1949

The WINNIPEG FLOWER GARDEN

Presented by

The Winnipeg Horticultural Society

FOREWORD

by Q. C. Moffat
PRESIDENT

Through the winter months when gardens are blanketed by deep protective snow, our thoughts turn to planning for a more beautiful garden in the Spring. May you find in this Year Book material that will assist you in such planning and also help you through all the growing season.

The great value of this book is that it is written by writers who draw from their experience in western horticulture. May we extend our thanks to them for the time and thought they have given.

The winter meetings planned for the coming months are designed to interest the experienced gardener and those who are just beginning. Is there anyone you know would be interested? Ask them.

Outlined in a special place in this book are the various competitions which will be sponsored by the Winnipeg Horticulaural Society this year. We ask you all to take an active part in such competitions for they are the show windows of the Society.

Our thanks to the advertisers and also those whose donations made this book possible.

To you all may I extend best wishes for a prosperous New Year and many hours of happy and productive gardening during 1949.

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1949

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Kildonan Park, West Kildonan

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1935 Mr. John Walker
1936 Mr. R. R. Nichol*
1937 Mr. R. W. Brown
1938 Dr. W. J. Riley
1939 Mr. J. A. MacPhail
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1941 Mr. Thos. O. Graham
1942 Mr. Theo. E. Howard
1943 Mrs. Roy Munt
1944 Dr. S. W. Edgecombe
1945 Mr. Eric Sochting
1946 Mr. J. C. Williams
1947 Mr. J. H. Nichol
1948 Mr. W. J. Tanner
*Deceased.

Winnipeg Horticultural Society

Statement of Receipts and Disbursements for the Year Ending October 31, 1948

MEMBERSHIP, 1948—454

RECEIPTS

Balance on hand, Nov. 1st, 1947		$ 886.44
Membership fees for 1948		429.00
Membership fees for 1949		48.00
Government grant, membership		56.40
Municipal grant		100.00
Donations		465.03
Entry fees		35.15
Advertising, 1948 Flower Garden		1,405.00
Advertising, 1949 Flower Garden		85.00
Rent of floor space, Flower Show		65.00
Subscriptions for magazine		120.00
M.H.A. prizes for Fruit Show, 1947		50.00
Sale of books		215.75
Miscellaneous		8.64
		$3,969.41

EXPENDITURES

Flower Show:			
Prizes	$479.75		
Prizes, Peony Show	41.00		
Prize lists	54.00		
Entry tickets	48.33		
Rent of rink	50.00		
Help at exhibition	20.00		
Other expenses	54.50		
		$ 747.58	
Home Grounds:			
Prizes, Home Grounds	50.00		
Prizes, Vegetable Gardens	160.00		
Judging expenses	39.65		
Other expenses	19.45		
		$ 269.10	
Year Book:			
Printing	1,489.50		
Typing	10.00		
Postage	29.00		
		$1,528.50	
Printing		$ 194.79	
Postage		116.84	
Honorarium		150.00	
Telephone		43.44	
Your Garden and Home, subscriptions		122.00	
Films		11.25	
University, rent of rooms		7.50	
Maison St. Joseph, adjusting lost cheque		8.00	
Camera Com., for pictures		8.80	
Stationery		7.80	
Miscellaneous		35.64	
		$3,251.24	
Balance on hand, Oct. 31st, 1948		718.17	
		$3,969.41	

R. W. BROWN,
Secretary-Treasurer.

AUDITOR'S REPORT

To the President and Members,
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 Oct. 31st, 1948.

J. A. MacPHAIL,
Auditor.

Winnipeg, Nov. 24th, 1948.

President's Annual Report for Year 1948

WM. J. TANNER

Once again it is time for us to pause for a moment and review the activities of your Society for the past year. 1948 has been a successful year. We now have a membership of 454, an increase of 14 over 1947. Taking into consideration the fact that some 90 odd 1947 members did not renew their subscriptions this year, it means that we enrolled just over 100 new members. That, I believe, is a very creditable showing, but there is no reason whatever that our membership could not be doubled in a city as garden-conscious as Winnipeg.

During the year ten general meetings were held, with an average attendance of 83. To arrange for these meetings and to conduct other business your Directors met eleven times, with an average attendance of twelve, besides which there were numerous committee meetings.

The 1948 edition of the Winnipeg Flower Garden is now in the hands of all members, and our sincere thanks to Professor E. T. Anderson and his Year Book Committee for their very successful effort.

The Home Grounds Competitions were held as usual, a report on these will be presented by the Chairman of that Committee, Mr. Skelding.

This year, the Vegetable Garden Competition for Greater Winnipeg, sponsored by the Winnipeg Free Press, was conducted by your Society. This entailed quite a lot of extra work, practically all of which fell on the shoulders of our very capable Secretary, Mr. R. W. Brown. There were 114 entries in this competition in all sections of the city, and prizes amounting to $160.00 were donated by the Free Press. The judges, Mr. C. E. Law, Mr. R. W. Brown and Mr. W. J. Tanner, spent four and a half days looking over these gardens and had quite a difficult task in deciding the prize winners.

A new venture was undertaken this year when a Peony Show was staged in the T. Eaton Co. Assembly Hall. Owing to a very backward spring, it was not an easy task forecasting just when the peonies would be in bloom, but Thursday and Friday, June 17th and 18th, were finally agreed upon. While entries were not large, there were 25 in five classes, we feel that for a first try it was quite successful. Prizes totalling $41.00 were paid. We are indebted to Mr. John Walker, of Indian Head, Sask., who sent in a display of blooms and to The Gardenia Florists of Winnipeg who went to a great deal of trouble in providing a display of peonies. Our thanks to

the T. Eaton Co. for the loan of their Assembly Hall, and for their valued help in setting up the show.

On July 25th, sixty-one members of your Society enjoyed a trip to the Greater Winnipeg Water District Intake at Indian Bay. It was a beautiful day, and was thoroughly enjoyed by all taking part. We extend to the Winnipeg Water District Commission our sincere thanks for allowing us to visit Indian Bay, and for the very courteous and efficient manner in which their staff entertained us.

The Annual Flower and Vegetable Show was held in the Civic Caledonian Rink on August 25th and 26th, particulars of which will be contained in the report of the Flower Show Committee.

A camera committee composed of Mr. H. McDonald, Prof. E. T. Anderson, and Mr. R. Hikida, took a number of colored pictures of winning gardens and others during the summer. Your Society is now in possession of 22 of these slides at the cost of $8.80.

The report of the Secretary-Treasurer shows that the financial affairs of the Society are in excellent shape. I take this opportunity of expressing to Mr. R. W. Brown our sincere thanks for the very fine manner in which he looks after our affairs. Few people realize the tremendous amount of work he does for this Society.

During the past year your Society suffered a great loss by the death of two of our Associate Directors, Mr. Fred Pugh and Mr. Herbert Sulkers. Mr. Sulkers in particular was well known to all our members who attend our meetings, hardly a season passed that he did not address one of our meetings, which were always well attended. We regret also the passing of five other members of long standing, Mr. W. J. T. Kerr, Mr. R. A. Edmond, Mr. Geo. Batho, Mr. Jas. C. Berg and Mr. A. W. Lauman. To the families of these men, and to any other families who have suffered bereavement this past year, we extend our deepest sympathy.

I would like to take this opportunity of thanking you for the confidence placed in me this past season. It has been a wonderful experience to me to meet so many gardeners, I don't think it would be possible to meet, anywhere, a more friendly lot of people than gardeners, and I strongly recommend gardening as a hobby to everyone. My sincere thanks to all members of the Board of Directors for their loyal support and assistance, and I sincerely hope that the new President will have the whole-hearted support of the new Board.

Forecast of THINGS TO GROW

The year will wake with daffodils
And hurry on to border frills
Of snaps and stocks. The iris next
Will raise their colored banners flexed
Against the wind. The trees will gleam
Against the puffing clouds of spring.
Summer will come a-hurrying
With basket-loads of rosy bloom,
Pursued by all the lazy zoom
Of bees and gnats; and all too soon
The plump, orange-tinted autumn moon
Will sail across the corn-stacked fields.
Farmers will count their apple yields,
Chrysanthemums will thrive in frost.
The whole bright, changing scene being lost
In snow that flowered from icy rain,
Then the year sleeps, to wake again.

—Virginia Brasier.

Some Newer Trees

W. R. LESLIE

Prairie Canada witnesses striding advances in horticulture as citizens become bolder and adventure more widely in the scope of their tree planting. Most native woodland of deciduous trees lacks color and stimulation in winter. Elms, oaks, ash, basswood, boxelder, ironwood and hackberry have dull winter bark of neutral grey or dull brown colors. White birch, Aspen, poplar and coniferous evergreens, where found, do relieve the usual drabness commonly associated with Manitoba prairie woods. This is fortunate and the whole citizenry feels a debt of happy gratitude to those who plant their properties so that interest is maintained throughout the run of the calendar.

LARGE TREES

Sugar Maple (Acer saccharum) being source of our national floral emblem rightly is accorded first consideration. The first task is to plant only the hardiest strain. Seedlings from southern Ontario are tender here. Happily, the hardier geographic forms from Northern Minnesota and from West of Lake Superior are thriving at Morden. The seed ripens the third week of September. It should be sown promptly. It enjoys well drained loamy soils. Failure is courted when planting is on low soggy ground. Autumn foliage is from yellow and bronze to red. Bark on branches is light colored.

Silver Maple (Acer saccharinum) is a fast growing species that likes moist locations. Native to Rainy River country, it is hardier and larger than Sugar Maple but more prone to breakage. Good specimens are to be found in many Manitoba towns. It deserves much wider use. Northern seed only is suggested. The weeping form, **Wier** maple, seems consistently tender at Morden.

Red Maple (Acer rubrum) is a moisture-loving species native to Thunder Bay hills. This is the most striking subject in Eastern hardwoods in autumn when the leaves become scarlet or fiery red. Observations on local behaviour are that it requires somewhat acid soil for well-being. More than usual, the use of generous quantities of acid peat at planting is stressed.

White Ash (Fraxinus americana) is the ornamental prairie ash. Native to Minnesota, some fine trees are seen in Southern Manitoba. It grows more rapidly, is more shapely than

the Green ash. Foliage takes on purplish tints in autumn. Hardy strains are worthy of trial.

Mongolian Oak (Quercus mongolica) seems a valuable newcomer. To date it has been fully hardy. Leaves are shapely, short-stalked, clustered at the end of the branchlets, becoming rich red in autumn and sticking to their moorings after most trees are bare. Does well in loam soils. Worthy of wide employment.

Red Oak (Quercus borealis) a fast growing beautiful tree. Specimens from Iowa and Northern Minnesota seed are doing well in Pembina Hills country. The pointed, deeply-lobed, large leaves are attractive throughout the season and striking when red in October and November. Makes a good specimen tree.

Manchurian Walnut (Juglans mandshurica) has proved the hardiest and fastest growing walnut in Manitoba. The long leaves may have as many as 17 leaflets. Bark remains smooth for a number of years. Suggested as a specimen tree on large properties. Nut meat is bitter. Trees may bear three years after planting.

Black Walnut (Juglans nigra) a beautiful tree that likes clay soil. Strains native to Minnesota and Sault Ste. Marie are more dependable than those from farther east. The nuts are rich, tasty, and valuable in cooking.

Butternut or White Walnut (Juglans cinerea) an attractive tree but less handsome than Black Walnut. Trees are productive of rich, pleasing nut-meat in Southern Manitoba.

Siberian Elm (Ulmus pumila) of **Manchurian strain** is a rapid growing ornamental tree, with small leaves borne on neatly ranked branchlets. This species from Chinese seed is often referred to as Chinese elm, — a name rightly accorded to Ulmus parvifolia, a tender sort. It is important to avoid Chinese strains due to their questionable hardiness. Siberian elm is favored to form screens quickly and for tall clipped hedges.

Morden Elm (Ulmus americana var.) is a superior selection of American elm. This variety is very vigorous, shapely and tough in crotch wood. Approved for avenue and shade planting. (Many native elms have faulty shape, weak crotches, and indifferent growth rate. Lake City elm is hardy but splits too easily. Moline elm is tender.)

Amur Cherry (Prunus maacki) is a very large cherry from Northern Manchuria. This hardy species is of chokecherry type in flower and fruit but is large, attaining a height of 40 feet. Branch spread also is about 40 feet. Leaves are smaller and neater. Trunk bark is papery and conspicuous

in color, being between purple and yellow in hue and punctuated with large lenticels. A valuable shade tree, particularly commanding in winter season.

Siberian Larch (Larix sibirica) is a superior cousin of Tamarac or American larch. It is faster growing, with longer leaves, yellowish branchlets, and straighter stem. Various soils are acceptable, even light sandy loams. A notable drought tolerator.

Morden Spruce (Picea pungens var.) a selection of Colorado spruce of dense growth, durably blue needles and straight habit. A beautiful shapely specimen spruce which is increased by Patmore Nursery, Brandon, Manitoba, by graftage. Retains its symmetry and density much longer than Koster spruce.

Algerian Black Poplar (Populus nigra thevestina). Persons intrigued by Lombardy poplar do well to employ this sub-species. It proves much hardier and healthier at Morden where it forms a large dense ascending tree of columnar form. The Lombardy is prone to some killing in trying winters. Algerian has more whitish trunk bark.

MEDIUM TREES

Ohio Buckeye (Aesculus glabra) is a desirable ornamental tree that may attain a height of over 30 feet. It is widely successful in Manitoba. Usually it is the first tree to take on autumn foliage color. The tree commands attention when laden with its multitudes of large prickly nuts, July to October.

Swedish Littleleaf Linden (Tilia cordata var.) a smallish northern form of Littleleaf European linden which has the important merit of bright tawny bark, making it a striking subject on the winter scene. This Swedish strain has done well at Dropmore. The tree tends to numerous large ascending branches. Flowers are sweetly fragrant.

Manchurian Crabapple (Malus baccata mandshurica) a form of Siberian crabapple from the Amur region which at Morden assumes a narrow upright outline, bears almost countless numbers of scarlet to red very small fruits which are retained into spring unless eaten by winter birds. A thrifty narrow tree attractive at all seasons. Approved for field shelter planting as well as on landscapes.

Mayday Tree or **Harbinger European Birdcherry** (Prunus padus commutata) — a large cherry tree of chokecherry type from Europe that adorns the landscape early in May with luxurious large fragrant blossoms. Bloom is about a fortnight

earlier and much larger than that of chokecherries. A round-headed tree of great hardiness but unfortunately heavily susceptible to black-knot disease. Because of this weakness it is not for areas already growing native cherry trees.

Russian Olive (Elaeagnus angustifolia) a tree of moderate size, up to 21 feet, which imparts the most glittering silvery foliage mass. Leaves are retained late, sometimes through most of the winter. Late spring yellow flowers give off penetrating sweet perfume. The bright silvery berries are eaten in February by Bohemian Waxwings. Early plantings were mostly of Central and Southern European sources. The tree ranges to the Altai Mountains in Siberia. Northern hardy strains have been acquired recently. Tolerates drought and also some alkali in the soils.

Amur Corktree (Phellodendron amurense) a hardy tree with leaves suggesting those of the Black Walnut. Older trees are conspicuous in winter with light grey, deeply grooved, spongy bark. The aromatic leaves are late developing in May.

Showy Mountainash (Sorbus decora) a decorative tree native far into Northern Manitoba. The species is well named as the fruits are larger and brighter scarlet than the ordinary American mountainash. As the berries ripen early, robins, catbirds and cedar waxwings may harvest them before migrating. The European form ripening later usually escapes loss from the summer birds. The tree lends itself to semi-shrub habit, — with several main stems. Such growing is safeguard against sunscald injury in late March, a tragedy common here to the European species.

Willows abound in variety. They are valued for winter bark color and for fine airy foliage effect in summer. The **Siberian Silver Willow,** which may be a form of Silky Willow, (Salix sericea), is esteemed for its silky grey foliage, clean upright form and bright green and brown bark. **Yellowstem White Willow** (S. alba vitellina) is admired by all because of its laughingly yellow winter bark. This might well be placed among the Large Trees. **Redstem White Willow** (S. a. chermesina or S. vitellina britzensis) is the most glowing bright red bark known among hardy trees. The lively color on branches from October until late April distinguishes any plantation. Used effectively as hedges or screens to be coppiced in May. **Sharpleaf Willow** (S. acutifolia) is less fragile than the White willow. It lacks spectacular features compared to others here mentioned but is most reliable of commercial willows. **Niobe Weeping Willow** is a graceful, weeping, semi-hardy form of S. a. vitellina. A distinctive

specimen for sheltered well-watered nooks. Willows revel in moist soils. They sulk if crowded by other species.

SMALL TREES

In this class, which seldom exceed 20 feet are found the trees most fitting for small properties. Of the dozens available, space restricts mention here to but few.

Rosybloom Crabapples (Malus niedzwetzkyana hybrids with hardy crabapples). **Hopa** is the best known variety. Readers will be acquainted with the merits of this South Dakota beauty. **Almey,** introduced by the Dominion Experimental Station, Morden, honors a renowned horticulturist, J. R. Almey. The tree is more vigorous than Hopa, and the flowers larger, more vividly reddish and carrying a white star at base of petals. Scarlet fruits are retained until following spring. **Sundog,** a sister of Almey, is ascending, making a columnar outline. The large flowers are somewhat mauvey pink. **Strathmore** from Alberta is a finely-textured columnar small tree. Foliage is maroonish all summer and deep maroon and red in October. Slow to commence blooming but a refined foliage tree.

Amur Maackia (Maacki amurensis), a hardy tree of the legume family, with 7 to 11 leaflets, bears white and yellow flowers in panicled racemes. The Maackia is suggestive of the more beautiful but too-tender Laburnum.

Amur Lilac (Syringa amurensis) a small tree to about 18 feet, that is adapted to front yards. Suckering little, or not at all, it forms a dense mass of greenery that is overlaid with billows of creamy white fragrant blossoms in late June and early July. The Japanese Tree Lilac grows to 30 feet tall, blooms a little later, and is coarser throughout. The Amur lilac remains attractive in winter when it retains its spreading bright tawny seed panicles. The Peking Lilac is daintier than the other two and has papery, lively reddish brown trunk bark. Unfortunately, it is less floriferous in Manitoba.

Downy Hawthorn (Crataegus mollis) a tree to 30 feet high, native to South Dakota, is handsome with bright green lobed leaves, large white flowers, and large pear-shaped red fruits. Fruits drop in October. The name arises from the fine hairs on underside of leaves.

Chinese Hawthorn (C. pinnatifida) a tree to 18 feet from Northeast Asia. It is noted for its lustrous deeply-lobed leaves and its showy red fruits which may be as large as

crabapples. Sometimes injured by fireblight. Makes an excellent hedge.

Douglas Hawthorn (C. douglasi) an attractive form native to the Cypress Hills in Saskatchewan. Smallish neat leaves are shiny dark green. Fruits are lustrous, black in color, falling in September.

Cockspur Hawthorn (C. crusgalli) armed with numerous long thorns, clothed with glossy leaves, this thorn it attractive in bloom and in winter also while retaining its bright red small fruit. A native of Quebec.

Wahoo (Euonymus atropurpurea) a small tree to about 20 feet, native to Minnesota, which is esteemed for its showy bittersweet-like fruits. Other common names are Burning-bush and Spindlebush. The fruits about 3/5 inch across and deeply 4-lobed, crimson with a scarlet aril, clinging well into winter.

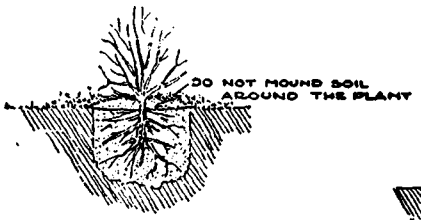
Golden Buffaloberry (Shepherdia argentea var.) — a golden-fruited strain of the native small tree which may be 19 feet tall. Leaves are silvery on both sides as on the commoner red-fruited type. The shining golden fruits add a cheerful glow to the winter scene as they cling in extended clusters on the branches.

Allegany Shadbush (Amelanchier laevis) — an eastern cousin of our saskatoon, which may grow well over 20 feet. A graceful tree when displaying profuse slender nodding or drooping racemes of white flowers. Young leaves are purplish.

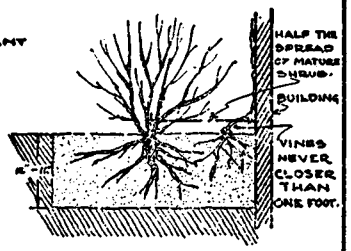
Fountain, or Water Birch (Betula fontinalis) — a graceful slender spreading tree with pendulous branches, sometimes about 30 feet tall. Bark is reddish brown. Native to Alberta.

Amur Maple (Acer ginnala) is one of the most ornamental small trees in the plant kingdom. Native of Northern Asia, it is full of hardiness. The small 3-lobed leaves are pleasing dark green in summer. In October, when kindled by Nature's torch, they become glorious shades of sparkling red. Amur maple is our most prized foliage-color possession. No matter what the nature of the season, its leaves redden the autumn woodland. Adapted to many soils, it has keen dislike for high-lime in gumbo soils. In such it is well to incorporate generous quantities of acid peat moss in the root area at planting time. The fruits or samaras are rich red in summer.

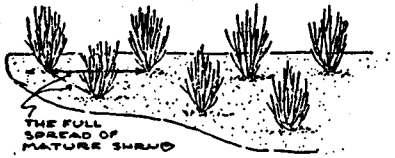
HOW TO PLANT



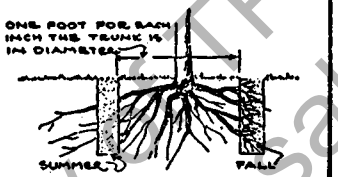
SET SHRUB THE SAME DEPTH AS IT WAS IN THE NURSERY. TAMP SOIL AROUND THE ROOTS AS HOLE IS FILLED.



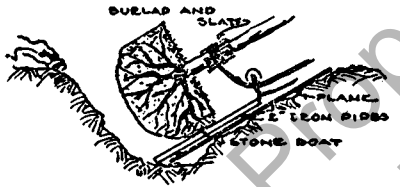
IN ALL PLANTING WORK ALLOW FOR THE FINAL SIZE OF THE PLANT. DONT CROWD FOR QUICK EFFECTS, USE LARGER SPECIMANS.



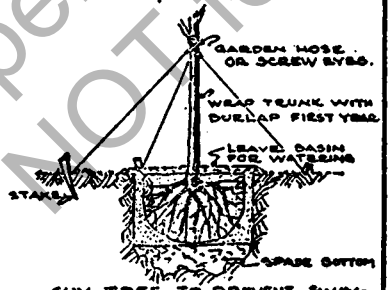
STAGGER OR ZIGZAG SHRUBS IN PLANTING BEDS. THE TALLER SHRUBS SHOULD BE IN THE REAR WITH THE SMALLER ONES IN FRONT.



PREPARE TREE IN THE EARLY SUMMER PRECEDING THE WINTER IN WHICH IT IS TO BE MOVED BY DIGGING TRENCH AND RE-FILLING WITH GOOD TOP SOIL.



DIG AND MOVE IN WINTER WITH A FROZEN BALL OF EARTH. IF MOVED AT ANY OTHER TIME THE SOIL BALL SHOULD BE WRAPPED WITH BURLAP TO PREVENT IT FROM BREAKING AND DRYING OUT.

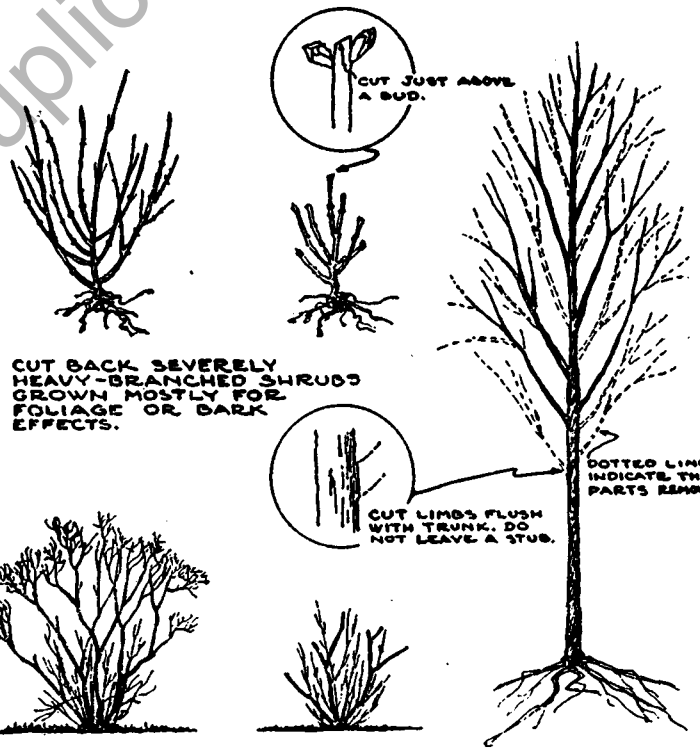


GUY TREE TO PREVENT SWAYING BY WIND. LEAVE WIRES IN PLACE TWO YEARS.

From Ext. Circular VFD, College of Agriculture, Madison, Wis.

HOW TO PRUNE

TWO WAYS OF PRUNING SLENDER, FLOWERING SHRUBS. LEFT: SPIREA AS IT CAME FROM NURSERY. CENTER: AFTER THINNING OUT. RIGHT: AFTER THINNING OUT AND HEADING BACK.



CUT BACK SEVERELY HEAVY-BRANCHED SHRUBS GROWN MOSTLY FOR FOLIAGE OR BARK EFFECTS.

AN OVERGROWN SHRUB WITH NEW SHOOTS GROWING FROM THE BASE. THE SHRUB GIVES A BARE AND RAGGED APPEARANCE.

THE SAME SHRUB BUT PRUNED TO ALLOW NEW SHOOTS TO DEVELOP FROM THE BASE, THUS RENOVATING THE SHRUB IN TWO OR THREE YEARS.

CORRECT METHOD OF PRUNING A YOUNG TREE. ½ TO ⅓ OF THE TOP IS REMOVED WITHOUT DESTROYING THE NATURAL SHAPE OF THE TREE.

From Ext. Circular VFD, College of Agriculture, Madison, Wis.

The Raspberry

C. R. URE

Three types of raspberry may be found in Manitoba gardens. They are customarily listed as red, black, or purple, according to fruit color. Within each group there are numerous varieties. Each type has arisen from wild species which possess differences in plant behavior, as for example mode of increase or degree of hardiness. It becomes necessary then to know a little about the characteristics of each group.

The red raspberry is the most extensively grown in prairie gardens. It is the hardiest of the three types generally, although varieties within each group differ greatly in this respect. They are adapted to a wide range of soil and climatic conditions. The red fruits are borne on erect canes, which increase in number by sending up suckers. In contrast, the black raspberry, or blackcaps, have long arching canes, generally covered with heavy spines and a whitish bloom. The tips grow downward in late summer to contact the soil where, under favorable growing conditions, they root and produce new plants. They are not as hardy or generally as satisfactory as the reds. The black fruits are firmer than the reds, more seedy and have a distinct flavor. Purple raspberries are crosses between red and black varieties. They are mostly intermediate between the parents in the matter of hardiness, fruit color and productiveness.

Red Raspberry

Only the red raspberry will be discussed because of its general popularity. Space will not permit a detailed description of cultural practices. A few newer developments and the more important features of raspberry growing under prairie home conditions will be dealt with. General cultural methods are outlined at length in several fine bulletins and books.

Those who desire fuller information will find one or more of the following publications helpful. Among the bulletins are, "Growing Small Fruits in the Prairie Provinces", by W. R. Leslie, issued in March, 1945, by the Line Elevators Farm Service, 763 Grain Exchange Bldg., Winnipeg; "Growing Raspberries in Manitoba", by John Walker, and published by the Manitoba Department of Agriculture. From across the border comes a helpful bulletin entitled "The Home Fruit Garden", by Dr. L. C. Snyder, and issued by the Agricultural Extension Service, University Farm, St. Paul, Minnesota. Among the many books on the subject of small fruits, two

come to mind. They are 'Hardy Fruits", by Dr. C. F. Patterson, University of Saskatchewan, Saskatoon; and "Small Fruit Culture", by Dr. J. S. Shoemaker, now head of the Department of Horticulture, Ontario Agricultural College, Guelph, and formerly of the University of Alberta. Most of these bulletins are obtainable by writing to the publishers, and the books may be borrowed from reference libraries.

Cultural Considerations

Site: Selection of a proper site is important towards attaining maximum success in growing the raspberry. Unfortunately, most urban dwellers have very little latitude in their selection. Where a choice of locations is available one should endeavor to meet as many of the following conditions as possible. Avoid low spots where water may stand on the surface, as excessive moisture is harmful and often fatal. A gentle slope will assist surplus water and cold air to drain to lower levels. East or north sloping exposures retain the snow better in winter and thus affords greater protection for the canes; they warm up later in the spring and this retards early growth and possible frost injury; and such slopes are less subject to drought than south or west inclines. Shelter from strong prevailing winds is highly desirable. Full sunlight is essential to strong, heavy canes and maximum growth. Where the selection is limited to one spot which does not supply the foregoing requirements, the matter of soil, slope and shelter can often be altered sufficiently to ensure reasonable success. On level ground or light south or west exposures, a screen of low shrubbery, a lattice or board fence placed to the sunward side will provide the same effect as east or north slopes.

Soils: The soil for the raspberry plantation may be likened to the foundation of a house. Its composition and structure determine the success of the super structure. To enable maximum performance from the plants, careful attention to selection of soil type and thorough preparation before planting cannot be too strongly emphasized. Raspberries will grow on a variety of soils **providing they are high in plant food and retentive of moisture.** While too much water is injurious, satisfactory crops of top grade fruit will not mature without a liberal supply of moisture. The soil is the medium to hold that supply.

Generally growth and yields are better on deep loams to clay loams. Heavy clays are reasonably satisfactory, although the danger of standing water must be watched, and greater attention to preparation is necessary.

With proper attention to the soil and its management a raspberry planting will remain in a productive state for

10-12 years or longer. This fact emphasizes the desirability of thorough preparation before planting. It is much more difficult afterwards. The first consideration is to make available an abundance of plant food. Large amounts of organic matter in the form of plant refuse, green manures, or stable manure, should be worked into the ground deeply the year prior to planting, in association with a summerfallow job. Where garden space must be used, a hoe crop may be grown, but in the fall plow or dig in partially rotted manure at the rate of 100 to 200 pounds per 100 square feet. In the spring, when the ground is being leveled, 150 to 200 pounds per acre of ammonium phosphate worked in may prove helpful in getting the plants off to a strong start. It is likely to be particularly beneficial in cold, backward springs.

The incorporation of liberal quantities of organic matter assists in opening up heavy soils. It improves aeration. In all soils it greatly increases the water-holding capacity, our second important consideration. The addition of 2 to 3 inches of acid peat moss to the alkaline, heavy clay soils of the Red River Valley is desirable and economical for small areas. The peat greatly improves the physical structure through better aeration, greater water storage capacity, but its greater benefit is as an aid to check chlorosis, or yellowing of the foliage.

Weeds: Destruction of weeds should receive special attention before setting plants, particularly if they are deep-rooted perennials. Their eradication before planting may avoid the necessity of destroying a plantation while it should be still in full production. Quack Grass, Perennial Sow Thistle, Canada Thistle and Bindweed are the worst. Small patches can be removed by hand. Frequent cultivation is generally employed to clean up large areas and this is followed the second season with a hoe crop. More recently the chemical weed-killers have become a valuable aid in destroying certain of the deep-rooted weeds. Perennial Sow Thistle, Canada Thistle and Bindweed are destroyed by spraying with two or more applications of 2,4-D, at the rate of 1 pound per acre of the acid.

Caution: 2,4-D is a very potent chemical and can be very destructive to plants, if used carelessly. Anyone who contemplates using it in a small area close to horticultural plant material should discuss his project with the Professor of Horticulture at the University of Manitoba; the Weed Commissioner, Department of Agriculture, Legislative Building, Winnipeg; or the nearest Experimental Station.

Preliminary tests show the raspberry to be resistant to 2,4-D. It appears hopeful that this chemical may be used on raspberries to destroy susceptible weeds, but further testing

is required before any general recommendations can be made Other experiments are in progress to test new chemicals for grassy types of weeds, such as Quack Grass. One of these, under the name of T.C.A., has given satisfactory results in the control of Quack Grass during the past year.

Plans are under way to test this compound further under Manitoba conditions this coming summer.

Planting

Varieties: Many varieties are to be found growing in home gardens and nurseries across Manitoba, with varying degrees of success. A few stand out as being either dependable or worthy of trial. **Chief** and **Latham** are recommended as two reliable sorts that should constitute the bulk of the first planting. Both are very hardy, vigorous and productive. Generally Chief starts to ripen a week to 10 days before Latham and is nearly over when the latter starts. The two make a fine combination of varieties to extend the raspberry season over a long period. Their general adaptability, with satisfactory fruit quality, makes them highly rated for the home garden and the grower planting raspberries for the first time. **Herbert** is an old variety, which has been very satisfactory as a home berry. It is moderately hardy and very productive of large, bright red fruits of good quality but tending to be a little soft. Of even greater hardiness than the foregoing are Starlight, Sunbeam and Ohta. They lack quality of fruit and are suggested only where Chief, Latham or Herbert fail.

Trials with the higher quality varieties are warranted after experience is gained with the hardy kinds and they are found to be fully dependable. **Gatineau, Madawaska, Taylor** and **Viking** are all top quality berries but lack the necessary winter hardiness to permit success under all circumstances. Where shelter is good, soil and moisture right, and winter protection given, these could be tried in a small way.

Stock: Planting stock is commonly secured from one of three sources; a nursery, a friend, or the growers own plantation. The paramount consideration is that the stock be free from disease; that it be healthy, vigorous and true to type. In particular, they must be free from virus diseases, of which mosaic and leaf curl are the two most common in Manitoba. They are systemic in nature and once a plant becomes infected no amount of spraying will stop the spread of the virus within the plant. It is spread from plant to plant by certain insects. The surest program for a healthy planting is to begin with healthy stock. A further precaution is to plant far enough away from old, diseased stock that there is no danger of the new canes becoming infected. The purchase

from a nursery of plants which are government certified as free of disease may in the long run be cheaper than gift stock. When digging plants from an old patch select only the largest, most vigorous, healthy canes of large diameter and well developed fibrous roots.

Time: Spring planting is considered the most desirable under prairie conditions. The canes should be set just as soon as the ground becomes dry enough to work properly, since the raspberry starts growth early. They can be set in early September when there is a liberal supply of soil moisture, or if there are facilities to apply water by hose or irrigation. When planting, exercise care to prevent the small fibrous roots drying out. Set the plants slightly deeper, 1 to 2 inches, than what they grew previously. For small lots planting is often done behind a shovel or spade.

Distance: Planting distances will vary, depending upon the moisture supply and the method of cultivation. Six-foot spacings between rows are satisfactory for the urban garden where water is available or normal rainfall exceeds 16 to 18 inches. Wider spacing, up to 8 feet between rows, is desirable in large gardens. This favors the use of large machinery for cultivation, provides more room for the plants to draw food and moisture from during dry spells, and facilitates mulching and fertilizing. Plants are commonly set from 18 inches to 3 feet apart in the row. While the shorter distances require more plants, it ensures a continuous row in less time. Another system of growing raspberries is in hills of 4x4 feet up to 7x7 feet. As in the continuous row the distance selected should be governed by available land, water supply and mode of cultivation.

Management

Clean cultivation is usually practiced throughout the prairies. Destruction of weeds, and raspberry suckers coming up between the rows conserves much needed moisture. To maintain soil fertility various mulching schemes are employed. One plan is to mulch the rows in October with straw, grass, leaves or manure. The following spring it is worked in as a soil improver. Another is to mulch every other row each year and cultivate the alternatives. After the mulch is down one season it is plowed under. A third plan is to scatter stable manure during the winter and this is dug or cultivated in the next year.

Training: The hedge row system of growing raspberry is commonly followed because of greater yields with less effort. The hill system requires more attention. Red raspberries spread rapidly because of their suckering habit and would soon develop into a jungle unless forcibly restrained. The rows should be kept narrowed to 18 inches or 2 feet. Nothing is gained by having the rows any wider since the canes in the center are too shaded to develop fruiting spurs properly. Generally fruit is produced only at the top on crowded canes.

Pruning: Most of the fruit is borne on canes of the previous year's growth. After the year-old cane has produced fruit it generally dies out during the fall or winter. It is of no further use to the plant and may be even harmful, serving as a carrier for disease or insects. The old canes should be cut out immediately after fruiting, or very early the following spring. Surplus and weak, spindly canes are best removed at pruning time. Spacings of 6 to 8 inches between the remaining canes result in a maximum yield of high grade fruit.

Pests: The most widely distributed insect pest on the raspberry in Manitoba is the Red Spider. This very small spider-like insect feeds on the undersides of the leaf and, when numerous, causes the foliage to become greyish in color, and the plants very unthrifty. Hot, dry weather is particularly beneficial to the spread of this insect. Since the raspberry is somewhat sensitive to chemical spray injury, care must be exercised not to apply harsh insecticides in concentrated form. Sulfuron and hydrated lime mixed in the proportion of 1 to 1, and dusted up through the plants on a warm day when the temperature is 70 degrees F., or over, has given fair results. One of the safest controls among the old remedies is to spray the undersides of the leaves with cold water under pressure. Repeat the water spray several times at 2 or 3 day intervals.

Diseases of the raspberry are numerous. Two of the most destructive are virus diseases, leaf curl and mosaic. Leaf curl causes the foliage to become deeply wrinkled, curled downward and very dark green in color. Mosaic develops as mottled green and yellowish areas on the leaves. It is best observed on the new foliage early in the season. Control must be thorough and rigid. Make frequent inspection of the planting. As soon as a suspected plant shows up it must be dug out and burned. At the same time the plants on either side are removed and destroyed. Two fungous diseases are commonly encountered, spur blight and anthracnose. The application of liquid lime sulphur at 1 cup per gallon or dry lime sulphur at three-quarters of a cup per gallon, applied in early spring just as the buds show green at the tip gives control. In severe cases an application of 3:60:40 bordeaux mixture one week before the blossoms open is helpful. The latter spray should be directed on the young canes.

Mice sometimes cause heavy damage, and particularly when mulching materials are used. Poisoning has been found

one of the most effective ways of keeping this pest under control at the Morden Station. Gophercide, a commercial product, is mixed with wheat, oats or rolled oats, according to directions on the container. In the fall about a month before snow flies, poison stations are scattered through the plantation. These may consist of old milk bottles, old tomato tins with the open end partly closed, two boards nailed together in V fashion and turned upside down, or small boxes with an opening at both ends. One to two tablespoons of the poisoned grain is placed in the container or on the ground under it. The bottle, or tin, is placed on its side under the mulch, straw or some plant material. Some covering over the bait station is necessary to attract the mice and to keep birds from getting the poison.

Winter Protection: Winter injury in raspberry may show up in several forms. The entire plant may be killed, both root and cane, or the cane (the portion above ground) is killed out while the root remains alive and sends up new shoots the following spring. Again the cane may survive while a portion of the buds may be injured, or the upper part of the cane dies while the lower portion is uninjured. These conditions may arise as a result of immature canes in the fall, extreme cold, lack of snow cover, scarcity of soil moisture, early fall frosts, or variable temperatures in the spring.

A deep blanket of snow is one of the best forms of protection for the roots. In seasons when the ground remains bare during very low temperatures it is helpful to mulch the soil as outlined under management. Oftimes a heavy watering just before freeze-up, usually late October, will prevent desiccation and subsequent injury in fall when the ground is dry. Over most of Manitoba, and certainly with the more tender varieties, some form of covering is desirable. The general practice is to bend the canes over and pin the tips to the ground with soil. Then a light covering of earth is thrown over the canes. In addition, every effort should be made to trap a maximum amount of snow in the planting. A light scattering of straw over the snow often checks drifting and prevents melting in mild spells. The following spring, about the end of April, the canes are straightened up and the soil pulled out from around the base.

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When transplanting perennials, make a hole of sufficient size, with spade or trowel (depending on the size of the root system), to accomodate the roots without crowding. Put plant in hole no deeper than it grew in the nursery. Work soil between and over the roots, and pack firmly with hands, feet, or tamping stick. Soak with water if soil is on dry side.

Possibilities for Fruit Growing in the Central Northwest

F. V. HUTTON

The information given was gathered from experiments and personal observations at the Rosthern Experimental Station, surrounding territory, and areas of similar climatic conditions in Manitoba and Alberta. The general title—Central Northwest—seemed most appropriate, as the area referred to is mostly Central Saskatchewan. Fruits which succeed as far north as Central Saskatchewan should succeed in Winnipeg.

In starting this paper I would like first to answer a question which is commonly asked, namely: Why grow fruits when the Eastern Provinces and British Columbia can do the job much better? There are four good and obvious reasons why, and possibly others more obscure.

FIRST: Personal interest. The urge which drove the late Mr. Stevenson and Mr. Chipman, and is still inspiring Dr. Seager Wheeler and others, to try all the fruits they could, was not for the money they expected to make from the venture. It was personal interest and an endeavor to overcome the handicaps of a severe climate. Hundreds of others have made, and are making the same effort, and their findings are of untold value to fruit breeders at the Government institutions.

SECOND: The vitamin content of fresh material is higher than from imported fruits or vegetables of the same kind.

THIRD: Tree-ripened flavor is superior to green picked in most fruits. People in the fruit growing areas of British Columbia pick their fruit ripe from the trees for their own canning, even though they may be strong in their recommendations of B.C. fruit over that grown elsewhere for the prairie dweller.

My FOURTH and last point is that many people do not have fresh fruits, at least not in sufficient quantity where they have to be purchased, while with hardy varieties and suitable conditions fruits can be grown in their own yards at little cost other than labor.

The next obvious question is, of course: Can we grow fruits? I will endeavor to answer this by giving evidence that we can. The early settlers around Prince Albert, Duck Lake and Carlton, who were trappers and fur traders, settled there about the year 1800. They had no prospects of raising fruits such as they were accustomed to in Eastern Canada or

Europe. They would have laughed at such a suggestion and, in fact, had grave doubts as to the value of the country for general farming. Winters were long, frosts struck late in the spring, summers were dry, and fall frosts arrived early. Annual crops which would mature between frosts could be grown, but most perennial plants and particularly apples and plums could never survive. To some extent these doubts were well founded as most apples and plums then for sale could not survive under favorable conditions at Morden. This was borne out in early testing by the late Mr. Stevenson, who did not find hardy varieties of apples until late in 1800. The early settlers had only to look about them, however, to see ample possibilities for fruit growing and improvement at any point in the park area, where trees grew voluntarily if fires were excluded. Strawberries grew abundantly in the open places in the timbered areas and around the sloughs on the prairies. Saskatoons, cherries, raspberries, gooseberries, currants, high-bush cranberries, and others, grew in most bluffs and in the solid timber. Blueberries were plentiful in the pine forests or where soil was somewhat acid. All these fruits were so abundant in season that they were taken as a matter of

course and made up considerable of the diet as fresh fruit, and dried and in pemmican at other times. While none of the native fruits of that area have been improved to the extent that they are valuable as cultivated forms, they did pave the way for other fruits. The optimistic, horticulturally inclined men reasoned that where wild fruits would grow in abundance, fruits introduced from other countries of similar climate should do equally well. The more observant may have noticed that even the hardy native fruits did best where well sheltered by trees or other natural conditions, particularly on the north and west. Some may also have observed that the best trees were on the north or east slopes, and those favored by a good supply of moisture. Observations in recent years bear out the preceding points and our recommendations on fruit production are based on many of these observations. The following points are most strongly advised for the consideration of prospective fruit growers:

(1) Choose land with an east or north slope, if possible, and if above a large body of water you are particularly favored. Unless precautions are taken to retain water run-off around trees, they are better on level ground.

(2) Supply or locate a substantial windbreak to the north and west. A single row of trees or a hedge will suffice on the south and east. Do not plant fruit trees too close to shelterbelt.

(3) Plant on well prepared land. Space trees well. Lean trees to south and west and leave strong branches on that side.

(4) Clean cultivation is advised to conserve moisture and it aids in reducing mouse damage.

(5) Low habit of growth is advised as trunks are protected against sunscald; fruits is exposed less to wind and is more easily picked.

(6) Fence to exclude rabbits and it may be necessary to poison mice. (12-pound lump resin in one gallon cheap methyl alcohol—1 1-3 gallons did 900 young trees.)

(7) Only hardy suitable varieties adapted to the district should be grown. Recommended lists are revised each year by Experimental Stations, and it pays the grower to keep up to date.

(8) In the drier areas, particularly in dry seasons, watering is very desirable.

The Scott Station has been conducting an interesting experiment, watering fruit trees from a dugout, which is worthy of mention where seasons are likely to be dry and water can be made available. After two summers' growth there was a marked difference in size and thrift of trees.

Conserve snow water and heavy rains by planting on level land, or making dams on low side of each tree.

What is the prospect for the future in fruit growing? Fruit growing in the area I am speaking of should be confined to the needs of the grower, or his immediate neighbors, and with this in mind there is a very good list of hardy crabapples, a few apples, good hardy plums, plum hybrids and cherries to choose from.

At the present time there are many thousands of young seedling fruit trees being grown and, when these commence fruiting, it is likely that changes will be made in the fruit lists. The addition of more large apples, pears, apricots, and better quality crabapples and plums is quite possible soon. In small fruits, varieties resistant to cold, drought, insects and disease are needed in some fields, while better fruiting habits are required in others.

The promise for the future should be brighter as there are now one hundred growers, where at the turn of the century there would be one, and there are now hundreds of thousands of seedlings being grown where earlier there were thousands.

(Reprinted from 1941 Winnipeg Flower Garden)

Manitoba Fruit List

Prepared by The Extension Service
Manitoba Department of Agriculture, 1948.

CRAB APPLES - -	Osman, Bedford, Robin, Dolgo, Rescue, Florence, Trail, Rosilda.
APPLES - - - -	Heyer 12, Moscow Pear, Charlamoff, Hibernal, Patten, Mount, Waukon, Haralson, Manan, Manitoba Spy.
PEAR - - - - -	Ussurian, Tait Dropmore.
PLUM - - - - -	Mina, Bounty, Dropmore Blue, Dandy, McRobert, Norther, Pembina, Ojibwa, Mandarin, Radisson.
CHERRY PLUM -	Manor, Dura, Sapa, Ezaptan, Mordena, Mansan, Compass, Opata, Convoy, Heaver.
SAND CHERRY - -	Manmoor, Mando, Brooks, Black Beauty.
APRICOT - - - -	Scout, Anda, Robust, Morden 601, Sing.
GRAPES - - - -	Select Native, Beta, Alpha, Blue Jay.
RASPBERRY - - -	Chief, Ruddy, Latham.
RED CURRANT - -	Diploma, Red Lake, Stephens, Prince Albert.
BLACK CURRANT -	Kerry, Climax, Boskoop Giant, Buddenborg.
GOLDEN CURRANT -	Crandall.
GOOSEBERRY - -	Pixwell, Abundance, Thoreson.
STRAWBERRY - -	Dunlap, Premier, Gem, Burgundy, Sparta.

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Suitable protection against late spring or early autumn frosts lengthen the period when the garden may be enjoyed.

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When sowing small black seeds, a small amount of talcum powder put in the seed envelope and well shaken will whiten the seed so that it can be seen against the black earth.

Preserving Fruits

MARION T. HAIG

In this day when food is so precious, the housewife has a very important role to play in our economic system. She is asked to preserve more food to reduce living cost and avoid waste.

There is an abundance of wild fruits found on the prairies in most years. This supply can be supplemented by the cultivated fruits developed for our prairie home garden conditions. It is here that the housewife plays her part. With a little time and thought, she can preserve these fruits so that they are used over a twelve-month period. Fresh frozen canteloupe salad or Saskatoon pie may be enjoyed in January.

To preserve fruits sucessfully, two things must be accomplished, — first, stop enzyme action; secondly, kill or inactivate destructive organisms, such as bacteria, yeasts and molds.

Let us now consider how these two things are achieved in the two more popular methods of preserving fruits, namely, — canning and freezing.

The three methods of canning are:

1. Open kettle
2. Pressure canner
3. Boiling water bath.

The objection to the open kettle method is that, although the bacteria may have been killed in the boiling process, there is danger of further contamination by exposure to the air in transferring the fruit from the kettle to the sterile jars. Because most fruits have a naturally high acid content bacteria will be killed in reasonable length of time at boiling temperature, therefore, the high temperature obtained under pressure is not necessary.

The most popular and satisfactory method of preserving fruit has been found to be the boiling water bath. A sufficiently high temperature can be reached to kill bacteria and yet not destroy the texture of flavor of the fruit.

Preparation of the fruit for either canning or freezing is important. Use only freshly gathered, unblemished fruit in prime condition. Organisms which cause spoilage thrive in overripe or partly decayed fruit.

Organization of your work to avoid waste of time and material is essential. Delay in any step of the preparation may mean the difference between success and failure. Speed is one of the greatest secrets to successful canning and freezing. Fruit must be thoroughly washed to eliminate any dirt

particles which may harbour destructive organisms. To insure a perfect seal in canning the jars must be free from nicks, cracks or uneven places on the rim.

To preserve fruit by freezing the bacteria is inactivated by keeping the fruit at low temperature — zero or below. The destruction of enzymes is not so easy. Enzymes are present in all fresh fruits. Up to a certain point they are useful because they are responsible for the steady ripening of the fruit. However, after a normal ripening process is completed, if the action of the enzyme is not controlled decay will result. Exclusion of air or extreme heat will control this growth. To exclude air during freezing the fruit must be completely covered with either a sugar-water syrup, or syrup formed from the juice of the fruit and sugar, and packaged in moisture vapor-proof containers.

In experiments conducted at the Fruit and Vegetable Procesing Laboratory, Morden, best results in preserving fruit by freezing have been obtained from sugar pack. In the sugar-water syrup the fruit holds its shape better than with plain sugar. This is explained by the sugar drawing the juices of the fruit through the skin by osmosis. The result is seen in a breakdown in texture of the fruit tissue. More of the natural flavor is retained in the sugar pack treatment.

Undoubtedly, the modern method of quick freezing fruits and vegetables has many advantages over the canning method. The product has more of a garden fresh flavor, color of the fruit is preserved and a maximum of the food nutrients. The high temperature necessary for canning fruit destroys many of the vitamins. With freezing there is a saving of time and an escape from the necessity of working over a hot stove in the heat of summer. If you are not fortunate enough to own a quick freeze unit in the home and have to use a locker in a quick freeze plant, it is sometimes a problem to obtain the frozen product when required.

Whichever method is used, our native or cultivated fruits should be conserved for winter use. Until more people can have their own quick freeze unit, the old-fashioned canning method will probably be the more popular.

On Garden Pictures

It takes much experience in gardening, much observation of other people's gardens and some artistic sense to produce satisfying garden pictures. I don't mean photographs. I mean living pictures made with flowers in your own garden. And I am not talking about landscape gardening or prize gardening. Sometimes a prize garden is also a garden picture, but quite often its prizeness is its well-keptness. It has a very satisfying look about it, but that is not what I'm talking about. The garden picture is often a little thing, and quite often a transient thing. That's why you have to have a good deal of experience in gardening, and sometimes a bit of luck, too, to produce it. It can be produced in quite small gardens and easily missed in big ones. It is that peculiar association of flower with flower, of color and form with form that strikes us as a lovely garden.

A garden picture may be made of only two plants or of many; of only one or two colors or of several. You have to choose and make your own. What pleases you may not please another; your neighbor's masterpiece may look like an Old Folks' Home to you. You may treat my suggestions with a shrug of your shoulders. I don't mind. It's not exact directions but the idea that I want to get over to you. So, anyway, here are some flower combinations which I have thought made lovely garden pictures: Adornis vernalis and Anemone montanum; cherry red tulips near white spirea; pale yellow tulips with Mertensia virginica; orange and yellow tulips over white arabis; white Siberian iris with blue aquilegia and one or two Iceland poppies; Phlox canadensis with tulip Clara Butt; Russian almond with Mertensia virginica, white and violet, and Viola missouriensis; blue Siberian iris with pink Dianthus plumarius. Every one of these groupings was very small. Any Winnipeg garden could accommodate them and they are so much more beautiful than the set rows of low, medium, tall that one so often sees in both perennial and annual beds.

So I urge you to observe the flowering of your neighbor's gardens and of our public gardens. Note times of blooming and conditions of culture and make a try at painting a little garden picture of your own next year.

(Reprinted from 1939 Winnipeg Flower Garden)

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Zinnias appreciate a fairly heavy, rich loam. Additions of rotted cow manure and commercial fertilizer will produce sturdy plants.

Larkspurs

Our Annual Blessing

T. O. GRAHAM

"I shall plant larkspurs in a garden
On a hill that climbs so high;
You'll never guess, unless you stop to question
Which blue my larkspurs are, which blue the sky."

No wonder the poets burst into song when they view the modern Larkspur. This gorgeous annual has been greatly improved in recent years with a wealth of new, warm colors, taller flowering spikes, and full double florets. The modern types are far removed from the old-fashioned forms that one so well remembers in many a past garden. The new introductions grow in tall pyramidal form, and present in all their graceful elegance, lively and delicate tones of azure, rose, white, violet, lilac, mauve and carnation. So wide, in fact, is the color range, that it is doubtful if Larkspurs are surpassed in this respect by any other hardy annual, with the exception of Sweet Peas.

Larkspurs are one of the best outdoor sown annuals. Remember, this flower has a large seed, which makes it easy to grow when sown outside, but it prefers a cool soil, and unless sown when the weather is cool, germination is liable to become irregular. Seed can be sown outside very early in the spring, probably during most seasons close to May 1, as once Larkspurs come through the ground and are established they will withstand several degrees of frost. To those who do not wish to risk real early planting, seed could be sown in the spring when trees begin to leaf and plants could later be thinned where they stand from eight to fourteen inches apart each way in the border. One can even put off planting as late as the end of May, and flowering plants will then be produced toward the first part of August and give a continuous succession of flowers from then until frost time in the fall, a record that is surpassed by very few other annuals. Seed generally takes two weeks to germinate, although it may take as long as four weeks.

Sowing just before freeze-up in the fall is often a success. On many occasions Larkspurs will self-sow in the fall and come up in vigorous volunteer growth the following spring.

Often the handsomest spikes are produced by starting the seed inside close to April 1, later pricking off the plants into

larger boxes or cold frames, hardening off the plants, and transplanting them outside when danger from frost is past.

At Winnipeg, the plants will vary in height from two to five feet. Well-spaced and interplanted with Gladioli they present a delightful effect; while in groups in mixed borders, and, of course, at the back of annual border, they are ideal. Clumps of separate colors give a most pleasing effect, and it is also striking to have some of the patches with all the colors mixed. In their free, graceful habit they are very effective when interspersed in the old-fashioned shrubbery border. To avoid the temptation of cutting the flowers from these positions a batch should always be grown especially for cutting, as a vase of one or mixed colors is indeed charming.

The Larkspur in Winnipeg grows with conspicuous success. Within the city area will be seen the soft-toned, stock-flowered types, as well as the members of the tall graceful Giant Imperial group. Among the newer varieties Super Majestic Rose Pink, Dwarf Stock Flowered Rose Pink, and Stock Flowered Purple, and Deep Rose Rosamond are distinctly beautiful.

(Reprinted from 1941 Winnipeg Flower Garden)

WINNIPEG HORTICULTURAL SOCIETY

Calendar of Contemplated Activities for 1949

FEBRUARY -	-M.H.A. Convention, 15th, 16th, and 17th.
MARCH - - -	-Two General Meetings.
APRIL - - - -	-General Meeting.
MAY - - - - -	-General Meeting.
JUNE - - - -	-Peony Show. Rock Garden Competition. Perennials Competition.
JULY - - - -	-Basket Picnic. Vegetable Garden Competition, sponsored by the Free Press.
AUGUST - - -	-Home Grounds Competitions. Flower, Vegetable and Fruit Show.
SEPTEMBER -	-General Meeting.
OCTOBER - -	-General Meeting.
NOVEMBER -	-Annual Meeting.

Help Boost Our Membership

Lilies

F. L. SKINNER

The experience of the past twenty years has shown that the Lily is one of the most satisfactory bulb plants for Western Canada and should equal the Gladiolus in popularity. Gladioli are pre-eminent as cut flowers but as a garden plant the Lily has certain advantages not possessed by the Glads. In the first place the Lily does not require annual lifting and storing of the roots over winter. Also the flowering season is a long one. The sweet-scented yellow Monadelphum sometimes offers its first flowers towards the end of May and can be relied upon to flower during the first half of June, then there is a long procession of color until we reach the end in September when Lilium Henryi makes a good display.

Some of the Lilies are also among our easiest flowers to grow and even the veriest amateur can succeed with such varieties as the Candlestick Lily (Lilium dauricum), the Coral Lily (L. tenuifolium, or as it is more often named now L. pumilum), and the Tiger Lily (L. tigrinum) provided he will take care to plant the bulbs right side up in a soil that is not wet and sodden over winter. On the other hand, for those who fancy themselves plant wise, there are Lilies that will tax the skill of the most experienced gardener to grow them well in this climate. L. Farrerii and L. Wardii are two of these, both are hardy but seem to require a slightly acid soil and fairly continuous moisture during the growing season. All Lilies can stand an abundance of moisture during the growing season but only when good drainage is provided. The surest way to eventually kill Lilies is to locate them where there will be stagnant moisture at the roots. Even the Meadow Lilies of the east, L. canadense and L. superbum, though they like a rich moist soil in the summer must have a well drained location. L. canadense with its pendant bells is one of the most graceful of all the Lilies.

L. auratum, the Gold Banded Lily of Japan, is one of the most fragrant and showiest of all Lilies and always attracts attention. Unfortunately, cultivated bulbs from Japan are frequently infected with mosaic and partly on that account this Lily has not been cultivated very successfully so far. Another reason why this Lily has not been more successful is that there are both northern and southern races and early and late flowering strains. An early flowering strain came to us two years ago as collected wild bulbs. These started to flower early in August; the bulbs have come through the past winter in excellent condition. Apparently the Gold Banded Lily does best on a frugal diet as these bulbs were planted in

a prepared bed where the soil was removed to a depth of 15 inches and replaced with a mixture of sand, leaf mould and ordinary garden soil.

The Regal Lily, with its glorious trumpets and exquisite perfume, does quite well if planted as flowering bulbs in the spring but it is not realiably hardy under ordinary conditions and it might be advisable to plant it about six to eight inches deep in a specially prepared bed such as we used for L. auratum.

With the work that is being done on Lilies today on this continent and in Europe it is not too much to expect that we will have a truly regal Lily as easily grown as the Candlestick Lily is at present.

(Reprinted from 1938 Winnipeg Flower Garden)

The Marigold

H. A. LOWDEN

The Marigold provides many varieties that are useful both in the flower border and for house decoration. The varieties are of a wide range as to height, size and kind of bloom and period of blooming.

In the old land the Calendula is often spoken of as the Scotch Marigold, but here we consider only the varieties of Tagetes as Marigolds. In size the Marigold ranges from the French Pigmy of about four inches in height to the African and tall French Marigold which grows to four feet or more.

In setting out a flower border, all flowers, except those used for edging, can best be displayed by planting them in groups, and the Marigold is excellent when treated in this way. For edging use the French Pigmy or the Tagetes Golden Gem; they are both very dwarf and are also very floriferous; the Golden Gem especially is a great producer of bloom and is covered with small, single, golden yellow flowers from the latter part of June till frozen down in the fall. The dwarf French and the Harmony French Marigolds are not satisfactory as edging plants, the dwarf French because it has too much foliage and the Harmony because it is of variable height, according to the kind of season, one year it will grow twelve inches and another year it will be sixteen inches, coming above flowers such as Snaps, planted behind the edging.

The Guinea Gold varieties provide perhaps the best show in the Garden and are also quite good as cut flowers, the strains having odorless foliage come in this group. In height they range from twelve inches to two and one-half feet. The flowers are double, of a bright orange gold color and the petals are arranged in a manner similar to those of a carnation. The plant is of a branching form and the blossoms are produced on stems that radiate from the central stalk so that when in full bloom they make a great show; they come into bloom about three weeks later than the dwarf French varieties. The tall African Marigold grows to between three and four feet; the compact ball-shaped heads of blooms, produced well to the top of the plant, make it very valuable for the background of the garden; it, however, is late in blooming, requiring almost four months from seeding to maturity.

There are two strains of Marigolds that deserve special attention for their beauty, one, the hybrid Red and Gold, developed by Burpee and Company, by crossing the French Marigold with the Guinea Gold. The flower produced is a brilliant orange with crimson markings of irregular shapes. It grows about two and one-half feet and bears bloom of fine

quality in abundance. The second is the tall French Marigold, very fine as a cut flower; it has wiry stems, is marked with crimson stripes or blotches, and is very desirable; it should be planted well to the back of the border as it grows quite tall.

Marigold do not require a particularly rich soil, in fact, the striped and blotched kinds produce flowers of better coloring in poor soil where root pruning is practised.

(Reprinted from 1941 Winnipeg Flower Garden)

Zinnias in the Flower Garden

JOHN WALKER

There are many reasons why Zinnias deserve a place in the flower garden. In addition to the more robust, rather coarse-growing, large-flowering, well-known types, there are many delicate, interesting, refined and graceful forms. The range of flower color and unusual color combinations have also increased during the past decade or so, thereby adding to the value of this flower.

Besides these specific ornamental values, Zinnias are easily grown; they are free-flowering, and continue to blossom throughout the season; they withstand drought reasonably well, and, as may be recalled, are popular and suitable exhibition flowers. Despite a degree of stiffness and coarseness in larger Zinnias, smaller sorts provide a splendid variety of cut blooms for vases and bouquets. As a cut flower the Zinnia has lasting qualities.

As already stated, Zinnias are easily grown. The more robust forms may be sown outdoors where they are wanted to bloom. Sowing should be withheld until around May 15, when the soil will have warmed up sufficiently to bring about rapid germination. The soil should be well prepared, and thin sowing should be practised, because the plants should be from four to twelve inches apart (small and large types, respectively) for best results. The same distances between plants apply to those started indoors early and planted in the garden later.

Generally speaking, a position in full sun is desirable. The soil for Zinnias should be reasonably rich, and contain a generous amount of decayed organic matter. The high-lime soils of Manitoba are suitable for Zinnias. Zinnias are also more or less spreading in habit of growth, and, in the garden, blend well with other flowers. Because of this habit of growth they are desirable for mass effect in borders or beds.

Plants may also be started indoors; this method may be most desirable if only a few plants are needed. Plants quite large enough for setting in the garden about the end of May can be secured if seeds are sown as late as April 15.

As growth proceeds the plants may be induced to branch by disbudding or removing the first bud; this particularly applies to the stronger growing types. It is needless to point out that the taller-growing sorts should be placed towards the

back of the border, with the dwarf types placed towards the front of the border.

Zinnia Types

No matter what type is planted there is likely to be some variation in the form, doubleness, and color of the flowers produced. Likewise in plant type and height there may not be the same degree of uniformity as is found in strains of some other flowers. Some strains will vary more than others, and the larger-flowered types may vary more than the smaller-flowered types.

This variation is explained by the fact that, in order to have seeds developed on a fully double head, there must be cross-pollination; that is, the best types for garden beautification are fully double, but the florets of such flower heads do not produce any pollen (or very little), and, because the pollen must come from another head or plant, the same degree of uniformity as results from self-pollination, cannot be secured.

California Giants, Dahlia-flowered and large-flowered types usually reach a height of two to three feet; the average size of bloom is from four to five inches; semi-doubles may be about as plentiful as fully double blooms. California Giants are considered the best of this group. There are named varieties and good mixtures.

Fantasy and Picotee types usually produce a high percentage of double blooms; the plants average about eighteen to twenty inches in height, and the blooms from three to three and one-half inches. The Picotee types are not always stable in color markings.

Lilliput and Pumila types average around eighteen inches in plant height; bloom size is from one and three-quarters to two inches, those of the latter type being slightly the larger. Blooms of these types are usually very deep when fully developed, and are ideal cut blooms, or for exhibition as small Zinnias.

Scabious-flowered Zinnias (flower head of tubular florets chiefly) will be double very largely, up to two and three-quarters inches. Plants grow to a height of about two feet. Another interesting type is the Crested Zinnia, in which the doubles will not be high.

Tom Thumb Zinnias are likely to be very variable in plant and bloom size as was seen in some Winnipeg gardens in 1940. They are dwarf in habit of growth, and the blooms an average size of one to one and three-quarter inches.

Zinnia Haageana is a most useful border plant growing to a height of twelve or fourteen inches. There is a wide range of color including bicolors (purple or bronze and yellow). The percentage of double in Z. haageana will be high. The blos-

soms are about the size indicated for Tom Thumbs, and, when in full bloom, a few plants of this species make a grand show.

Finally, it should be observed that Zinnias are comparatively free from insect pests and diseases. If heavy watering is practised, blight may cause losses. At the University of Manitoba, Gold Finches have played havoc with flower beds containing mature seeds and left unprotected. These birds seem to be very fond of Zinnia seeds!

(Reprinted from 1941 Winnipeg Flower Garden)

Gloxinia As a House Plant

C. D. TAPER

Out of the conservatory class of florists' plants now steps the nearly stemless, sub-tropical Gloxinia (Sinningia speciosa). Its richly colored, widely flaring bells, rising above broad, velvety, conspicuously-veined leaves make it incomparable for a window-sill in the home. Few house plants are so showy in bloom, or so distinctive in foliation.

Borne in great profusion, the flowers may be colored pink, red, purple, blue, or white. Sometimes the throats alone are white. Often the blossoms are marbled with darker shades. Some may have petals margined with a band of contrasting color.

During this present month of December tubers of Gloxinia already are being offered for sale in Winnipeg. One or two-year-old tubers make the best plants. Though they are usually sold in mixtures, it should be possible for a fancier to obtain named varieties. These include: Burnhilde, a pure white; Monterey Rose, a very desirable pink; Etoile de Feu, a vivid red, and Sky Blue, which is a near purple.

When tubers are readily obtainable not everyone is interested in starting Gloxinias by other means. However, many fine Gloxinias in homes have been easily produced from leaf cuttings. A leaf or two may be detached from a plant with impunity. The simplest way of doing this is to take an entire, partly matured, medium-sized leaf, including the leaf stalk. Preferably, this is done after mid-summer. The cuttings should be inserted in warm, just moist sand in a pot. It is not necessary for the blade of the leaf to touch the surface of the propagating medium, as the new tubers are formed at the base of the leaf stalk. The young tubers formed are rested through the winter in dry sand.

When leaves are not available, propagation may be by means of the exceedingly tiny seeds. With the aid of a flat-bottomed tumbler these are pressed into the surface of a sifted, light, sandy compost in an earthen pan. The seed bed is kept moist by placing the pan in a dish of water whenever signs of drying appear. A loose covering of glass or paper will prevent a too rapid evaporation of moisture. To lessen damping-off this covering should be removed as soon as germination takes place. The seedlings should be protected from the direct rays of the sun, as the foliage is easily burned, especially when wet. As soon as the little plants are large enough to handle they should be thinned out or spaced three inches apart in a flat. Finally the plants should be transferred single into five-inch pots. Seed pans will do, for Gloxinia is

not deep rooted. An easily prepared potting mixture, entirely satisfactory for Winnipeg, consists of three parts of silt loam, one part of sharp sand, one part of fine peat, with a small portion of bone meal. The soil does not have to be especially acid. If sifted, this soil mixture is a suitable one in which to start the seeds. Seeds sown during January or February will produce plants in bloom within seven months.

To obtain bloom within four months, mature tubers should be started in February or March at 70 degrees Fahrenheit. Under greenhouse conditions Gloxinia may be brought to bloom at any time, but it is naturally a summer or early fall bloomer. It is easier to have it flower in these seasons.

The amateur will find that the culture of this fine plant poses few difficulties. It is happiest at a temperature of 70 degrees Fahrenheit. It is a plant for east or west windows; but may be grown in south windows, if these are shaded by thin curtaining. Though a free circulation of air is necessary, direct currents should be avoided. It is advisable to avoid wetting the leaves, for this is likely to result in the appearance of brown spots which gradually extend their size until the green area of the foliage is so lessened that the health of the plant becomes adversely affected. The potting soil should be kept just moist. A too dry soil, or an excessively wet soil, will result in root rot. This, in turn, prevents the maturing of flower buds into blooms. It should, however, be noted that bud blast may come from other causes. These may be mold fungus, poor ventilation, an infestation of mites, or too much sun.

After flowering the Gloxinia should be dried off gradually over several weeks. This is done by reducing the moisture supply. As the leaves die down the process should be intensified. After the foliage has ripened the tubers may be winter stored in dry sand. In the home it is usually simpler to merely leave them in their pots, which should be put in a dry place at a temperature of 45 to 50 degrees Fahrenheit.

If these requirements are fulfilled, Gloxinia tubers will flower satisfactorily for several seasons. Few plants will provide so ample a reward for so small an expenditure of effort.

Goldfish in the Garden Pool

By J. C. WILLIAMS

Why not have a pool in the garden next year? If necessary a small one can be built with a minimum of expense. A little planning as to location, size and shape is all that is necessary to awaken enough enthusiasm to get the project underway. However, it is not my intention to dwell on the building of the pool but rather the use of goldfish in the completed pool.

While the pool itself has many points of interest, especially when aquatic plants are placed in it, there is nothing that adds the finishing touch like a few goldfish. They give the animation that is otherwise lacking and will certainly be the centre of attraction in any garden.

One does not have to be an expert to keep goldfish, although the study of them is an interesting pastime. With reasonable care they present no particular difficulties. Local pet shops normally keep a good supply on hand and information regarding them is gladly given.

Goldfish originated through selection and cross-breeding of the Carp family and range in development as follows: Common Goldfish, a heavily scaled fish and therefore able to withstand considerable abuse due to faulty management. Comet, sometimes innocently confused with the common goldfish owing to similarity in color, has a trim body and long tail and, as the name implies, is slim and has the ability to move like a flash in the water. Nymph, short, oval body and long, broad tail. Shubunkin, long body and short tail. American Fantail, long body and fan spread double tail. Japanese Fantail, short oval body and fan spread double tail. Chinese Telescope, oval shaped body with protruding eyes, single or double tail, and others.

Many of the above are available locally, varying in price, depending on the variety and how perfect the specimen.

The Fantails are very attractive and many people prefer them to the single tailed type. Fish with extremely long finnage, while more valuable, are less interesting due to the fact that they are slow moving.

It is unnecessary to purchase large fish as they grow quite rapidly and considerable pleasure can be had in watching them grow.

Care must be taken not to place the fish in the pool to soon after building as cement releases much free lime which dissolves in the water, causing injury to the fish and may result in a complete loss. The pool should be properly seasoned or cured. It is necessary that it be soaked and emptied at least

three times, each soaking requiring a minimum of 48 hours between each drain and refill. After this it should be safe to transfer the goldfish to their new home.

Practically any kind of water may be used, city, river, spring or even rain water, provided none are polluted.

Fish must not be crowded. A good rule is to provide a minimum of one gallon of water to each inch of fish, excluding the tail. In other words the larger the fish the greater amount of water necessary per fish.

It is not only desirable but essential to have water plants of some sort in the pool with the goldfish. They absorb the carbon dioxide given off by the fish and in turn provide oxygen so important the fish. They also provide some degree of shade from the hot sun.

Water lilies are inexpensive and come in a variety of colors, many of which are very fragrant. They can be kept from year to year by planting them in a box or basket and removing the whole thing to the basement in the fall. Another method that has proved very satisfactory is to have one or more depressions in the bottom of the pool, depending on the size, about 10 or 12 inches deep. The lilies planted in this fashion are easily removed and can be placed in a container of peat moss and, kept moist throughout the winter months, will be in a vigorous condition the following spring. A wooden butter box is ideal for this purpose.

Water lilies and many of the ornamental pool plants, while very attractive and decorative and certainly a must for the pool, are poor oxygenators and, as the fish are heavy oxygen consumers, the use of such plants as Vallisneria, Anacharis, Cabomba and Lotus are recommended. Water Hyacinths and Water Lettuce are also very useful. They are floating plants and it is on these that the female usually deposits her glass-like eggs. The eggs are barely visible in the water but careful scrutiny of the plants will reveal them.

When the eggs are located the plants to which they are adhered should be removed and placed in shallow pans and kept at a temperature of approximately 78 degrees. The eggs will hatch in about seven days. After a few days powdered fish food may be sprinkled on the water for them. When sufficiently large to take care of themselves they may be gently placed back in the pool.

Pond snails and tadpoles are often used as scavengers although the amount of refuse they actually consume is negligible. The latter, unfortunately, soon learn to eat the food intended for the fish and then their usefulness as scavengers is at an end.

A pool attracts many insects which deposit eggs on the water where the larva will develop. Mosquito eggs hatch into

wigglers and are choice morsels for goldfish. So plentiful does this kind of food become that it is seldom necessary to feed the fish oftener than twice a week.

There are many kinds of fish food available in the stores. But ordinary breakfast oatmeal, crushed small, is a very satisfactory food for goldfish although the periodic use of prepared fish food is advised as a change of diet. Care should be taken that the fish are not overfed even though they always appear hungry. Uneaten and decayed food at the bottom of the pool, or aquarium, breeds disease.

They are capable of living in water at very low temperature and will, in fact, survive under a considerable thickness of ice. However, due to the severity and length of the winter in this part of the country, it is necessary to bring them indoors when sub-zero weather comes. Actually this is no problem. All that is required is an aquarium large enough to accommodate the number of fish one intends to keep. This can be purchased at a moderate cost from any dealer or, if the owner is handy with tools and is sufficiently ambitious, one can be manufactured using plate glass set in a metal framework and sealed with aquarium cement. Care must be taken that the metal does not come in contact with the water as the chemical action is injurious to the fish. It is a mistake to keep goldfish in a small glass bowl as this is a cruel habit and should be avoided.

Generally speaking they should be kept in a place where the temperature of the water will not become too high, as the cooler the water the more oxygen content. If the temperature is kept down and a good balance between plants and fish is made it is seldom necessary to completely change the water during the winter. Given a reasonable amount of light they can be successfully kept in the basement.

If Algae, a green vegetable matter created by the action of the sun, forms too badly on the glass it can be easily wiped or scraped off. This can be done by either partially emptying the aquarium or allowing the scrapings to settle on the bottom where it can be easily siphoned out.

Thoroughly cleaned fine gravel should be placed in both the pool and the aquarium. In the case of the aquarium it should be piled toward the sides and rear. This will cause the refuse to collect in the front where it can be easily siphoned out occasionally.

As with the pool the aquarium should be well planted to provide oxygen. Many of the plants previously mentioned can be used. Some of those used outside can be brought in and planted in the aquarium. In this way it is possible to carry them over from year to year.

Garden Competitions

HECTOR MacDONALD

The Winnipeg Horticultural Society is responsible for organizing and judging several competitions each year. There are perennial and rock garden competitions in early summer, followed later on by home grounds, lawn, window box, flower garden and vegetable garden competition and, of course, the flower and vegetable show. The Society provides the prizes in most of the competitions, but some are sponsored by newspapers.

Each of these competitions is held for the purpose of stimulating interest in the various branches of horticulture to which they apply. However, the writer does not intend to discuss each competition separately, but select items of interest which apply to all phases of horticulture and to home grounds in particular. Many Horticultural Societies, instead of having competitions for special subjects such as rock gardens, merely have home grounds competition. Furthermore, most home occupants are interested in improving the surroundings of their dwelling, but may not have the time or interest to specialize in the other contests.

Most societies have score cards, which allot a certain number of points for appearance, cultivation, freedom from insects and diseases, etc. A prospective exhibitor should study these score cards and make sure that he will collect some points for each section mentioned. A good score can be ruined by one weak section. A competitor may have top score on all subjects, but a poor lawn will bring down the total score. The score cards, to a great extent, control the judges, and is the yardstick by which an entry's merits are measured.

A word or two about "what judges look for" is in order here. Probably first is insects and disease. This is an important item, lack of control of insects and disease is poor gardening, and there is the danger of infection spreading to other areas. A judge cannot award points where disease and insects are present. Weeds, if present, are sure point losers. However, weeds are seldom seen in well kept home grounds. As a rule, weeds are in better control than insect pests and disease .

Neatness is essential for a prize-winner. An untidy yard loses many points. Garden tools and equipment should not be left around. It isn't good for them and at the same time spoils the appearance of the place. Dead and withered blooms, unsightly seed pods and withered leaves should be

removed. Plants that require staking should be supported. Shrubs and trees must be pruned enough to be symmetrical. Pruning can, however, be overdone, and it never should be so severe that the characteristics of the tree or shrub is lost. Some formal landscape plans have trees and shrubs pruned to particular shapes, but the modern trend is to a more natural appearance in trees and shrubs. A severe formal plan hasn't the appeal of an informal lay-out.

A careful blending of flower colors, an attractive, graceful shrub, two or three comfortable chairs or a bench can go a long way to give an atmosphere of rest and relaxation, which is much to be desired in the outdoor living room. The use of too many garden ornaments should be avoided, a bird-bath or fountain is usually sufficient to round out the plan.

Some home owners prefer to utilize their spare ground as a vegetable garden, or to provide play facilities for their children, rather than devote that space to ornamental planting. This should be taken into consideration when home grounds competitions are being decided. After all, if the grounds are neat and some ornamental planting done, the owner is adapting his land to suit his requirements. Someone has said "Variety is the spice if life." This applies forcibly to home grounds. If all the homes on our cities' streets were laid out to the same plan, the effect would be rather monotonous. A variety of plant material, an unusual planting plan, an obviously established uncommon shrub are all points-getters in competition. All things being equal between two competing home grounds, the balance will be tipped in favor of the one that shows a touch of individuality. Where space is available a well-laden fruit tree is always an attractive feature and to be preferred to a non-fruit bearing tree or shrub.

If there are objectionable or unsightly features, such as walls or garbage cans, an effort should be made to conceal them as much as possible by careful planting. Walls or board fences can be covered by vines. Ornamental fences or, in fact, any fence should be styled to fit in with the landscaping plan, and should be in good repair. A broken fence or sagging gate is not attractive. Where hedges are used as boundary lines, they must be pruned and free from insects.

Window boxes are taken into consideration when judging home grounds. A separate entry may be made for this class. Color is important here, and the color scheme of the house must be considered when planting window boxes. Either a pleasing contrast to the color of the walls or a harmonious blend with the general color scheme is desirable. A too vivid contrast is harsh or the blend may be too flat and insipid. The plants growing in the box should not be too high. Otherwise

they will then usurp the main function of the window as a medium for admitting light to the dwelling. Trailing plants are a necessity and should be free flowering varieties if possible.

When a lawn is included in the home grounds it becomes a very important feature. A lawn is not a necessity and some plans would be more attractive without a lawn or a grass plot. A small plot of grass where space is limited detracts from the appearance of the yard, and it is very difficult to keep in good condition. In the writer's opinion, lawns are difficult to judge as a separate class, as there are many factors that must be considered. However, a dense, even carpet of grass is desired, free from weeds, particularly plantain, dandelions and couch grass. The color should be even throughout with no dark or light patches, and a good healthy green or bluish green color depending on the variety of grass used.

Garden competitions are worthwhile endeavors for any horticultural society to undertake, and the members should support them whole-heartedly by entering the various competitions. All the competitors in any contest can't win prizes, but they can gain experience, useful information and a whole lot of satisfaction from competing. After the judging has been completed, each competitor should receive a copy of the judges' score card for his entry, by this he will readily see where points have been gained or lost, and can remedy any faults in the future.

Judges being human, a certain amount of individual likes and dislikes enter into their work. The score card system minimizes this, and the tendency, if any, for individuality can be further reduced by having two judges. Two judges are advisable at all times if at all possible. A conscientious judge realizes that he has great responsibilities to bear. In close contests where cultivation, freedom from weeds, disease, etc., are equal, the winner may be decided by appearance and layout, and these are a matter of opinion. What appeals to one judge may not suit another. In any event the final choice is likely to set a pattern for other competitors. When the winner of a competition is announced, the grounds or garden is usually visited by interested garden enthusiasts, all eager to pick up pointers. It can be seen that it is possible for judges to influence trends in horticulture in the localities where they work. With this in mind it seems advisable to have a change of judges from time to time in order to get different viewpoints, and a bit of variety.

When the judges are making their tour, it is usually possible for them to recognize the home ground entered in the competition at some distance. As a rule, it stands out in

sharp contrast to the neighboring lots with its attractive appearance. This seems to be a good argument for holding garden competitions. If a larger number of home-owners would enter garden competitions, the appearance of our cities, towns, and villages would be greatly improved.

As a closing thought, and with due apologies to the shades of Robert Burns, these words are offered: "Oh wud some power, the giftie gie us, to see our homes as others see them."

Annual Flower Varieties

GRANT CHURCHER

The popularity of annual flowers for home decoration is increasing every year. This is probably due, first to the large range of size and colors being introduced by breeders every year; secondly, to their adaptability to filling in perennial borders and bordering shrubbery and walks; thirdly, their profuse production of cut flowers for the home.

Most annual flowers do well where they have seeds sown at the proper time in the spring and young plants properly hardened off prior to planting. They must also have plenty of room between plants; a good friable soil fertilized with well rotted manure dug in the previous fall, and all old blooms removed to prevent the production of seed, thereby lengthening the blooming season.

The following lists some annuals successfully used for specific purposes:

Bedding Favorites

Snaps	Stocks	Verbena
Petunias	Phlox	Zinnia
Marigolds	Dianthus	Pentstemons

Annuals for Partial Shade

Nicotiana	Godetia	Phlox
Sweet William	Celosia	Larkspur
Calendula	Pansy	Marvel of Peru
Clarkia	Verbena	Cleome

Drouth Resistant Annuals

Alyssum	Snapdragons	Calendula
Centurea Cyanus	Coreopsis	Lavatera
Lobelia	Marigolds	Nemesia
Petunia	Portulaca	Salpiglossis
Sunflower	Sweet Sultan	Tagetes

Screening and Background Annuals

Castor Oil Bean (Ricinus)	Cosmos
African Marigold	Nicotine—Sylvestris
Sunflower—Double sungold	Tritoma
Amaranthus (Love Lies Bleeding)	Cleome

Annuals for Fragrance

Carnation Malmiason	Nicotiana Affinis
Matthiola (Evening scented stocks)	Stocks
Sweet Peas	Dianthus
	Sweet Sultan

Edging and Border Plants

Alyssum	low pigmy
Lobelia	Nasturtium—Dwarf
Ageratum	Portulaca
Marigold French	Viola
Marigold—cupid and yel-	Zinnia—Tom Thumb

The following is a brief description of the habits of some of the important annuals and hints for successful culture of them:

1. Antirrhinum: Seed March 1st. Snaps grow best in sunlight and well-drained soil only moderately enriched with manure. They like a slightly alkaline condition best. Early planting is desirable for best bloom. Be sure to select the height and color to suit your planting scheme.

2. Asters: Sow April 7. Nothing can surpass Asters for their their individual blooms and you may have good Asters provided the soil you select is not already impregnated with Fusarium Wilt Fungus. In brief, never plant them in the same place twice. They are also susceptible to Yellows Disease. Unlike Aster Wilt, where the leaves turn brown, the leaves of plant attacked by Yellows lose their chlorophyll (turn yellow), the buds turn greenish and the plant is stunted. Yellows is a virus disease generally carried by leaf hoppers.

3. Bellis perennis is that small English daisy about four inches high, not especially beautiful, but a few look well in or near the border.

4. Centaurea cineraria (Dusty Miller): Sow February 1. This is a silver leaved border plant about twelve inches high, generally grown in thumb pots until bedding out time. A striking border or geraniums is made by planting Dusty Miller alternated with Lobelia—two Lobelia to one Miller.

5. Centaurea gymnocarpa, a grey silvery leaved border plant is much larger than C. cineraria, growing 18 to 24 inches high. It is not nearly as striking as C. cineraria.

6. Cleome: Sow March 15 in light soil mixture, grow in full sun, transplant to pots, thence to garden. Cleome is often called the Spider plant, has bright salmon pink flowers,

borne in huge trusses on stems 24 to 36 inches high. They make a very delightful background plant, especially if combined with blue or lavender flowers.

7. Celosia: Sow March 15. Young plants are very tender to drought or gas damage, must be grown in full sunshine, plenty of air, and watered lightly to prevent damping off. The pyramid type comes in three heights, the tallest is the favorite and is especially good for background. Never try to grow closer than 12 inches. Flower colors are exceptionally bright if grown in full sun, crimson, bronze and yellow. Cockscomb is a short type of Celosia, very pretty when well grown but does not always bloom 100 percent.

8. Castorbean (Ricinus): Sow seed in pots about April 15. May also be seeded directly outside after ground warms up. A broad leaved plant growing from three to five feet high, used for backgrounds and bed centres. The seed contains a poison called Ricin, therefore they should be planted away from children's playground areas.

9. Cosmos: Seeded outside, grows three to four feet high, new introductions such as Radiance and Orange Ruffles are very beautiful if well grown.

10. Dimorphotheca Capemarigold: Sow seed March 15. Give plants a spot that is well drained, light, not too rich a soil, and full sunlight.

11. Larkspur: Sow as early as possible, outside, where they are to bloom as they are hard to transplant. Grow in well drained soil about nine inches apart.

12. Marigolds: Sow April 15. The Marigolds that I fancy most are of recent introduction called Cupid and Yellow Pigmy. They have large yellow double flowers as an African type but grow only six inches tall. Greenhouse men often do not grow them as they show no flowers at bedding time and therefore are not strong sellers. All Marigolds bloom better on poor than on too rich a soil as they grow too rank a foliage and few flowers if overfed.

13. Petunias: Sow March 15. The seedlings should appear in eight to ten days and be ready to prick off when the first two green leaves appear, or about twenty-five days from planting of seed. Temperature or germination should be approximately 60°. Petunias do best in soil that drains well and in a sunny location, however, they will grow in partial shade but are apt to get quite lanky.

14. Salvia: Sow March 1st. Plants are best started in small pots as they are heavy rooters and are often damaged in separating them. The varieties Blaze of Fire and St. John's Fire are two of the best.

15. Scabiosa: Sow April 1st. Plants should be 10 inches apart in the garden. Such varieties as Heavenly Blue and Black Prince are well worth growing, especially for cut flowers.

16. Stocks: Sow April 5. Stocks should be grown as cool as possible at all times to ensure 100 percent bloom. If due to late seeding the bulk of their growing is above temperatures of 60° F., they will continue to grow a very strong foliage plant with no bloom at all. This seems to be due to their biennial habits. There are three types:
    (1) Ten weeks: Branching type is probably the most reliable bedder, as they are very early, also dwarf and compact.
    (2) Giant Imperial and Colonial (new) both branching, which give 10 to 15 branches of good cutting flowers.
    (3) Column types, generally give one branch of flowers per plant and are used mainly by florists for forcing.

17. Sunflower Sungold is a very interesting subject for background work, grows five to six feet high, has large double flowers, brilliant golden yellow, but is a little later in blooming than some of the older types. Sow in pots about April 25.

18. Ipomea (Morning Glory): Sow in April. They like a strong soil and sunny site with plenty o fwater. Planting seeds in small pots and allowing them to become potbound before being transplanted will make theim bloom earlier. Favorites are Heavenly Blue, Scarlet O'Hara, and a new one, White Magic.

19. Sweet Peas: Sow as early as possible. A good preparation is to dig a trench 1½ feet wide and eight inches deep. Fill first three inches with a half and half mixture of well rotted manure and soil to which has been added bone meal at the rate of one pound to every 15 feet of trench. Fill the trench and plant the seed two inches deep in a four inch wide drill so that supports placed down the centre will have plants on both sides. A side dressing of liquid manure when buds appear is beneficial. Soaking the seeds is not a good policy. Soaked seed will germinate in dry, cold soil and not be able to reach further moisture will rot, while in moist soil there will be sufficient moisture for germination.

20. Verbena: Sow March 25th for Gigantea type and February 15th for Venosa type. Gigantea is very showy with a

great variety of brilliant colors. Venosa must have full sun, has long slim flower heads and is purplish heliotrope in color.

21. Mimosa Pudica (Sensitive plant) is a very interesting small subject for your flower border. Its main attraction is its ability to close its many lobed leaves when touched and to return to normal quickly. It has a lilac colored globe shaped flower about one-half inch in diameter. Start plants in March in a light, well drained soil. Care must be taken to never over or under water young plants.

22. Zinnias: May be started indoors in April or seeded outside as soon as the ground is warm. Zinnias are essentially coarse plants but if the tall kinds are massed heavily in borders or at some distance they produce very striking effects as their colors are very strong. They do well in our natural soil as they appreciate a heavy rich loam.

Just a note to those who raise their own plants. Never pinch back your plants at bedding out. Pinching back gives a distinct shock and coupled with the shock of transplanting often proves fatal. Pinching back should be done at least a week before planting.

An Amateur's Method of Propagating From Slips or Cuttings

By MRS. T. J. FOXCROFT

When it was requested that I write an article for the Winnipeg Horticultural Society's "Flower Garden" book, the thought occurred that it must be a very thrilling and soul-satisfying experience for a writer to submit for publication, something so erudite that it fairly bristled with technical nomenclature and biological names, showing a very intimate knowledge of Greek and Latin roots and derivatives. Unfortunately, I am not able to do this, so I shall have to content myself, as an amateur gardener, with a rather feeble attempt to impart to others in the amateur class some ideas I have gained by actual experience in propagating plants from slips or cuttings.

It has been my unhappy lot to have attended quite a number of lectures and discussions relating to gardening given by those who are undoubtedly most qualified by extensive study and training to direct us upon the right road or proper course to follow in our gardening activities. However, due in all probability to lack of early training or the most colossal stupidity, I have found myself in the same condition of our friend Omar Khayyam, who bewails the fact that after "great argument about it and about: came out by the same door as in I went." I contrive to do better than Omar, by being first out of the door, but "sans wine, sans song"—and sans any workable knowledge of gardening.

Far be it from me to belittle the scholastic attainments of those who make the effort to train themselves as professional horticulturists and devote a life-time to this very important science. But many who have a love of gardening or an inherent desire for self-expression in the cultivation of beauty such as we get in the flower garden have neither the time nor inclination to make themselves too familiar with the rather exacting demands of the professional horticulturist in regard to a knowledge of soil constituents, botanical names, nor the chemicals used in scientific plant propagation with such awe-inspiring terms as Indoleacetic, Naphthaleneacetic and Indolebutyric acid.

While we have a proper reverence for, and treat with high deference, those who use and understand this terminology, a more simple approach is less likely to frighten away our amateur gardener from indulging in interesting experiments.

From the several hundred visitors to our garden last summer, the most frequent questions were about Geraniums, Morden Pink Lythrum, and the house plant known as "African Violet." What I have to say about the propagation of these plants has been gleaned from actual experience and will, I hope, be of interest and help to other amateurs even though it may only amuse the more informed illuminati of our gardening fraternity.

Propagating Geraniums

I am told this plant is more properly referred to as "Pelargonium". However, the year I tried to impress my husband (a rather pedantic individual) with my newly acquired knowledge by referring to them as such—they all died. So I have gone back to the common name by which we all know this lovely plant.

I am often asked how I winter geraniums, since I have only a couple of windows for this purpose. Usually only four matured plants are taken in to give me the sixteen new plants I need each spring. Plants selected should have two or three sturdy arms. These plants are kept in a cool room and watered once a week. One tumbler of water to each plant seems to keep them dormant and green without blooming. About the first week in March I cut five inch slips from these plants leaving the old roots in their pots as they, too, will make good healthy plants. In planting these cuttings I make sure I put a "joint" into each pot of earth to a depth of two inches, as this is where the new roots will develop. When I notice my cuttings putting forth small green leaves I then treat them as normal house plants until they are ready to be moved into permanent summer locations.

African Violets

The best method of propagation is by division of crowns. But I usually do it from leaf cuttings by taking a good healthy, mature leaf with a good stem an inch or more in length. I place this leaf in water to just cover a quarter of an inch of the stem. The leaf can be supported above the container, which is usually a glass tumbler, by cardboard or wire screen. In a week or so roots will appear when it can be transplanted into a small pot of good loam to a depth of the stem, but the leaf proper should not be in contact with the earth as this will rot the leaf. Water is applied overhead about twice a week, but the pot should not be placed in a saucer of water as is often done. Only lukewarm water should be used, never use cold, as this is too much of a shock to the plant. An occasional light spray of water may be used to remove the dust from the

leaves. Direct sunlight will fleck the flowers and discolour the leaves. Plants are kept where they will have plenty of light and a little sun for a portion of the day. Mauve, purple and Blue Boy varieties seem to be the easiest to grow from leaf cuttings, white and pink varieties more difficult. Violets should be given fertilizer at frequent intervals.

Lythrum (Morden Pink Variety)

A thick, healthy cutting, from which all buds or blooms have been removed, taken preferably in July, will make a fine plant to put in the garden proper in September. The cutting should not be less than four inches in height. A few stones or pebbles are placed at the bottom of a five inch pot for drainage. Above the stones, the pot is one-third filled with earth and the remainder of pot with sand. The cutting is inserted in the sand to a depth of two inches. Water is applied and the pot is placed in a shady spot and kept moist. The cutting should stand erect and remain green. If this is evident, it is taking root. In about three weeks it should have a healthy bunch of roots. Then it can be repotted into a larger pot of good black earth. Water is liberally applied as Lythrum likes wet feet. The rooted cuttings are transferred to the garden proper in September when they can be removed from the pot by turning it upside down and tapping the edges of the container. A sunny position will give best results, but they will do well in partial shade. These plants will be one of the loveliest things in your garden.

In conclusion I would say that whether you follow the above methods or the more involved procedures of the gardening manual, experience is still the best teacher and you will have fun with your experiments, regardless of the outcome.

Tuberous Begonia

MARTIN ZONNEVELD

Of all the Begonias, the garden tuberous-rooted Begonias classified as **Begonia tuberhybrida** are perhaps the most fascinating for their perfection of form and richness of color. The originals of these plants were collected in shady sub-tropical ravines and moist woods. Alert gardeners found that these plants thrive well as plantings on the north side of a building or wall, as well as in shady nooks and under deep rooted trees.

Many varieties of tuberous-rooted Begonias are available. The large, single flowered variety is **Begonia gigantea.** The variety **Begonia narcissiflora** produces large narcissus-type trumpets. **Begonia crispa** is a form with the petals deeply cut and pleasingly waved and frilled. The crested type known as Cristata is distinctive. The variety which is identical in form with the lovely camellias of the south, but having a wider range of color, is the Camelliaeflora. The double fringed form which reminds one of the carnation is the **Begonia fimbriata plena.** There is even a hollyhock type known as **Begonia Martiana** with small single flowers of mallow-pink. The Multiflora type is characterized by clusters of small flowers. This variety is ideal for bedding or for window boxes. The Hanging-basket Begonia, **Begonia Lloydi,** is popular for pots or window boxes, because of its loose drooping habit.

Tuberous-rooted Begonias may be started from seed but this method is time consuming. Two years are necessary before the plants will blossom. However, a variety of colors may be obtained by this method of propagation using cross-pollinated seeds. The common method of propagating tuberous-rooted Begonias is by the use of tubers. These tubers are placed in a flat containing a mixture of four parts of soil, one part of sand, one part of peat moss, and one half part of manure between February 15th and March 1st. The tubers are placed close together with the crown slightly exposed. The soil is kept moist but not soggy. A slight amount of bottom heat is applied. It is best not to force these tubers at this stage. The temperature should be kept at an even range of 60°-65° F. The tubers at this time will appreciate any amount of sunlight but drafts and cold temperatures should be avoided. A number of shoots will develop from each tuber as they come to life. These shoots should be nipped off to give one stem, except from the Hanging-basket Begonia. (These shoots, which were nipped, may be used as softwood cuttings. The shoots may be placed in rooting media, such as sand, and in a short

time roots will have formed to give rise to new plants. Small new tubers will be formed during the course of the summer). When the shoots have become about two inches high, the tubers may be transplanted to five or six inch pots or to flats. If the latter is used, plants at about the same stage of development are placed in the same flat. This will provide conditions which will result in uniform plants. The tubers at the time of transplanting to pots or to flats are planted to a depth of one inch, and from four to five inches apart in the flats. The temperature should be maintained at 60° F. and water should be applied only when needed. Approximately one hundred days are required before the plants are ready to be set outside. At no time should these plants be forced nor should any of the buds be pinched back.

By the end of May the plants should have from four to five leaves and be from five to six inches tall. They are now ready for transplanting to the summer location. The location of the Begonia bed is very important. These plants require plenty of indirect light and moisture in well drained soil which is high in organic matter. Shortly before setting out, the plants should be hardened off gradually by exposing them to cooler outside air. As soon as the danger of frost is over these plants may be set outdoors in their permanent beds. The plants are set out a little deeper than they were in the pots or flats. The spacing is best at about fourteen inches each way. Since these plants are heavy feeders, the soil should be rich in organic matter and fertilizer. If the plants are set out with the leaves pointing forward then the flowers will point in the same direction.

During the course of the summer, some attention need be given to these plants. The plants are upright growing, therefore some staking or support may be necessary. Since they require plenty of moisture, it is advisable to water the soil around the plants on extremely hot days. Fertilizers in the form of Vigoro, Gardenite or Ammonium Sulphate may be applied every two weeks.

Some of the pests of the Begonia are green flies, thrips, and mice. The insects may be controlled by the timely use of a DDT spray. Cats will probably control the mice problem.

Frequent cultivation should be practised to keep the soil surface loose and in a friable condition. The feeding roots which are located close to the surface of the soil should not be disturbed.

Unless the blooms are to be prepared for exhibition purposes, the flowers should be undisturbed. For exhibition

purposes, the side flowers are removed. These side flowers are the female flowers and they carry the seed pods.

Two or three days after the first frost, the tubers will be in condition and ready for harvesting. The tubers are lifted and the stems trimmed off, leaving a stub of one-quarter to one-half inch. These tubers are then cured in a cool, dry room away from the direct rays of the sun. After the tubers have been dried they may be stored in boxes in rooms with temperatures held at 40° to 50°. These tubers may be packed in dry peat moss or sawdust. The curing process should not be rushed.

✦ ✦ ✦

Treat the plants carefully when you transplant. Plants have only one means of getting the necessary plant food and moisture, that is through the roots. Disturb the roots as little as possible in transplanting and thoroughly compact the soil about them.

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It is not necessary to prune all shrubs. Some are benefited by pruning — such as most varieties of roses and certain flowering shrubs whose branches become crowded and cluttered with worn-out wood which does not bloom freely. Generally speaking, if a shrub does not give satisfaction it is worth-while to try the effect of pruning. Prune, in the main, only where necessary to keep materials within their allotted space, and to keep them at the highest pitch of effectiveness

Roses

T. E. TOPPER

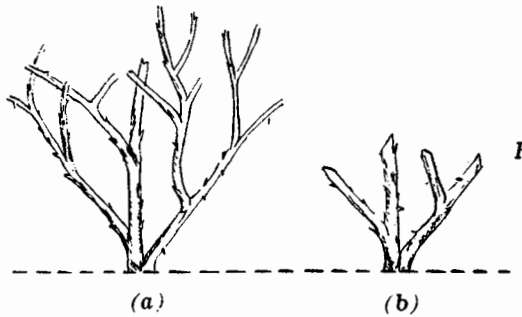
The rose is one of the oldest and finest flowers grown and there are a number of varieties that thrive in this locality. Among these are the Climbers and Hybrid Teas and Hybrid Perpetuals.

Of the Climbers, the American Beauty is one of the sturdy sorts, and is grown on its own roots. Once established, it is a rapid grower and a prolific bloomer. It is a hardy rose but needs some winter protection. Another beautiful Climber grown locally is the Paul's Scarlet, a grafted rose. This variety needs to be well protected from our severe winters. Both of these varieties should be planted in an open position so that they can be taken down from the trellis in the fall before the ground freezes, and laid as flat on the ground as possible without breaking the canes. (A trellis set in a cement block on each side of the rose is handy to put up in the spring and to take down in the fall.) Dry leaves make good protection. The bushes should be covered about three feet deep, but a part of the leaves should be removed in the early spring to prevent the new growth from starting too early.

Of the Hybrids, General MacArthur and Dickson's Red are two beautiful dark red double roses. Shot Silk is a good semi-double with well-shaped buds and thick glossy foliage, and is immune to disease and insects. President Herbert Hoover does well, and Frau Karl Druschki is a fine white rose and a prolific bloomer. The latter has been in cultivation in this locality for over twelve years. Seedhouses are listing a number of other Tea and Perpetuals that can be grown here.

These Hybrids can be protected in the same manner as the Climbers, — by covering with dry leaves. When the last of the covering is removed from them in the spring they should be pruned, leaving five or six buds on the strong stems. Weak stems should be removed. The bushes should then be sprayed with an all purpose combination fungicide-insecticide spray to prevent mildew and black spot — the two common diseases among roses. Spraying should be repeated at intervals of every ten days or two weeks to control insects. It is much easier to keep insects from getting started than it is to destroy them after they get established. A good all purpose spray is Tri-ogen, which controls both insects and disease.

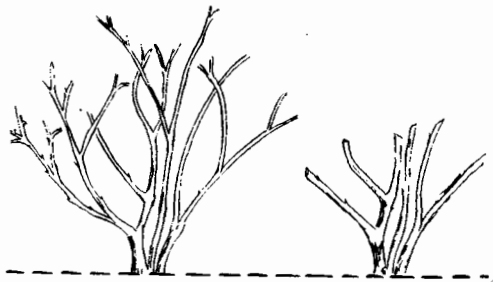
All roses need a certain amount of iron and if they are not getting enough the foliage turns yellow. When the first



Hybrid Tea, unpruned (a) and pruned (b)

(a) (b)

Hybrid Perpetual, unpruned (a) and pruned (b).

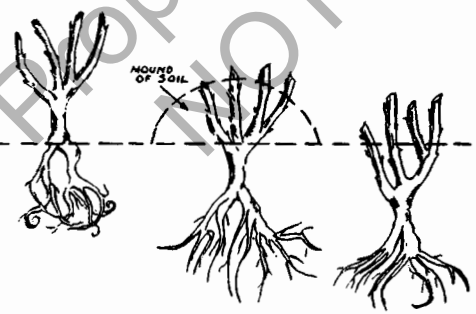


(a) (b)

A climber before (a) and after (b) pruning.

(a) (b)

Plantings (a) improper depth, poor distribution of roots; (b) proper planting; (c) improper deep planting.



(a) (b) (c)

signs of yellowing appear, a solution made up of one-quarter pound of ferrous sulphate (sulphate of iron) to one gallon of water is used. Two quarts of this solution is poured around the roots of each bush but precaution must be taken to keep it away from the plants. This application may be repeated in three weeks if no improvement has been shown.

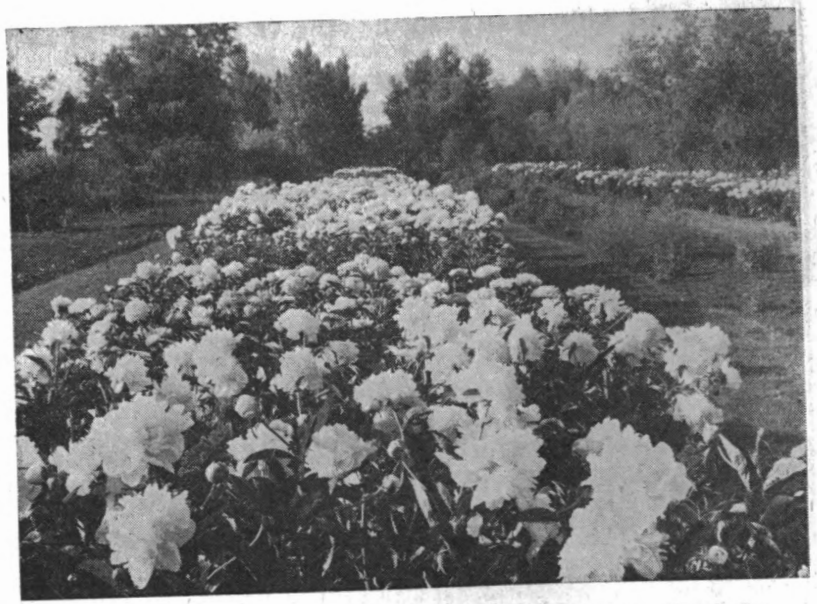
One method of planting a new rose is as follows. A hole about one and one-half feet deep is dug and a shovelful of well rotted cow manure and one-half pint of bone meal is placed in the hole. Top-soil is placed over the manure and a small mound built in the centre. The bush is then set in, spreading the roots around the mound. The hole is then filled with earth and tramped down well to within about three inches of the ground level. A pail of water is then poured in and after it has soaked away the hole is completely filled with earth, leaving the bud or graft about two inches under the ground level. When a new rose bush is planted, if the earth is well drawn up around the bush it will protect the bush from the wind and sun and it will prevent the bark from drying out. As soon as the buds show new growth the earth should be gradually removed. The rose should be pruned to about six inches in height to insure vigorous growth. Roses handled in this manner have done very well in this locality.

Peonies

H. F. HARP

No other herbaceous perennial can lay claim to greater popularity in prairie gardens than the peony. Enthusiastic plant lovers have appropriately called it the Rose of the North. So many good things can be said of it that one is hesitant to mention its faults. The plant needs support for its large flowers and, unless one has a collection of varieties selected for early and late blooming, the season of flowering may be all too brief. However, there is ample compensation in its distinctively handsome foliage, beauty of form and delicacy of flower coloring, not to mention its fragrance and comparative freedom from insect pests and disease.

For massing in borders with shrubbery background, or as occupants of beds devoted solely to their culture, they are unsurpassed. As cut flowers for indoor decoration they are a source of pleasure and satisfaction. For planting in mixed herbaceous borders they are attractive furnishings the whole season through.



Peonies, Dominion Experimental Station, Morden, Manitoba.

Historical

The Chinese knew them a thousand years ago; first as medicinal plants, later as food plants and then as subjects of garden adornment. In Europe, the sixteenth century apothecary used the seed of the peony to compound a prescription said to give relief to sufferers of that most distressing malady, — nightmare. In 1629 John Parkinson described half a dozen varieties in his treatise, "Paradisi in Sole", two of which were said to have double flowers. "All these were brought or sent from divers places beyond the seas." — wrote Parkinson. "They are endenizened in our gardens where we cherish them for the beauty and delight of their goodly flowers as well as for their physical virtues."

Several species from widely separated regions played a part in the development of the present day peony. Peonia officinalis from Europe and P. albiflora (sinensis) from northern China and Siberia are the most important. It is thought that modern peonies are the progeny of these species, with P. albiflora contributing most. Peony specialists catalogue several true species today but, apart from the double form of P. tenuifolia, these are seldom met with.

More than a hundred years ago French growers were raising peonies from seed on a fairly large scale. The well-known Edulis superba (splendid with edible roots), esteemed for its earliness and rich fragrance, was introduced by M. Lemon a hundred and twenty-four years ago. In England the firm of Kelway at Langport, in Somersetshire, worked with P. officinalis and later imported improved forms of P. albiflora from China to produce the high rated varieties Baroness Schroeder, Kelways Glorious, and others. The names of Verdier, Calot, Dessert, Crousse, and Lemoine, are familiar to peony growers everywhere. Each made splendid contributions to present day popular varieties. In America the names of Brand, Richardson, Franklin, Terry, and others, are equally well known for such top-notch peonies as Mary Brand, Maud L. Richardson, Francis Willard, Walter Faxon, Elizabeth Barrett Browning and many more.

Culture

Being mindful of the plant's preference for remaining undisturbed for quite a few years, prospective planters should put a little extra effort into preparation of the soil. The chosen site had best be clear of trees, shrubs or hedges. Peonies competing for moisture with these subjects cannot be expected to grow into robust specimens. Trenching or double digging of the whole area devoted to them is recom-

mended. Where this is not possible, plan to dig holes two feet across and two feet deep for each plant. Mix a few shovelfuls of well-rotted manure with the bottom layer of soil. See that no manure comes in contact with the roots when the plants are set. A shovelful of wood ash, or the refuse of a garden bonfire, can be mixed with the top soil as it is replaced.

Where space is limited, peonies may be planted two and a half feet apart each way and will give satisfaction for several years, especially if water is available to help them through periods of drought. However, three to four feet each way is not a bit too much when plants are established and healthy. Mid-September is the best planting time and the sooner after this date the work is completed the better. Spring planting has nothing to recommend it, but, where plants have been received after the ground is frozen, they may be held over winter in cold storage or root cellar to be transferred to permanent quarters as soon as the land is in workable condition in spring.

Make a thorough job of planting by taking out a hole sufficiently large to comfortably hold the roots. Set the plant so that the dormant buds, or 'eyes', are about two inches below the soil surface after the plant has been firmed by treading. Providing the soil is in good condition for planting, — that is, not too dry or too wet, — there is no danger of overdoing the firming of newly set plants. Should the soil be very dry, a good soaking of water must be given immediately after planting. By leaving a saucer-shaped depression around each plant, this operation will be greatly expedited. A further treading of the soil will be necessary when excess water has drained away. Some growers advocate setting peonies four inches deep as a deterrent to fungus diseases. The merits, — if any, — of this practice are not known but certain it is that chances of blind growth resulting are increased.

Plants that have lost their vigor through old age may be rejuvenated by dividing them and replanting in a new spot. Such plants should be carefully lifted and allowed to remain exposed to the sun's rays for several hours. The action of the sun will render the roots less brittle. Most of the soil can now be readily shaken from the roots and the work of cutting up can begin. Portions with from three to five "eyes" are best suited for transplanting. Roots without eyes are useless. The tops are best cut off about two inches above the root.

At the Dominion Experimental Station, Morden, upwards of four hundred varieties and species are under test. The

plantings may be viewed by the public at any time. The peony season of bloom extends from early June, with P. tenuifolia and P. officinalis leading till July. They are usually at their best the last week of June.

A record of varieties planted, showing location by means of a diagram, should be kept in a garden book. Knowledge of correct names of varieties in one's possession adds to interest and enjoyment. Experienced peony growers will not expect much of new plantings for a few years. In fact, flower buds appearing the first two years had better be removed. Typical flowers may not show up for several years after planting. A good deal of patience is required before some varieties come up to catalogue descriptions.

Exhibition Peonies

Only from established plants that are healthy and vigorous is it reasonable to expect to cut flowers suitable for show purposes. Immediately following the season of bloom, the work of building up a strong plant should begin. A handful of bonemeal and a shovelful of wood ash should be lightly forked in around each plant. Four ounces of a mixture of equal parts muriate of potash and phosphoric acid may be substituted for the wood ash and bone meal if desired. If this can be applied immediately before a rain, so much the better. No further applications of fertilizer should be given until the plants are in bud. Liquid manure can be used with excellent results at this time, starting with a weak solution and increasing the strength each application until the flowers are cut. The effect of liquid manures is highly stimulating but an overdose will result in damage to the plants. So that caution should be the watchword . Not more than two applications weekly should be given.

Thinning of the shoots as soon as they are well above ground is sometimes practised, removing not more than one-third of the weakest ones. Later, when flower buds are showing, each stem is disbudded, leaving only the topmost or terminal bud. Paper bags of the one-pound size should be placed over the most promising buds to protect them from scorching wind or heavy rain. These bags must be watched very carefully as the whole secret of success is in cutting the buds at the right stage of development and plunging them directly in cold water. As a general rule, the very compact full-petalled varieties that are naturally late in flowering, such as Marie Lemoine, should be allowed to remain on the plant until almost half open. Early varieties can be cut when they first show color. Midseason varieties should be cut

when the outside petals first loosen from the bud. However, it is best to learn by doing. The cut buds are best stored in a cool (40 degree) cellar, leaving the bags intact. They may be kept for a week or so in this kind of storage providing the water is changed and a small portion of the stem cut off daily. At lower temperatures they may be kept for several weeks but require expert handling, and more time must be allowed for their development when taken out. The continued practice of intense cultivation will have a weakening effect upon the plant. Growers will be well advised not to subject the same plants to this treatment every year.

Staking

For exhibition flowers, each stem is best staked individually, using bamboo canes or other neat stakes. Plants grown for garden effect are best staked with substantial staves, placing four or five around each plant and tying with strong twine. Make sure the stakes are pushed well down in the soil and have them in position before there is any danger of damage by wind. No amount of staking will regain the original poise of the plants after they have been beaten down by wind and rain.

Diseases

It has been mentioned that peonies are wonderfully free of insect pests but they are not immune. Rarely are aphids or plant lice found on the plants. Occasionally the tarnished plant bug is seen on late blossoms. Ants are frequently seen scurrying over the flower buds, seeking the sweet nectar exuded from them. Unless ants make their home in the plant's roots, they do little damage, — although they have been blamed for spreading mosaic and blight.

Several fungous diseases attack peony plants and are sometimes troublesome in seasons that are favorable to the propagation of the spores. A fairly common disease, known as leaf blotch (Cladosporium paeoniae), occasionally makes its appearance in late summer. It is easily recognized by the large purple blotches which appear on the surface of the leaves. Apart from rendering the plant unsightly, it does little harm.

Stem Rot (Sclerotinia libertiana) and Peony Blight (Botrytis paeoniae) are much alike and often confused. Wilting of the stems at ground level in various stages of growth may be caused by either of these diseases. Stem Rot is distinguished by the presence of black sclerotinia (resting bodies)

in affected stems. Peony blight is quite common and can be destructive in wet seasons. The disease is difficult to control for several reasons. The spores are produced in tremendous quantity and are spread by wind and insects. The sweet substance produced by the buds provides an excellent germinating medium for these spores. Many common garden plants are alternate hosts of this disease.

Copper fungicides have not been altogether satisfactory in controling peony blight. It is thought the substance on the peony buds neutralizes the effect of the copper to some extent. Nothing has been found more effective to date than the practice of maintaining sanitary growing conditions. The prompt eradication of diseased parts by cutting them below soil level. and instantly consigning them to the fire, is recommended. Remove and burn all top growth in October, cutting below soil level. A portion of the top soil surrounding each plant should be removed and replaced with a mixture of granulated peat and sand, where disease has shown up. Where all top growth has been cut off in the fall, a light covering of brush should be provided for winter protection.

Reflections on Exhibiting and Judging Flowers

WM. GODFREY

Contrary to customary practice the above title was applied after most of the subject matter was written. The editor had requested a paper on "Points in Judging Flowers", and an attempt was made to comply with his wish. The writer, however, soon found his mind occupied, and his hand describing the troubles of a Flower Judge and the circumstances which affect his work.

These following paragraphs have been revised to conform with the change in the theme.

It was also found that there is a Manitoba Government, Department of Agriculture, Circular No. 107, entitled "Standards for Judging Flowers." This contains detailed information and can be recomended to take care of such matter as its title implies.

Flower judges generally use few, if any authoritative standards in their work. They are guided entirely by those set up by themselves, the result of experience and knowledge. Specialized flowers, however, an example being the Gladiolus, have to be examined by regular standards set by Societies devoted to their interests. The points of merit are clearly defined, and are designed to promote accuracy in making awards. It also eliminates doubts and avoids disputes. This is not always possible with many kinds of less prominent flowers.

It is with the less important flowers that judges get into difficulties. The exhibitor is responsible for many of them, by neglecting to follow the conditions outlined in the prize list. And this list itself is not always so clear in meaning or easy to interpret, especially to a novice.

Herewith is one example of non-observance of rule. In a class calling for twelve stems of Sweet Peas there is found an entry with more than the required number of stems. It may be the best exhibit, but the judge has no option but to disqualify it. The subsequent explanation demanded by a disappointed competitor may evoke such an excuse as, "I did not know which were better so I left it to the judge to make

the selection." This is innocent of evil intent, but it is thoughtless of consequence if carried out extensively.

Experience has demonstrated that improvements can be made in preparation of exhibits. Flowers should be fresh and full of youthful, lustrous color. Sometimes they are selected for large size only. Such specimens are often on the verge of fading, and this condition quickly takes place on the show bench. Flowers that are arranged in spike formation should be cut when the spike is well developed but with the florets at the base still colorful. This may not always be possible in which case the unsightly portions should be carefully removed. A sharp knife or a pair of scissors can be manipulated so that no trace of pedicel or flower stalk is discernable.

The foregoing advice may be summarized by saying that competitors should be certain that the following points are closely observed.

(1) Show only fresh material, removing dead and faded flowers and leaves. Discard blemished or damaged specimens.

(2) Study the prize list. Comply with its provisions. Make certain that entries are properly placed in their respective classes.

(3) Provide suitable containers where necessary, and see that they are filled with water.

Observance of these matters will help the exhibitor, the judge and the show committee.

The competitor's attention has been directed to the prize list. To the inexperienced, one of these can be a little confusing and needs some interpretation. Such terms as stems and blooms are clear enough in meaning, but the novice is often unhappy when his understanding mind has to apply his knowledge to different kinds of plants. Stocks and Petunias can be cited as examples capable of causing uncertainty. In a class of the first named calling for six stems, it is not unusual to find some entries with six whole plants cut off at the ground level and placed in separate containers, while the rest may consist of six side branches inserted in a single vase or bottle. In both cases a form of stem has been used. There can be no dispute, but a problem confronts the judges.

Petunias usually appear on the show bench in two distinct and dissimilar forms. One with the blooms crowded into a flat dish, the other with lengthy stems and leaves attached. These stem entries often carry more than the required number of blooms, because unopened buds at the time the exhibit was set up have expanded later. The latter makes

the more attractive exhibit even though the individual blooms may be inferior. These are only examples of entanglements that repeatedly arise to harass a judge, or show committee.

Criticism without constructive suggestions for improvement is usually of little value, so it seems proper to enter one here. It is relative to the comments on present day prize lists, and expresses an opinion held for many years.

The writer recommends the revision of present day prize lists so that the less important flowers would be staged in a different manner. Specialized subjects such as Gladioli, Dahlias and Sweet Peas could be left as they are, but separate classes for all other flowers, exemplified by Verbena, Scabious or Sweet Sultan, would be eliminated. These single exhibits would be replaced by groups or collections of various sizes. Twelve or twenty-four varieties or kinds. They could be staged without restrictions regarding numbers or specimens, either labelled or otherwise. With names attached they would be educational.

It is unnecessary to enumerate in detail all the flowers frowned upon. A list would include all those which have not been grown and specially cultivated for show purposes. They have little decorative value to a show as currently displayed. Ordinary run of the garden flowers have a negligible place on the show bench.

Some of these flowers, perhaps many of them, could become specialized by encouragement and the dictates of fashion.

Briefly stated, present day prize schedules are outmoded, and need bringing up to date. As a judge and as a show committee member these secondary types of flowers have been anathema to the writer. He is not revolutionary by nature, but rather inclined to hang onto tradition tenaciously, sometimes with both hands.

The suggested reform would not be difficult. Instead of having a generally untidy mass of what are mostly annuals, they would be grouped in collections and in pleasing order. This arrangement would stimulate that competitive spirit which now is lacking, provide a wider scope for expression, and control several objectionable practices.

A show bench should be furnished with material that has received special cultivation with the idea of attaining excellence or superiority. Rare and interesting plants, educational, scientific, and other appropriate exhibits should have special prominence.

In the early days of the prairie west, after the white man had chased the Indians into the northern bushlands and all

but extinguished the Buffalo, he first sheared from the land its vegetable wool, then began to yearn for fruits other than the cranberry and the saskatoon. For flowers he wanted something different to the Blanket Flower or Prairie Anemone. So, he set about to organize Horticultural Societies to encourage the growing of exotic plants that would provide him with his wants. Soon Garden Shows appeared and anything in the shape of a flower became acceptable as a showpiece. In appearance and arrangement, the show benches probably looked much as they do to-day.

Time has made some changes, a tractor now pulls the farmer's plough, and a combine harvests his golden wheat. Old Dobbin views it all from pastured ease and idleness. Meanwhile, the white man, now a gardener, apparently contented and unconcerned. still finds a place on his garden show-bench to honor the humble Scabious and the lowly Verbena.

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For lawns, permanent plantings of shrubs, evergreens, and flowers, fertilizers may be applied in the fall or spring with equal success. It is best to apply fertilizers to annual crops at, or just previous to, planting time.

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In pruning, branches should always be cut off close to, and parallel with, the branch from which they spring. When shoots are shortened, the cut should be made just above a growth bud, pointing in the direction you wish to have the tree develope.

New Insecticides Protect Manitoba Vegetables

DR. A. J. THORSTEINSON

In recent years a bewildering variety of new insecticides has been developed. Several of them will probably have important uses in the control of insect pests on vegetables, but will need further testing before they can be recommended for specific purposes.

The most widely publicized of the new insecticides is DDT and it has already been used extensively to protect growing plants from insect pests. Although DDT has been called a miracle insecticide, it is not universally effective. For instance, it does not control certain insects such as many species of aphids, soil insects such as wireworms and white grubs nor the red spider mite. However, it is very effective against caterpillars, beetles and various other insects.

DDT is available in several different types of formulations and it is important to select the proper preparation. For example, DDT solution in kerosene is available for use against household insects such as flies, cockroaches and carpet beetles. This form of DDT leaves a residual film of insecticide on walls and other surfaces which continues to kill insects for weeks after the time of spraying. However, this type of formulation should certainly not be used on garden plants as the oil solvent would cause injury to the crop.

A convenient form of DDT to use on plants is garden dusts containing three to five percent DDT. The disadvantage of dusts is that they may be washed off by rain or blown away by the wind. They should therefore be applied on a calm day, preferably when the plants are wet with dew.

The most economical form of DDT for use on plants is the wettable spray powder. This is sold as a powder containing usually 50 percent DDT and a wetting agent so that the powder may be stirred up at the rate of about two large tablespoonfuls per gallon of water. This suspension may be sprayed on many plants to control various insect pests. The film of DDT on the plants is not easily washed off and continues to kill insects for two or three weeks. The only disadvantage is that the spray tank must be kept agitated to prevent the suspension from settling out.

If a visible spray residue is objectionable, as in the treatment of ornamental plants and shade trees, it may be prefer-

able to use a DDT oil emulsion. This is sold in the form of an emulsion concentrate which should be diluted with water before use. This preparation is not as safe for use on plants as the wettable spray powder and the directions on the package should be followed carefully in order to avoid injury to the foliage.

What has been said will indicate that the most useful forms of DDT to the plant grower are the three or five percent DDT dusts and sprays made from DDT wettable powders. These two forms of DDT show no harmful effects on most vegetable and ornamental plants if they are used at the recommended concentrations. An important exception, however, is that DDT may cause injury to young tomato plants and to young cucurbits such as squash, pumpkin, cucumber and muskmelon.

Another necessary precaution is that DDT dusts and sprays should not be used on leafy vegetables or on edible portions of plants such as lettuce, spinach, cauliflower and broccoli during the four weeks before harvest due to the danger of DDT poisoning to humans. During this period, a derris garden dust which contains rotenone should be used to protect plants from insects.

A disadvantage of DDT is that it is poisonous to many beneficial insects such as honey bees and other pollinators. Spray or dust before plants begin to blossom or in the evening when there are not many bees working flowers.

DDT may also kill lady beetles and other insects that feed on aphids. Since aphids are not often controlled by DDT, they may actually increase in numbers after spraying or dusting with DDT, in which case it would be necessary to spray with nicotine sulphate.

On the credit side, DDT has been found very useful in the control of several insect pests of the garden. A five percent dust will control the Colorado potato beetle as well as the potato flea beetle, the potato leafhopper and the tarnished plant bug on potatoes. A three or five percent DDT dust gives very good control of the imported cabbageworm, the cabbage looper and the diamondback moth on cabbage. DDT has also been found effective in the control of insects on carrots, the corn earworm, onion thrips, blister beetles and various other insects.

Tests of DDT and other new insecticides under Manitoba conditions have been carried out by the Department of Entomology at the University of Manitoba. For instance, Professor A. V. Mitchener has found that DDT and also two other new insecticides, chlordan and chlorinated camphen, give

excellent control of the Colorado potato beetle. Preliminary experiments by W. S. McLeod, formerly Assistant Professor of Entomology, indicate that benzene hexachloride shows considerable promise in the control of the onion maggot.

It is not possible in a short article to give detailed recommendations for the control of all insects on horticultural crops. You are invited to write or telephone the Department of Entomology at the University of Manitoba for advice on specific insect control problems.

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A bulb pan or a flower pot, covered with an inverted glass jar, makes an excellent miniature propagating frame for the amateur gardener. In it cuttings can readily be rooted.

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Pansies prefer cool, moist, well-drained soil, in a sunny location.

✦ ✦ ✦

The gardener's motto, "Watch and spray".

Vegetable Dyes from the Garden and the Wild

The knowledge of growing flowers and plants successfully is not as old an art as that of employing these growing things for man's use. It is more than likely that primitive man used plants as dyes almost as soon as he used them for food. Over the centuries dyeing has developed into one of the fine arts. Even though synthetic dyes have supplanted the vegetable dyes in convenience, price, and, perhaps, fastness, the old method gives color and soft shades unequalled by modern science.

For commercial purposes vegetable dyes are not practical in this modern world, but if one can spare the time to learn the secrets of the plants' color possibilities, then is a store of endless interest opened up. Experiment in this homely research gives the satisfaction of accomplishing the unusual at no great expense.

Because it is easy to procure in its natural state and almost foolproof, I dye wool. The raw wool from the sheep must be washed and then mordanted. A mordant is any chemical used to treat the wool prior to dyeing. It affects the fibres in some way so that they retain the dye. Different colors can be obtained with the same dye by using different mordants. So, too, the pot you use for dyeing will affect the color, due to minute amounts of the material from which the pot is made dissolving out. I use an aluminum pail, just one we have around the house. Tin will do, but it alters the shade of the dye.

A good standard mordant is made of two tablespoons of powdered alum, the kind used for pickles, and one half a tablespoon of cream of tartar, dissolved in half a pail of cold water. Take eight ounces of wool (I use a handful, having no scale), wet it, squeeze, and then put it in the mordant solution. Boil gently for one hour, stirring occasionally. Let stand overnight and rinse in lukewarm water.

All native dyeing in all countries began with the use of roots, flowers, leaves, bark, nuts and galls of plants, shrubs and trees that grew wild. Animal products, insects and lichens, too, were used. Not a few of the things used the world over grow wild in Manitoba or are to be found in our gardens, orchards or woods. Much exploration of possibilities and experiment is needed before we know more than a small fraction of what we can do with what lies to hand. Much information

about what the Indians used in dyeing lies buried in the books of early explorers. I am only telling you here about four dyes, three from the wild and one from the garden. I hope this may whet your appetite for more, and that you will try many more wild substances yourself. The results are bound to be interesting and may be most surprising. So then for these dye-stuffs.

Bedstraw (Galium boreale). This small, white flowered wilding, like a miniature Baby's Breath, is one of the earliest blooming plants with dyeing qualities. It gives a pink color to wool mordanted as described. It is related to madder, a well known dye in Europe. Dig the tough, thread-like roots in June. Wash, cut up with scissors and let stand overnight in enough water to take the wool to be dyed. The depth of color is going to depend on the quantity of roots you use. They are pesky things to dig, so your color will likely be light, like mine. While your dye-roots are soaking, mordant your wool. In the morning squeeze out the wool, rinse it and add it to the dye pot. Boil gently for one hour, stirring often. Let cool. Hang the wool to dry in a shady place. Rinse late in clear water. When dry, pick out, or card out, the bits of root.

Spinach: Water drained from this vegetable makes an excellent dye. The mordanted wool is dropped into the liquid and boiled for half an hour. The result is a lovely shade of yellow.

Golden Rod: Most dye stuffs, barks, roots and young leaves are obtained in the spring. The flowers of the golden rod are about the last source of material in the season. It is so easy to pick and so satisfactory, and gives a lovely soft yellow, or, as I shall explain, by re-dyeing, an orange. My children and I gather the flowers with a basket, snipping the flowers from the standing plants with scissors. The plants are abundant, so that you quickly have all you need. Soak the flowers overnight with water to cover, about half a pail, and boil an hour in the morning. Strain. Add the mordanted wool and boil gently, one hour, stirring frequently. Dry before washing in suds and rinsing. To get an orange dye take the wool out of the dye pot after it has boiled for an hour. Add one-quarter ounce of potassium bichromate to the golden rod dye bath. Put the wool back in the pot and simmer 15 minutes. Dry. Wash in suds, rinse, hang out to dry.

Lichen: I don't know the name of this one. It grows on the rocky hills around Kenora and the Winnipeg River, and is greenish grey and brown when it clings, dry, to the rocks. We scraped it off with sticks and knives and shovels. Sometimes it comes away as a powder, sometimes in sheets. Cover what you get with water and let it soak overnight. It may be a bit

porridgey in the morning and need some more water added to it. Boil gently for one hour. Strain. To the fluid add your mordanted wool. Boil one hour, turning the wool frequently. Take out the wool, rinse and hang out to dry. The color is a lovely, soft, warm fawn.

These, then, are only a few suggestions. You can try endless others if you wish; the bark of fruit trees in the spring; the leaves of the birch, both spring and fall; the roots of other wild flowers besides Bedstraw; the galls of oaks, and so on and so on. Nor are color possibilities finished with the dyeing, for they can be mixed and blended later as you card. I hope you'll find here new pleasure from your garden.

(Reprinted from 1939 Winnipeg Flower Garden)

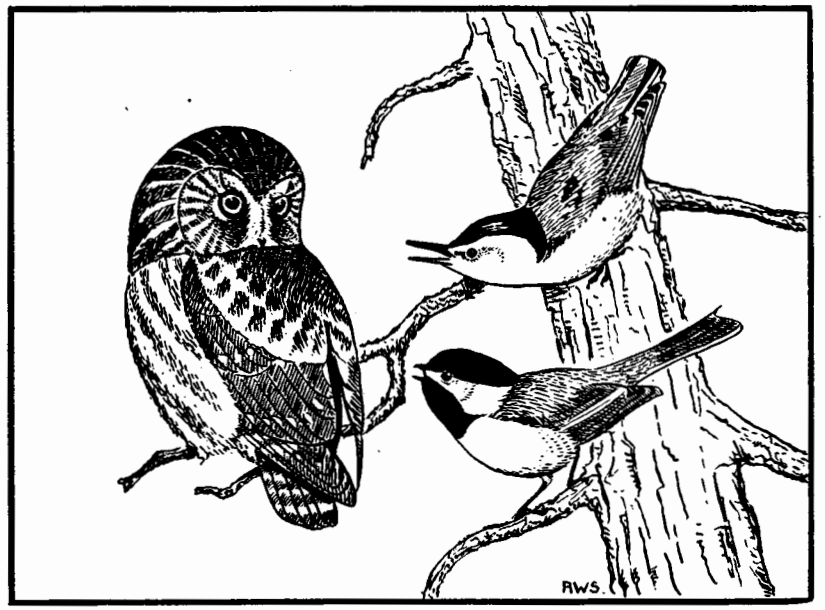
Birds Around the Home

R. W. SUTTON

Prairie gardens, in the city or its suburbs, are an attraction for birds, particularly where trees or shrubs are abundant. However, it is usually only during the spring migration, when the great influx of birds forces itself to our attention, that we really notice birds around the home. Once summer is firmly established we frequently tend to take birds for granted, forgetting what a lifeless place the garden would be without them.

Birds in the summer garden are never numerous. Only a handful of our native birds are content to dwell near the abodes of man, and even these are choosy about their nesting sites. Where shrubbery is dense, we can expect to find the nests of such birds as the Catbird, Brown Thrasher, Yellow Warbler, Least Flycatcher, Song Sparrow and Mourning Dove. Trees and saplings provide homesites for Orioles, Cedar Waxwings, Woodpeckers and a few others.

Many of our birds are cavity nesters by nature and, even though natural nesting sites may be lacking, birds of this type can be attracted to the garden by providing suitable bird



The tiny Saw-whet Owl, a confiding little chap, adds interest when he visits the winter garden.

houses. The birds that take most easily to nest boxes are the House Wren, Tree Swallow, Purple Martin and, unfortunately, the English Sparrow. Whole volumes have been written on the intricacies of bird-house building, but here we can cover the subject briefly, simply by listing a few important "don'ts."

Don't put up more than one bird-house to the average city garden. Birds jealously guard their territory. Better to have one pair of birds nesting successfully than two pairs doomed to failure through constant squabbling.

Don't use bird-houses with more than one compartment, **except for Purple Martins.** Other species prefer privacy—they nest singly or not at all.

Don't go in for "cute" bird-houses—those ornate replicas of summer cottages, etc. The birds are looking for a draft-free, weather-proof home, not a multi-windowed bungalow.

Aside from providing actual nesting sites for birds, the home owner can attract them further by setting up a bird bath in summer, and a feeding station in winter. A bird bath will bring birds from a large area to refresh themselves on hot summer days, and a feeding station, carefully maintained during the winter months, will provide food and shelter for the birds, and endless enjoyment for the owner.

Now, just what is the point in going all out to attract birds to one's home? When the veteran ornithologist turns his thoughts to this problem, he is often liable to wax just a little authoritative, and speak ponderously on the "economic value" of birds. To one whose sole hobby is ornithology, such studies are of real importance, but to the average person who just "likes birds," their economic value assumes a minor role, while their aesthetic value becomes paramount.

The writer is primarily a serious student of ornithology, but, like Emerson, we believe that "if eyes were made for seeing, then beauty is its own excuse for being." Today, with conservation so much under discussion, there is, perhaps, too strong a tendency to allocate to our wildlife a materialistic value—to say "This bird is good; that bird is bad." Thus, even our wildlife is coming to be closely associated with the dollar sign, its value as a simple source of pleasure is being lost.

To the average person, the greatest asset we have in birds lies in their aesthetic and recreational values, but we cannot escape the fact that they do have tremendous economic potentialities that can be of value to the individual home

owner and gardener. As a single factor in insect control, birds cannot be considered 100% effective. Such other controls as climate, disease, parasites, and other natural checks are equally and possibly more important that the work done by birds.

In a limited area, for example, a suburban garden where birds abound, there can be no doubt that the birds are an important factor in controlling insect pests **in that particular area.** Over an extensive area birds are, of course, less concentrated, and their effects on insects is naturally much less. The solution, therefore, lies in making the garden sufficiently attractive that birds will form a natural concentration.

Many of our birds are non-selective as regards insect food, and eat beneficial as well as harmful insects, but some species show a decided preference for harmful insects. For example, we have the Cuckoo's feeding on tent caterpillars, and the Oriole's taste for click beetles (the adult stage of the wire worm).

The Woodpeckers have been much maligned because people, seeing them hammering at trees, assume that the tree is being damaged. Nothing could be farther from the truth. The birds are actually saving the tree, seeking out harmful larvae and beetles from the infested areas. The fact that these birds actually concentrate in areas of heavily infested trees (where their labor is better rewarded) makes them an important factor in the control of forest insect pests, both in the adult stage and as wintering larvae.

We could go on, endlessly enumerating the economic value of various birds to the gardener, but it should suffice to say that virtually all birds should be made welcome around the home. The only possible exception is the aggressive House Sparrow, whose untidy nests clutter up our gables, and who is capable of driving out more desirable birds. At any rate, all birds, "good" or "bad", add untold interest to the summer garden and, in winter, provide its sole spark of life. So let us not evaluate our birds in terms of dollars and cents. Let us, instead, welcome them for what they are—welcome companions whose activities brighten our seasons.

Pointers for Horticultural Exhibitors

E. T. ANDERSEN

It is not possible in the scope of this article to discuss all angles and details of exhibiting fruits, flowers and vegetables at garden shows. A few pointers may be given, however, which apply to all types of exhibits in general and which are for the most part the deciding factors in a judge's decision of superiority.

The three main considerations are uniformity, condition, and quality. In selecting specimens for an exhibit few inexperienced persons appreciate the importance of uniformity of size and shape or type. One or two specimens in an exhibit of, for instance, carrots, which are small in size compared to the other roots, or which are either noticeably longer or shorter or of a different shape will greatly lower the appeal of the exhibit. An exhibit of uniform specimens will attract attention even though roots may be somewhat small or otherwise inferior. Uniformity of color is also very essential. Poorly colored specimens in an exhibit are far more prominent and noticeable where such specimens are included along with some of very good or high color. This does not mean that good color is not necessary for a top exhibit. Color is a good indication, in many cases, of quality, and no low quality exhibits should ever become prize winners.

The term "condition" refers to the freshness, soundness, color, neatness and freedom from blemishes of the specimens of the exhibit. Good specimens for an exhibit of fruit or vegetables must be firm and free from insect or mechanical damage of any kind. Wilting in exhibits is very common and is usually accompanied by a loss in color. Exhibits should always be clean. Root vegetables are usually washed or they may be cleaned by brushing. They should never be scraped or brushed with a hard brush as this is likely to break the skin and cause early wilting and breakdown. A soft damp cloth can often be used to good advantage in cleaning roots and potatoes.

Wilting or fading in flowers are indications of poor condition. Young recently-opened blooms are usually the better ones to select as they will appear fresher and brighter and will tolerate longer and to better advantage than older blooms the warm atmosphere of most show-rooms. When depth of bloom is an important feature contributing to quality as it may be with such flowers as Zinnias, Dahlias and Marigolds, it may be necessary to select blooms which have attained some

age. In these cases care should be taken to avoid blooms on which the lower petals show deterioration or fading to any extent due to age.

High quality may be the result of good seed, stock, or variety combined with good cultural treatment. Quality is expressed by high appeal, color, texture and in some cases by size. In carrots, for example, a high quality root is tender, smooth, high in color, with a small reddish core and without any green color in the shoulder. In flowers, quality may be expressed by doubleness, depth of bloom, length or size of spikes, stems, or florets, straightness and regularity of spikes and floret arrangement as in Gladioli, and firm, durable texture of petals.

The size of specimens in an exhibit is an important point. This is particularly true of vegetables and fruits. Too often preference is given to the largest specimens with insufficient thought to quality. In many cases very large fruits or vegetables tend to be coarse and rough, and do not represent the variety or type to which they belong. In general it might be said that the best size is that which is in most demand by the consumer, or that which a good cook will select for table use. Stage of maturity is likewise important. Fruits and vegetables having top market or table quality or in prime storage condition will be at the right stage for exhibiting. Where the specimens are exhibited according to variety name, all specimens should be representative of the variety. Specimens too large or too small to closely represent the variety will lose points. Medium or slightly above average size usually indicates the best choice. Neat and careful arrangement of the specimens is also important.

Where an exhibit consists of a large number of different varieties or types making up a display either for competition or advertising, the same principles as for a single exhibit must be kept in mind. In addition, the arrangement of the display as a whole must be given careful attention. Very often general displays lose effectiveness because the number of specimens of each kind are too few or are too widely scattered so that no one kind is sufficiently prominent to make a strong impression on the spectator. It is well to include several specimens of a kind and to keep these together, so that the uniformity and quality of each kind will attract notice. Quite frequently also, such displays include a number of kinds which are little known or of little commercial value. Such specimens scattered through the display are likely to detract attention from the main display and reduce the effectiveness of the display as a whole.

Most vegetables and fruits if given considerations as the foregoing will yield good results in competition. All, how-

ever, including flowers, have features peculiar to the particular plant which to a large extent can be learned only through continued association with exhibitions of this kind. As an illustration of this fact, let us briefly consider carrots and onions. In judging of carrots, as already pointed out, the size of the core and the internal color and texture are important features indicating quality. These characteristics cannot be seen without cutting into the root. Thus the exhibitor, through experience, must learn to recognize such high quality roots from their external appearance in order to be successful. With onions, quality is judged by maturity, firmness at the base of the neck and by size. Necks must be small, indicating maturity. Onions, except pickling types, should be large, indicating tenderness and sweetness. They should never be peeled closely to expose the fleshly leaves of the bulb. A covering of one or more layers of dry scales or leaves will give protection against wilting or bruising. In general, vegetables for exhibit should be prepared or trimmed in the same manner as they are for the market.

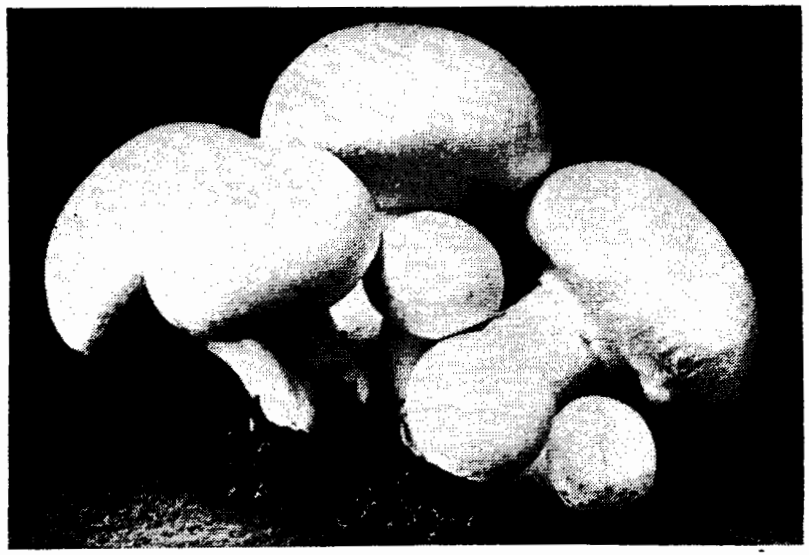
The number of specimens required to make up an exhibit is usually given in the entry list. This number must be closely adhered to. Either a larger or smaller number of specimens will disqualify the entry. All other regulations given on the entry should also be studied carefully and followed.

Mushrooms — Ancient and Modern

O. A. OLSEN

From the time of the earliest available records, the mushroom has been considered a prized delicacy by some and an object of fear and loathing by others. Early man, in his wanderings through meadows and woods, likely came upon the white, tender, pleasantly fragrant fungus and urged on by hunger and curiosity, he made a meal of one of these pretty clumps and—was killed. Possibly many of these occurrences contributed to the fear of mushrooms which generations of people have had. Legends going back to the time of the Greeks and the Romans tell how venomous snakes slithered over meadows and forest floors and stopped to breathe on mushrooms, thereby turning them into poisonous toadstools. Other people were more fortunate in their experiences, and with them, mushrooms became a sought-after food. Dioscorides, Pliny and Galen considered mushrooms worthy of their study and wrote of them, dividing them into poisonous and edible kinds.

However, through the centuries, the mushroom remained an object of disgust to some as evidenced by the description given by Shelley when speaking of the "shaggy manes,"



Courtesy of the Mushroom Supply Co., Toughkenamon, Pa.

which really are a tender tidbit when young, but turn to an inky, dripping mass when mature.

"Their mass rotting off them flake by flake,
Till the thick stalk stuck like a murderer's stake,
Where rags of loose flesh still tremble on high,
Infecting the winds that wander by."

In spite of the abuse which has been heaped on the head of this dweller of shady meadows and cool woods, the mushroom is considered by many to be a very valuable addition to the flavoring agents and an excellent means of adding zest and piquancy to various dishes. Several edible types of mushrooms grow wild in Manitoba as well as some deadly poisonous types. So before making an outing to gather the popular fungus, one must be able to recognize the mushrooms which are good to eat. The old rule, "an edible mushroom can be peeled," is worthless and the only safe source of knowledge is from a mushroom expert, or a good book on mushroom identification. One such book is "The Mushroom Handbook," by L. C. C. Krieger, published by the Macmillan Company, New York. Two useful, well illustrated bulletins are "Common Edible and Poisonous Mushrooms of Ontario," Bulletin 397, of the Ontario Department of Agriculture, and "Some Edible and Poisonous Mushrooms of North Dakota," Bulletin 270, of the North Dakota Agricultural College, Fargo, written by H. S. Barnett.

In addition to their value for flavoring, mushrooms compare favorably with green vegetables in food value, being high in protein and minerals, but low in carbohydrates. The cultivated mushroom yields even more protein than fresh lima beans. Mushrooms furnish fair amounts of calcium and manganese, high amounts of phosphorous and potassium and high amounts of iron, copper and zinc, so necessary to prevent anemia. They are also considered to be a good source of thiamin and riboflavin.

Many gardeners have been interested at one time or another in growing mushrooms, intending to use a tree-shaded spot or space under the back steps, etc. Although some mushrooms have been produced by such means, unless climatic conditions were just right, most of the ventures have led to disappointment. The mushroom is one of the most exacting of crops and obstinately refuses to co-operate unless its requirements are satisfied. However, with the proper facilities, some knowledge and the willingness to learn more, the amateur can grow mushrooms. The purpose of this article is not to furnish the detailed information necessary for the successful culture of mushrooms, but rather to outline the requirements of the crop and to indicate sources of expert information.

The essential material for growing mushrooms is a good supply of fresh horse manure which contains wheat, barley, or rye straw. Manure from horses bedded with shavings should be avoided. Space must be available for composting, which is the process of fermenting the manure to convert the raw food materials into nourishment available to mushrooms. The composting process requires four to five weeks, during which time the manure is turned at weekly intervals and water is added if necessary. A source of good loamy garden soil which is neutral to slightly alkaline is also required. This is used for "casing" or placing over the beds of manure.

Mushrooms can be grown in any building, cellar or basement which can be well ventilated and in which the temperatures can be controlled. This feature is very important as mushrooms require plenty of fresh air at the proper temperature. One must be able to raise the temperature to 130° to 145° F. for several days for pasteurizing the beds of compost to kill insects and diseases and hold it at 50° to 65° F., preferably 54° to 58° F. during the growing period. Humidity of the air should range between 70 and 85%. The beds must be away from direct sunlight, but diffused light will do no harm. The beds in which mushrooms are grown should not be placed on a floor but raised at least two feet to allow more ventilation. Commercial mushroom houses usually have tiers of beds one above the other and separated by two feet.

The mushroom spawn or "seed" may be obtained in several forms, as brick spawn, bottled spawn, or bottled tobacco stem spawn. The last two forms are the best types as they are sterile cultures of pure mushroom spawn and contain none of the impurities or diseases which may appear in brick spawn. The spawn should be obtained from a reliable laboratory where the spawn is produced by the most modern methods. One jar of spawn is usually sufficient to seed forty square feet of bed space.

The crop of mushrooms usually begins to appear about six to eight weeks after the spawn is planted. If the house is kept at a temperature of 50° to 55° F. the crop continues for from four to six months, while if higher temperatures are maintained, 60° to 65° F., the crop may be over in three months. During the growing period great attention must be paid to watering or many mushrooms will be disfigured by the splashing water.

A book which gives a concise, easy to follow discussion of mushroom growing is the "Manual of Mushroom Culture," by G. R. Rettew, O. E. Gahm and F. W. Divine, published by the Chester County Mushroom Laboratories, West Chester, Pennsylvania. An older, but useful book is "Mushroom Growing," by B. M. Duggar, Orange Judd Co., New York.

Recommended Vegetable Variety List

Approved by the Vegetable Committee of the Manitoba Horticultural Association

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.
Baking or Dry Shell	Grainer (Gohns, Rainy River), Great Northern (large), Michilite.
Broad Beans	Broad Windsor (long and short pod varieties).
Pole Beans	*Kentucky Wonder (green and wax podded), Dutch Case Knife.
Edible Soybean	Agate (early), Blackeye.
Beets	Early Wonder (early), *Detroit Dark Red Types.
Brussels Sprouts	Improved Dwarf, *Long Island Improved.
Cabbage	
Green, Early	Golden Acre, Viking Golden Acre (very early), Jersey 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" (Codenia) 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 (early), Marcross.

Cucumbers
- Slicing ..... Early Russian (very early), Straight 8, Marketer.
- Pickling or Dill ..... National Pickling, Mincu, Early Russian.

Egg Plant ..... Blackie, Black Bountiful.

Leeks ..... Giant Musselburg, Giant Carenton.

Lettuce
- Leaf ..... Grand Rapids Types, Early Curled, Simpson.
- Head ..... New York Types, Great Lakes Improved, Imperial Types.
- Cos ..... Paris White.

Muskmelon ..... Far North (very early), Champlain.

Onions
- From Seed, Yellow ..... Sweet Spanish Types (transplants), Yellow Globe Danvers No. 11, Brigham's Yellow Globe, Ebenezer (also grown for sets).
- Red ..... Red Wethersfield.
- Perennial ..... White Welsh, Egyptian.
- Pickling ..... Silver Skin.

Parsley ..... Paramount.

Parsnips ..... Intermediate Guernsey, Half Long, Hollow Crown, Short 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 ..... Harris Earliest (early), King of the North,
Hot ..... Cayenne (early), Hamilton Market (mid-season).

Pumpkin ..... Cheyenne Bush, Small Sugar, Connecticut Field.

Radish ..... Sparkler, Comet, French Breakfast, White Icicle.
Winter ..... Black Spanish.

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

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

Swiss Chard ..... *Giant Lucullus.

Squash
Winter ..... Greengold, Bush Buttercup, Green and *Golden Hubbard Types.

Tomatoes
Non-staking ..... Early Chatham, Bounty.
Staking ..... Earliana (for home growing), Stokesdale No. 4, or Early Stokesdale, Bonny Best.

Turnips
Swede or
Rutabaga ..... Laurentian, Canadian Gem.

Watermelon ..... Sweet Sensation (extra early), Early Canada (early).

Vegetable Marrow .. Long White Bush.

Varieties first on the list are also in most instances first recommended. The foregoing list is recommended on the basis of quality, adaptability to Manitoba conditions, suitability for the farm garden, commercial growers, processors and existing seed stocks.

Less Commonly Used Vegetables

Artichoke
Jerusalem ..... White Skinned Types.

Borecole or Kale .... Dwarf Green, Curled Scotch.

Broccoli ..... *Italian Green Sprouting or Calabrese.

Celeriac ..... Large Turnip Rooted.

Chicory ..... Witloof (for basement forcing).

Chinese Cabbage .... Chihli, Wong Bok (short head).

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

Ground Cherry ..... Novelties, Golden and Purple Husk, Tomato.

Herbs ..... Anise, Balm, Borage, Caraway, Catnip, Chervile, Chives, Dill, Fennel, Garden Cress Horehound, Lavender, Marjoram, Mint, Pot Marigold, Mustard, Rosemary, Saffron Sage, Summer Savory, Sweet Basil, Thyme, Wormwood.

Horse Radish .... Maliner Kren.

Kohl Rabi ..... White Triumph of Prague.

Okra ..... Dwarf Green.

Salsify ..... Sandwich Island.

Turnip
Summer ..... Purple Top Milan, Golden Ball.

NOTE: Varieties marked with (*) 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.

NOTE: * = transplanting dates.

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.		Apr. 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: Distances recommended above for spacing of vegetable plants relate more specifically to large garden 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 Winnipeg Horticultural Society Vegetable and Flower Show

Held Aug. 25th and 26th, 1948, in the
Civic-Caledonian Rink

The annual Vegetable and Flower Show of your Society was held in conjunction with the Manitoba Fruit Show, at the Civic-Caledonian Rink on Aug. 25th and 26th. The flower exhibits were about the same as last year, vegetable entries were somewhat larger, but the entries of fruit were down considerably from last year. There were a total of 750 entries from 100 exhibitors, of whom 81 received prizes totalling $479.75. Rent of rink and other expenses brought the total cost of the Show to $706.58. This would have been much higher had it not been for the valuable assistance received from The T. Eaton Co. They not only loaned us the counters for the show but delivered them to the rink and returned them afterwards. Our thanks to them for a very real help.

We were privileged to have with us on the opening evening His Worship Mayor Garnet Coulter and Mrs. Coulter. Mrs. Coulter very graciously officially opened the Show at 8 p.m.

The Winnipeg Parks Board again sent in a very fine display of flowers, and the Modern Experimental Station and the Zadok Nursery each displayed a very fine assortment of Manitoba grown fruits. Our thanks to them for their help, and to the judges, Miss Allen, Mr. Ball, Mr. Ure, Mr. de Jong and Mr. Bevin. My personal thanks to those Directors and others who so ably assisted in setting up the show, and last, but by no means least, to Mr. R. W. Brown and his helpers for the excellent manner in which they took care of the large number of entries.

Respectfully submitted,

WM. J. TANNER,

Chairman, Flower Show Committee.

Report of the Home Grounds Committee for 1948

The annual Home Grounds Competitions for 1948 were very satisfactory. There were 36 competitors, of whom 24 won prizes.

We are indebted to the following who very generously donated the prizes: The Winnipeg Tribune, Winnipeg Free Press, C. H. McFadyen Co., Burns and Co., Winnipeg Hydro Electric System, Patmore Nurseries Ltd., Charleswood Nursery, Peoples Credit Jewellers, Manitoba Hardy Plant Nursery, Hudson's Bay Co., Winnipeg Supply and Fuel Co., Swift Canadian Co., W. Atlee Burpee Co., Wallace Nurseries Ltd., Dixon-Reid Co. and J. H. Ashdown Co.

There are five trophies for annual competition. These were won by: Mr. T. J. Foxcroft, for lots up to 33 foot frontage; Mr. Roy Munt, for lots 34 to 66 foot frontage; Mr. A. R. Burt, for lots over 66 foot frontage; Mr. F. S. Skocdopole, for novice home grounds, and Mr. T. J. Foxcroft, for highest aggregate number of points.

The judging was done by Mr. Hector MacDonald and Mr. G. Churcher, and the winners were:

Lots up to 33 feet:

1st—Mr. T. J. Foxcroft
2nd—Mr. J. I. Huston
3rd—Mrs. W. W. Gyles
4th—Mr. F. R. Brittain

Lots 33 to 66 feet:

1st—Mr. Roy Munt
2nd—Mr. R. J. Emerson
3rd—Mr. T. McKeown
4th—Mr. M. Harding

Lots over 66 feet:

1st—Mr. A. R. Burt
2nd—Mr. A. Goodall
3rd—Dr. O. G. Hague
4th—Mr. Peter Finn

Novice home grounds:

1st—Mr. F. S. Skocdopole
2nd—Mr. A. Mattern
3rd—Mr. R. W. Bunyon
4th—Mrs. T. J. Gandy

Utility Garden:

1st—Mr. W. A. Edmonds
2nd—Mr. R. P. Rooke
3rd—Mrs. T. J. Gandy
4th—Mr. A. Goodall

Flower Garden:

1st—Mr. T. J. Foxcroft
2nd—Mr. T. McKeown
3rd—Mr. M. Harding
4th—Mr. A. Mattern

Window Boxes:

1st—Mr. T. McKeown
2nd—Miss M. G. Jillett
3rd—Mr. J. I. Huston
4th—Mr. R. Preston

Rock Gardens:

1st—Mr. Geo. E. Walsh
2nd—Mrs. W. Gyles
3rd—Mr. R. V. Walsh
4th—Mr. C. E. M. Ward

Lawns:

1st—Mr. T. J. Foxcroft
2nd—Mr. J. I. Huston
3rd—Mr. W. A. Edmonds
4th—Mr. Roy Munt

Herbaceous Perennials:

1st—Mr. A. R. Burt
2nd—Mrs. W. Gyles
3rd—Mr. T. J. Foxcroft
4th—Mr. Roy Munt

Highest Number of Aggregate Points—Mr. T. J. Foxcroft.

R. SKELDING,
Chairman.

Report of the Vegetable Garden Competition

This year the Free Press decided to discontinue their annual Victory Garden Competition and asked the Society to carry on the competition and agreed to sponsor it by donating $160.00 as prizes and four miniature trophies for the first prize winners in each class.

After considerable discussion your Directors decided to go ahead with the competition which was open to any citizen of Greater Winnipeg.

The competition was divided into four sections as follows:

Class A—Garden in connection with a new home.
Class B—Garden up to 25 feet in width.
Class C—Garden 25 to 50 feet in width.
Class D—Garden over 50 feet in width.

There were 114 entries and the judging was done by Mr. W. J. Tanner, Mr. E. C. Law and Mr. R. W. Brown, who spent five days on the job. The winners are:

Class A:

1st—Mr. F. C. Bolton
2nd—Mr. D. E. Walker
3rd—Mr. W. R. Rudd
4th—Mr. A. Mollenbeck
5th—Mrs. M. R. Stamp

Class B:

1st—Mr. Thos. L. Scott
2nd—Mr. Albert Beckett
3rd—Mr. Howard D. Lay
4th—Mr. Jas. Aikenhead
5th—Mr. W. A. Croxford

Class C:

1st—Mr. C. F. Polly
2nd—Mrs. A. Zapotoczny
3rd—Mr. Wm. A. Edmonds
4th—Mr. W. G. Kotchapaw
5th—Mr. Wm. Jurex

Class D:

1st—Mr. J. A. Chabot
2nd—Mr. Eric P. Jones
3rd—Mr. M. Hervo
4th—Mr. R. Smyth
5th—Mr. R. M. Penfold

R. W. BROWN,
Chairman.

Preparing the Ground for a Vegetable Garden

The beginner with vegetables is very likely to make the mistake of planting in ground that has not been thoroughly prepared. Most vegetables, to produce a full crop of first quality, must have conditions that enable them to grow rapidly and without a check. This means extremely thorough soil preparation, both mechanically and in the supply of plant foods.

Individual small gardens usually must be dug by hand. Proper digging involves slow, hard work. The longer in advance of planting the ground can be turned over, the better Many gardeners dig the soil (where the earliest crops are to be planted) the preceding fall, turning it up roughly and thus getting the benefit of the pulverizing action of alternate freezing and thawing during the winter. A further advantage of digging in advance of planting is that weed seeds have a chance to germinate. The tiny weed seedlings are destroyed when the soil is worked over before sowing or planting.

✦ ✦ ✦

In the well-arranged vegetable garden, planting time is a more or less continuous operation from the time the frost is out of the ground until the middle of summer. The three most active planting periods, however, are very early spring, when the hardy, frost-resistant vegetables are put in; four to six weeks later, when the tender ones are planted; and four to eight weeks later than this when many crops for late fall and winter use are sown.

✦ ✦ ✦

Grow some gourds this summer to be used for winter decoration. They are not particularly difficult to grow. The culture is practically the same as that for cucumbers or melons. Gourds should be thoroughly matured on the vines before they are picked. They will not stand freezing if they are still succulent. If by necessity they are taken at the immature state, they should be handled with the utmost care and allowed to dry and cure indoors.

To keep gourds in their natural state, waxing is one of the best methods, using ordinary floor wax and polishing lightly. Some use shellac, but this changes the color and appearance. Some also like to decorate and paint them in simple or fanciful fashion. Stems should be left on the gourds, removing them from vines by cutting. Maturity may be judged by feeling them, but it is not wise to test with the fingernail. They should be dry and the stem should be withered.

Proper methods in setting the young plants outdoors are just as important as good care while getting them started indoors.

1. It is a good plan to harden the young plants to outdoor conditions by setting the boxes outside in good weather for several days before transplanting.
2. Either choose a day that is cool and cloudy, or do the transplanting in the afternoon.
3. Water the plants well before disturbing them.
4. Avoid injury to the roots in taking up the plants, and if possible keep a ball of earth around them until they are set in the open.
5. Water the soil before and after setting the plants. If the soil is very dry, partly fill each hole with water before setting the plants.
6. Firm the soil around the roots of the plants so that they can take hold securely.
7. The plants will get a quicker and better start if they are shaded from the direct rays of the sun for a few days after transplanting.

✦ ✦ ✦

When plants are knocked gently from pots, root system shows whether repotting is necessary. If roots have formed a thick, dry web on the outside of root ball, repot. If visible roots are few and appear succulent and healthy, repotting is not needed.

✦ ✦ ✦

All plants have growth cycles which include periods of rest. As trees lose their leaves in the fall and enter into a dormant period, so do house plants at the same time rest in greater or lesser degree. In winter, ferns and palms are less active and produce fewer new leaves than in spring. In early fall many of the cacti remain utterly quiet. After flowering, poinsettias and cyclamens appear on the point of death, when they are only going to sleep.

All plants which are resting require less water and warmth than when they are in a period of active growth. Many can be left entirely dark and dry. None are fed at this time. The resting condition of plants is not always an easy one to identify, but constant observation of each variety eventually reveals it, and the indoor gardener is accordingly guided in the treatment she gives them.

✦ ✦ ✦

Manure, compost, and humus supplied by growing green-manure crops will all help to lighten a clay soil. Clay soil should never be dug or cultivated while wet.

Reference Index to Articles in the Flower Garden, 1945 to 1948

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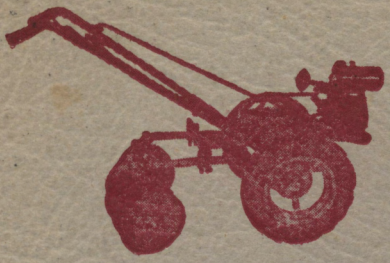

PLANET JR.

5 H.P. — 3 H.P. — 1½ H.P.

ALSO— WHEEL HOES
HAND SEEDERS
HORSE AND TRACTOR
DRAWN EQUIPMENT

CHOREMASTER

1½ H.P. One Wheel

FOR BETWEEN THE ROW
CULTIVATION

MAKES YOUR OWN
LAWN MOWER A
POWER UNIT

SICKLE BAR—SNOW PLOW

GREEN CROSS CHEMICAL

FOR CONTROL OF
INSECTS — WEEDS
AND FUNGUS

SPRAYERS AND DUSTERS FOR FARM AND GARDEN

HERB GRAPENTINE'S

YOUR JOHN DEERE DEALER

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