowball "X" (Codania) late, Snowdrift.

CARROTS.....*Chantenay Types, *Nantes, Danvers Half Long Types.

CELERY
- **Golden**.....Golden Plume (early), Cornell 19.
- **Green**.....Utah Types (late).

CITRON.....Red Seeded.

CORN
- **Sweet**.....*Dorinny (very early), Gill's Early Golden Sweet (early), Gill's Early Market (for shipping), *Burbank Bantam, Golden Bantam.
- **Hybrids**.....*Sugar Prince, Marcross (early), Golden Rocket, Camelcross.

CUCUMBERS
- **Slicing**.....Early Russian (very early), Straight 8, Marketer, Fordhook Hybrid, Cubit.
- **Pickling or Dill**....National Pickling, Mincu, Early Russian.

EGG PLANT.....Black Beauty, New Hampshire Hybrid.

LEEKS.....Giant Musselburg, Giant Carenton.

LETTUCE
- **Leaf**.....Grand Rapids Types, Early Curled Simpson.
- **Head**.....New York Types, Great Lakes, Penn Lake and Progress, Imperial Types.
- **Cos**.....Paris White.

MUSKMELLON....*Far North (very early), Honey Gold.

ONIONS—From Seed
- **Yellow**.....Sweet Spanish Types (for transplants), Yellow Globe Danvers No. 11, Brigham's Yellow Globe, Ebenezer (for sets).
- **Red**.....Red Weathersfield.
- **Perennial**.....White Welsh, Egyptian.
- **Pickling**.....Silver Skin.

PARSLEY.....Paramount.

Note—Varieties marked with (*) are suitable for quick freezing.

Manitoba Vegetable Variety List (Cont.)

PARSNIPS.....Intermediate Guernsey Half Long, Hollow Crown, Shor Thick (for heavy soils).

PEAS
- **Early**.....*Little Marvel, Laxal, Wisconsin Early Sweet (very early).
- **Mid-season**.....*Lincoln (Homesteader), *Laxton's Progress, Merit, Onward.
- **Late**.....Stratagem, Alderman.
- **Edible Podded**....Mammoth Luscious Sugar.
- **Dried for Soup**....Arthur, Dashaway (yellow soup). Bluebell.

PEPPERS
- **Sweet**.....Pennwonder (early), King of the North, California Wonder (late).
- **Hot**.....Cayenne (early), Hamilton Market (mid-season).

POTATOES
- **Early**.....Warba, Red Warba, Early Ohio.
- **Mid-Season**.....Irish Cobbler.
- **Late**.....Pontiac, Columbia Russet, Green Mountain.

PUMPKIN.....Cheynne Bush, Small Sugar, Connecticut Field.

RADISH.....Sparkler, Cherry Belle, Comet, French Breakfast, White Icicle.
- **Winter**.....Black Spanish.

RHUBARB.....*Valentine, Canada Red, Macdonald, (not possible to grow a specified variety from seed, grown only from roots).

SPINACH.....Longstanding Bloomsdale, King of Denmark, Nobel (flat leaved), Viking, New Zealand.

SWISS CHARD....*Giant Lucullus.

SQUASH
- **Winter**.....Greengold, Buttercup, Green and Golden Hubbard Types.

TOMATOES
- **Non-staking**.....Early Chatham, Monarch F, Hybrid, Bounty.
- **Staking**.....Earliana (for home growing), Stokesdale No. 4, or Early Stokesdale, Bonny Best.

TURNIPS
- **Swede or Rutabaga**.....Laurentian, Canadian Gem.

WATERMELLON....Sweet Sensation (extra early), New Hampshire Midget, Early Canada.

VEGETABLE MARROW.....Long White Bush.

Less Commonly Used Vegetables

BORECOLE or KALE.....Dwarf Green, Curled Scotch.

CHINESE CABBAGE.....Wong Bok (short head), Michihli.

CORN
- **Pop Corn**.....Tom Thumb (yellow), Pinkie, White Hulless.

SQUASH
- **Summer**.....Caserta, Yankee Hybrid.

TURNIP
- **Summer**.....Purple Top Milan, Golden Ball.

Fruit List

SUGGESTED HOME GARDEN UNIT, DISTRICT No. 4.

APPLES.....Heyer 12, Battleford.
APPLE CRABS.....Rescue.
CRABAPPLES.....Osman, Robin, Adam, Dolgo, Silvia.
PLUMS.....Dandy, Norther, Bounty, Mina, Manor, Convoy, Dura, Opata.
SANDCHERRIES....Manmoor, Brooks.

Note—Varieties marked (*) are suitable for quick freezing.

VEGETABLE PLANTING GUIDE

Kind of Vegetable	Seed Per 100' row	PLANTING DATES Indoors	PLANTING DATES Outdoors	Depth of Seeding	DISTANCE Between Rows or Hills	DISTANCE Between Plants in Row or Hill	Approx. Yield per 100 ft. Row
Beans—							
Bush	¾-1 lb.		May 20-30	1½-2 in.	24 in.	2-4 in.	1½-2 bus.
Pole	½-¾ lb.		May 20-30	1½-2 in.	36-in. hills	30-36 in.	1½-2 bus.
Dry Shell	1 lb.		May 20-30	1½-2 in.	24 in.	2-3-in.	8-10 lbs.
Beets	2 oz.		May 10-June 15	½-1 in.	18 in.	2-3 in.	2-3 bus.
Broccoli	1 pkt.	April 1-10	*May 15-20	½ in.	24-30 in.	18-24 in.	
Brussel Sprout	1 pkt.	April 1-10	*May 15-20	½ in.	30-36 in.	24-30 in.	
Cabbage—							
Early	1 pkt. or ¼ oz.	April 1-10	*May 15-30	½ in.	24-30 in.	18 in.	125-150 lbs.
Late	1 pkt. or ¼ oz.	April 10-20	*June 1-25	½ in.	30-36 in.	18-24 in.	150-200 lbs.
Chinese	1-2 pkts.		*June 25-July 10	½ in.	18-24 in.	12-18 in.	90-100 lbs.
Carrots	½-¾ oz.		May 1-June 10	¼-½ in.	12-18 in.	1-2 in.	2-3 bus.
Cauliflower	1-2 pkts.	April 1-10	*May 15-25	½ in.	24-30 in.	18-24 in.	90-120 lbs.
Celery	1 pkt.	Feb. 20-Mar. 10	*May 20	⅛-¼ in.	36. in.	6-12 in.	150-200 stalks
Chard, Swiss	1 oz.		May 10-20	½-1 in.	20-24 in.	6-8 in.	150-200 lbs.
Corn	4 oz.		May 20-30	2 in.	30 in.	9-12 in.	150-200 ears
Citron	1 oz.	April 15	May 20-30	1-1½ in.	60-72 in.	48-60 in.	50-60 fruits
Cucumbers	½ oz.	April 15	May 20-25	½-1 in.	48-72 in.	12-18 in.	100 lbs.
Eggplant	1 pkt.	Mar. 20-Apr. 10	*June 5-10	½ in.	24-30 in.	18-24 in.	50-70 fruits
Lettuce—							
Leaf	½ oz.		Apr. 10-June 30	¼-½ in.	12-18 in.	4-6 in.	40-50 lbs.
Head	1 pkt.	April 1-10	*May 7-15	¼-½ in.	12-18 in.	6-12 in.	50-90 lbs.
Melons—							
Muskmelon	1 oz.	April 15	May 20-30	1-1½ in.	60-72 in.	30 in.	60-80 fruits
Watermelon	1 oz.	April 15	May 20-30	1-1½ in.	60-84 in.	36-48 in.	40-60 fruits
Onion—							
Seed	¾-1 oz.		Apr. 20-May 10	¾-1 in.	12-18 in.	1-2 in.	1½-2 bus.
Sets	2-3 lbs.		April 20	1 in.	18 in.	2-3 in.	2-3 bus.
Parsley	1 pkt.	Feb. 20-Mar. 10	May 20	¼-½ in.	12-18 in.	4-6 in.	30-40 lbs.
Parsnips	½-¾ oz.		*Apr. 20-May 20	½-1 in.	18-24 in.	3-4 in.	2-3 bus.
Peas—							
Early	1 lb.		April 20	1½-2 in.	24-30 in.	1½-2 in.	30-50 lbs.
Mid-season	1 lb.		*Apr. 20-May 10	1½-2 in.	30-36 in.	2-3 in.	30-50 lbs.
Peppers	1 pkt.	Mar. 20-Apr. 10	June 5-10	½ in.	24-30 in.	18 in.	100-150 fruits
Potatoes	8-10 lbs.		May 15-25	4 in.	30-36 in.	14-18 in.	1½-2 bus.-
Pumpkin	1 oz.	April 15	May 20-30	1-1½ in.	60-84 in.	36 in.	40-60 fruits
Radish	1 oz.		Apr. 25-June 5	¼-½ in.	12-18 in.	1-2 in.	75-100 bchs.
Spinach	1 oz.		April 25-May 10	½-1 in.	12-18 in.	2-4 in.	50-70 lbs.
Squash	1 oz.	April 15	May 20-30	1-1½ in.	60-84 in.	30-60 in.	60-80 fruits
Tomatoes	⅛ oz.	Mar. 20-Apr. 10	*June 1-June 10	¼-½ in.	36-48 in.	36-48 in.	5-7 bus.
Turnip—							
Summer	½ oz.		May 1-24	¼-½ in.	18-24 in.	4-8 in.	1½-2 bus.
Swede	½ oz.		June 1-10	¼-½ in.	24-30 in.	6-10 in.	3-4 bus.

NOTE: * = transplanting dates.

NOTE: Distances recommended above for spacing of vegetable plants relate more specifically to large operations. Under city and town garden conditions, where space is very limited and artificial watering may be practised, good vegetables may be grown with much less space than suggested. In many cases the distances are reduced by one-half or one-third with reasonably good results.

The Directors of the Winnipeg Horticultural Society wish to thank the advertisers, also a number of donors, whose names are withheld, as well as the following who have made donations.

The co-operation of these friends has made this edition of the Winnipeg Flower Garden possible and is appreciated by the directors.

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Notes and Memoranda

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