A GARDEN OF FLOWERS FOR EVERY HOME

The

WINNIPEG FLOWER GARDEN

1953

Presented by the

WINNIPEG HORTICULTURAL SOCIETY

Foreword

by G. S. REYCRAFT, President

The Directors of "The Winnipeg Horticultural Society" take pleasure in presenting the 1953 edition of "The Winnipeg Flower Garden."

The Year Book Committee has attempted to bring to you a wide range of interesting and helpful articles and instructive information based on Western Canadian growing conditions.

As "The Winnipeg Flower Garden" is now distributed not only to members of our Society, but to members of other horticultural groups both in Manitoba and adjacent provinces, the material in this book has been compiled for, and is directed to all western gardeners, in city, town and farm who enjoy horticulture and take pride in beautifying their homes and gardens. It is our sincere hope that this book will help you reap greater enjoyment and success in your gardening.

We solicit the full co-operation of all members of our Society in building up a substantial increase in membership in 1953. We are pleased to again offer plant premiums to those who secure new members.

Our Society has monthly meetings from November to May with interesting speakers, slides and films. Bring your gardening friends to our meetings. They will appreciate your interest and the value of our Society.

Our summer program will consist of a Rock Garden competition, Home Grounds competition and the Vegetable Garden competition, sponsored by the Winnipeg Free Press. We will also have our annual summer picnic and in August our Annual Flower and Vegetable Show. We urge all members to plan to, and exhibit, at least several entries in this your Show.

I wish to express appreciation to our Advertisers, Donors and Contributors, who have made the publication of this book possible.

To all members and fellow horticulturists my very best wishes for health and prosperity and a year of happy and successful gardening.

Your Favorite Programme

CKRC

WINNIPEG 630

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President's Report – 1952

By T. YAGER

Members and friends of the Winnipeg Horticultural Society:

It gives me great pleasure to report that we have had a very successful year. Our membership being 543, an increase of 75 over last year, no doubt due to our Director and Membership committees being active.

We held seven directors meetings with an attendance of thirteen and nine general meetings with an attendance average of 186. Showing the interest taken by members and friends, also the programs arranged by G. S. Reycraft, chairman of Program committee, were appreciated. The picnic arranged by Messrs. Weir, Tanner and Reycraft, to the picnic grounds of Mr. D. Patterson of Westbourne, was enjoyed by all who went. I wish to express my sincere thanks to Mr. and Mrs. Patterson for service and the reception they gave us.

The Flower Show committee headed by Mr. Tanner were on the job at all times. They planned a Peony Show in June which could not be held, on account of the heat wave in April, bringing on the flowers in some areas sooner than expected. This loss was made up for by the Rockery Display at the Red River Exhibition set up by W. J. Tanner and R. C. Pragnell, with the assistance of the Winnipeg Parks Board. It was quite an undertaking for the short time that they had for the project. Our annual Flower Show was as successful as ever as Mr. Tanner's report will show.

The Garden Competitions were taken care of by the society, supplying judges for the Rock Gardens, Home Grounds, as well as the Vegetable Gardens Competitions sponsored by the Winnipeg Free Press. The responsible judges were Messrs. G. Churcher, W. Emerson, G. S. Reycraft, H. MacDonald and W. J. Tanner.

I have had some very complimentary remarks on our year book being of great value to our city gardeners, especially new home owners. I wish to take this opportunity of thanking those who contributed articles, the advertisers and those who donated towards making it a success and our Year Book committee under the able guidance of Mrs. R. Munt.

Miss G. Matchett, in charge of our Publicity and Membership committee, has left no stone unturned in fulfilling her duties. She was always able to have our meetings and interesting programs announced over the air as well as the press. Thanks are due to the radio stations, Winnipeg Free Press, Winnipeg Tribune and rural publications that co-operated.

It certainly has been a pleasure for me to be able to serve you especially with the assistance of the directors, their co-operation was certainly marvelous. Mr. R. W. Brown, our secretary, is doing a wonderful job of looking after the interests of the society; I sometimes wonder how many hours he works a day, especially at show or garden competition time.

To further the work of the International Peace Garden, a donation of $25.00 was made by the Society.

Winnipeg Horticultural Society

OFFICERS AND DIRECTORS FOR 1953

President,
MR. G. S. REYCRAFT ..... 92 Queenston St.

1st Vice President,
MR. H. MacDONALD ..... Kildonan Park

2nd Vice President,
MR. D. CAMPBELL ..... 145 Polson Ave.

Auditor,
MR. W. F. BLACKWELL ..... 865 Spruce St.

Secretary Treasurer,
MR. R. W. BROWN ..... 675 Valour Road

Directors

MR. T. YAGER ..... 1103 Spruce St.
MR. A. M. OSWALD ..... Ste. 5, Lonsdale Apts.
MR. W. J. TANNER ..... 518 Henderson Hwy., East Kildonan
MR. E. F. BALL ..... Assiniboine Park
MR. F. J. WEIR ..... 153 Legislative Bldg.
MR. W. F. BLACKWELL ..... 865 Spruce St.
MR. D. CRAW ..... 300 Eugenie St., Norwood
MR. R. HIKIDA ..... 670 Spruce St.
MR. F. J. SKAPTASON ..... 744 Banning St.
MR. J. P. DEWET ..... 948 Valour Road

Associate Directors

MR. R. SKELDING ..... 1097 Dominion St.
MR. J. C. WILLIAMS ..... 644 Garwood Ave.
MR. W. G. D. ROBBINS ..... 146 Borebank St.
MR. T. E. HOWARD ..... 870 Palmerson Ave.
MRS. ROY MUNT ..... 545 Basswood Place
MISS G. MATCHETT ..... 247 Campbell St.
PROF. E. T. ANDERSEN ..... 962 North Drive, Fort Garry
MR. C. E. LAW ..... 26 Sherwood Place, St. Vital
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MR. F. M. HALL ..... 602 Kylemore Ave.
MR. R. C. PRAGNELL ..... 60 Lennox Ave., St. Vital
MR. F. C. W. RICE ..... 185 Ash St.
MR. T. R. HODGSON ..... 231 Carpathia Road
MR. J. J. COFFEY ..... 655 Broadway

LIFE MEMBERS

PROF. F. W. BRODRICK
MR. JOHN WALKER
MR. R. W. BROWN
MR. J. A. MacPHAIL
MR. H. E. SELLERS
MR. T. E. HOWARD
MR. W. J. TANNER

PAST PRESIDENTS

1931—Mr. Henry Downing*
1932—Mr. Wm. Stubbs*
1933—Dr. R. W. Kenny*
1934—Dr. Percy G. Bell*
1935—Mr. John Walker
1936—Mr. R. R. Nichol*
1937—Mr. R. W. Brown
1938—Dr. W. J. Riley
1939—Mr. J. A. MacPhail
1940—Mr. Thos. O. Graham
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
1949—Mr. Q. C. Moffatt
1950—Mr. A. M. Oswald
1951—Mr. A. M. Oswald
1952—Mr. T. Yager

*Deceased

Winnipeg Horticultural Society

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING OCTOBER 31ST, 1952

Membership—543

RECEIPTS

Membership fees	$ 554.00
Government Grants:—	
Exhibition	449.50
Membership	53.80
Expenses, 1951 Fruit Show	285.48
Municipal Grant	100.00
Donations	419.00
Entry fees, Flower Show	65.40
Admission to Flower Show	97.95
Rent of space at Flower Show	10.00
Advertising	1,285.00
Sale of Books	78.75
Sale of Tickets, Annual Meeting	112.50
M.H.A. half of Fruit Show prize money	78.25
Refund on printing year book	16.50
Miscellaneous	.62
	$3,606.75
Balance on hand, Nov. 1st., 1951	403.13
	$4,009.88

DISBURSEMENTS

Printing	$ 215.91
Postage	239.71
Flower, Vegetable and Fruit Show	745.56
Home Grounds Competitions	273.08
Year Book	1,609.07
Stationery	13.80
Honorarium	250.00
Cartage	7.00
Telephone	43.35
Premiums	34.75
Annual meeting	127.30
Rock Garden Exhibit	9.70
Picnic	12.90
Repairs to typewriter	13.00
Donation to Peace Garden	25.00
Miscellaneous	27.49
	$3,647.62
Balance on hand Nov. 1st., 1952	362.26
	$4,009.88

R. W. BROWN,
Secretary Trasurer.

AUDITOR'S REPORT

To the President and members of the Winnipeg Horticultural Society:

I have compared the above statement with the books and vouchers, relating thereto, and certify that it is a correct record of the receipts and disbursements of the Winnipeg Horticultural Society for the year ending October 31st., 1952, according to the information and explanations given me.

W. F. BLACKWELL,
Auditor.

Winnipeg, Nov. 19th., 1952.

Remembered Personalities In Manitoba Horticulture

J. H. EVANS

Former Deputy Minister, Manitoba Department of Agriculture and Immigration.

Distance leads to uncertainty and one's memory cannot always be depended upon for absolute accuracy. This aptly applies to this effort. This is true however, the earlier happenings are much clearer in one's mind than more recent events. My immediate regret is that there are so many names of Manitoba residents who made outstanding contributions to horticulture whose names cannot be included in this feeble attempt due to space, time or memory.

My early recollection is of the many things we thought we would be unable to grow in Manitoba. Since then these have proven figments of the imagination only, and very far from actual experience. Mr. A. P. Stevenson used to say, with frequency, that "Each spring sees its quota of brush piles." This would mean that Manitoba had proceeded on a trial and error basis.

I frequently heard Dr. E. Cora Hind relate how, shortly after she arrived here, when taking a walk one Sunday afternoon near the Legislative Building, she saw in the distance some people gazing with interest and awe at an object which, on nearer view, turned out to be a lilac bush in bloom. This has always impressed me as a good example of the rarity of plant growth and how many wonders were in store for one and all in this great field of endeavour.

My own connection with actual growth in the Province of Manitoba took place in the spring of 1906, and on one of Manitoba's very good farms. Here I read of Mr. A. P. Stevenson's splendid work and unbounded enthusiasm. I little thought that later on we would become fast friends.

In the fall of 1909 I entered the Manitoba Agricultural College and there met that fine gentleman, Professor Brodrick, who kindled anew my respect and affection for horticulture. It was while there I met Stevenson, Buchanan, Whellams, J. J. Ring, Larcombe, Bedford, Baird, Skinner, Boughen, et all. Brodrick, in some minds, lacked the enthusiasm needed to recruit new beginners, but, to me, he has always been sound and thereby obviated a great deal of disappointment and false promises.

Stevenson started, as I recall, to develop or discover some good apples that would thrive under Manitoba conditions. From that good start he became an all-round grower, and ended as a nurseryman. He had a great fund of humour and a merry twinkle in his eye. He could make contact with

nature attractive and pleasant and, as a result, from there on one wanted to start growing things. He was a very kind man. Just one illustration on this point. He had shipped some small trees to a grower and was naturally anxious to see how they were doing. I happened to be his lone company. We found that the man had overlooked removing the tags and the wire by which they had been attached. These had become imbedded in the bark. Mr. Stevenson gave vent to remarks that would indicate that the tags were attached to a person's leg and that actual pain was felt. To him the tree did feel pain, for such was his capacity for sympathy. Undoubtedly, he can be assigned as the real father of horticulture in our province.

No attempt is made here to assign order of preference or achievement. That is obviously incapable of fulfilment. Those who are omitted are either too young or unintentionally overlooked. Lest my remarks leave the impression that all horticultural undertaking in Manitoba was the work of the male, let me immediately admit that a far larger number of females are involved than males. Here my experience speaks more loudly than elsewhere. The exact place that women have occupied and still do in horticulture is an honour I leave for one of their own sex to expound.

In point of date, Buchanan was next to Stevenson to attract my interest. As I recall, he operated just west of Winnipeg, in Charleswood, and his main interest, as far as I was to learn, was apples and plums.

Back of all the intense interest these men, one and all, took in horticulture was their attempt to improve the looks and satisfy the needs of the home and its surroundings. Apples were not produced for the beauty of their bloom in spring, nor their fruit in the fall, but for their use in the home. It was one of many attempts to become self-sufficient. We were isolated, and legitimate costs of bringing fruits, vegetables and their products here deprived all too many of their health-giving advantages and pleasurable consumption. To my mind this was the real urge and, while gratefully acknowledging leadership, the people's needs were the controlling factors.

A most ardent advocate of better horticulture was H. C. Whellams. He was a tower of strength in support of all movements calculated to improve the industry. He was a market gardener in East Kildonan, and a good grower.

J. J. Ring, of Crystal City, was one of the foremost growers of an adequate shelter belt. It was my pleasure to visit his home in company with Sir James Aikins during the first world war and to take part in an outdoor meeting held there. I mention this as proof of the unappraisable value of a sound

belt, since without it, we would not have been heard since it was a windy day. It made an impression on our minds that a calm day could not have made. He was a solid farmer and all that implies. I attended many horticulture meetings where he appeared and any words spoken by him were always to the point and carried weight. He worked by example and accomplished much. His memory in my mind is very green.

We had those in our midst whose chief interest was in flowers. Dr. Speechly and Dr. Baird are cases in point. Seldom did they speak without passing along valuable knowledge, and all largely gained from personal experience.

Dr. Bedford was best known as an agronomist. He put the Brandon Experimental Farm in motion and for many years managed it successfully and beneficially to western farmers. He, as a matter of course, kept his horticulture more or less under a bushel and was meticulous in keeping away from his fellow worker's field. But at heart, he was a strong advocate of the improvement of home surroundings and, when the occasion justified, was a strong supporter. He, as was his character, gave quiet but continuous encouragement to those with whom he came in contact. His students, more than the general public, benefited and will never forget his wise counsel. His partnership with Patmore and McKenzie was of short duration and his services were restored to the public with no outside interests.

A name that I think of often is that of Midwinter. He gave generously of his time and energy to further the cause of growing better fruits and vegetables in Manitoba. Enthusiasm was his middle name. His chief second endeavour was the Water District, where he worked tirelessly through organizations and fairs to instil greater admiration for growing better fruits and vegetables, and in much greater abundance.

It was my privilege last month to take a trip to Eastern Canada by car. I was greatly impressed by the amount of advertising along the roadside — an expensive undertaking. Last evening, I made mention of this to a friend of mine during Thanksgiving dinner. He volunteered the information that an unnamed person had just finished a contract for $300,000 for advertising, for which the friend got $45,000 as commission. I mention this as an example and I wonder how much time and energy these old-timers gave to the cause of horticulture merely for the love of it. Their hearts were in the work and we owe them a tremendous debt of gratitude which can be paid by us only through rendering similar service to the Manitoba public.

I should be very remiss in my endeavour were I to overlook making a brief but totally inadequate mention of the effective work done by public and semi-public institutions. Mr. A. P. Stevenson spent many winters on a special train,

put on free of charge by the respective railways, where lectures were delivered daily on practical horticulture. Agriculture in its many branches benefited in a similar way. On many occasions I was privileged to take a small part. Who among us can hope to evaluate the results of such work? The schools of Manitoba had their school clubs which, owing to holiday periods, had its drawbacks but on the whole did good work. The Provincial Government for many years set aside a day each year known as "Arbor Day," for tree planting, etc., when many schools were allowed to engage in such work. While not too religiously obeyed, it did its part and had good results.

Horticultural associations were established throughout the province in certain districts, such as Brandon, Portage la Prairie, Morden, Selkirk, etc., and each year a provincial gathering took place in Winnipeg, being an affiliation of all rural horticultural societies. It did an enormous amount of good and is still going strong.

Several of our newspapers ran competitions from time to time during the earlier years in various fields of horticulture and offered suitable awards for merit.

The Women's Institute of Manitoba in many areas took an active interest in the local cemetery and made of "God's Half Acre" a suitable resting place for those who no longer remained in their midst.

Commercial concerns either gave, or sold for very little, good seeds and thereby enabled our folks to become interested in and grow better varieties.

It is an endless story and not nearly through nor told. As long as man remains on earth there will be need for just such propaganda as has been in vogue for the last fifty years to my knowledge. It is interesting, fascinating, profitable and much needed work. It is a part of the way of life and cannot be left for another to do. The more one puts into horticulture the more one gets out of it. I cannot think of any of the men and women whom it has been my privilege to associate with who were not made of fine texture. Is this cause or effect? Are they made better as a result of association with the forces of nature or have they been improved by horticulture through their efforts? Whichever is true, the net results are superficially at least the same.

In order to fully appreciate what has been achieved in this field in our province let us try and imagine our province minus trees, fruit, vegetables and flowers. It is unthinkable. Surely the great Creator gave us this tractile world for a purpose. Is it not our duty and devout desire to leave this earth a little better than we found it at birth? In what field of endeavour can one hope to achieve as much improvement as in the field of horticulture? Is it not true that one of our

predominating weaknesses is lukewarm or, in too many cases, complete absence of appreciation. My thoughts seldom stray over my past without giving thought to my constantly unpaid debt to those who have tried so hard in their day to show me the way and leave it open for improvement. As long as life is accorded me I shall try and keep fresh in my mind the great and lasting contribution these men made to Manitoba horticulture and through it to life and living.

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WAIT — PLAN FIRST — THEN PLANT

Whether you are planting the grounds of a new home or improving the garden of an established home, start with a plan. Your garden can express you the same as oils on a canvas express the artist.

There are no rigid rules in garden planning but you'll get more satisfaction from your effort if you keep these points in mind when planning:

1. Don't cut up the lawn with flower beds. Flowers serve gardens better in a separate flower garden or in attractive beds bordering the lawn.
2. Plant tall-growing flowers to the back, middle-size flowers in the center, low-growing flowers in the front. Then you and your friends can enjoy them all.
3. Mass your colors in clumps for maximum color contrast.
4. Keep mature height and breadth of trees and shrubs in mind when you plant them so they will not interfere with buildings and walks later.
5. Grade away from your building to take care of excess moisture run-off. Usually one-eighth to one-quarter of an inch drop to the foot is ample.

Message from Provincial Horticulturist

F. J. WEIR

Provincial Horticulturist, Manitoba Dept. of Agriculture

Horticulturally, 1952 was a most interesting year in Manitoba. The rather unseasonable winter, with its scant snowfall led many of us to wonder what to expect in damage to perennial plant material. Added to this strange winter weather, were the mid-summer-like days of April, when most gardeners felt as if they should be trimming and watering lawns rather than starting to put in gardens. Perhaps it is this "unusualness" or unexpectedness which adds spice to life in Manitoba. At any rate, there is no reason for boredom, at least as far as gardening applies.

As far as activities are concerned, our year actually started off in good tempo with the annual MHA convention. Although the programme had to be curtailed because of the death of our late sovereign, very interesting sessions were held, which we hope, were helpful to commercial growers and home gardeners. We were indeed fortunate in having with us our good friend of Prairie Horticulture, Mr. A. R. Brown, "CBC's Prairie Gardener." Mr. Brown's presence and contribution added much to the interest of our programme.

Attendance at our conventions is increasing, a healthy sign. We had delegates from most of our Horticultural Societies, but it is difficult, and often impractical for representatives of the Horticultural Society at Flin Flon to come down for our sessions, much as we would like to have them present.

Membership in the local societies took a decided leap forward in 1951 over the previous year's figures, although part of this increase is due to incomplete figures for 1950, along with the organization of a new society at West Kildonan. Figures for 1951 give an over-all membership of 2,721 in 17 horticultural societies, which is 30% more than the 1949 membership. We are often asked why there are not more horticultural societies in the province. We could organize more, but we feel that when there is sufficient interest in horticultural activities in a community, the individuals themselves will provide the necessary spark. We do attempt to encourage any such spark and keep it burning.

We have a new society to welcome into our Association this year. The Pas Horticultural Society was organized in April, 1952, and from horticultural interest shown by individuals in that area, would say we expect great things from this, our newest member. Mr. Bill Brauneis is President and Mrs. B. Richards, Secretary. At this time we should also mention

that we have a horticultural committee functioning in Miami, along with the Agricultural Society there. The policy of having a horticultural committee where there is an Agricultural Society works quite well, in that both function as societies qualifying for the usual government grants.

Our Manitoba Horticultural Societies are doing a great job in stimulating interest in all forms of gardening. It is impossible here to list all the individual worthwhile projects sponsored by different societies, but a few of the highlights should be mentioned. Brandon Society, the oldest organized society in the province is unique in that it also has a Ladies' Auxiliary which has a separate programme, but joins with the men for different meetings. The Charleswood society had its annual show at the Veterans' Community Club House in 1952 and had a list of entries 80% greater than the previous year. Fort Garry reports an increased membership and an exceptionally fine show. Newdale Horticultural Society members were quite active, sponsoring various competitions, and seasonal flower shows, along with their annual show. An exhibitors' school was staged at Newdale, and from the interest shown by residents of the surrounding countryside the society is a going concern. Exhibitors' schools were also held at Brandon and Portage la Prairie and were well attended.

It is impossible to list all the interesting projects undertaken by societies, but mention should be made about one of the Winnipeg Horticultural Society's contributions to prairie horticulture. This is the annual "Flower Garden" year-book, which includes articles on all phases of gardening, and is made available to other societies at a price much below cost of printing. Individual requests to purchase copies of this publication have to be turned down each year, but any Manitoba Horticultural Society can get as many copies as desired at very reasonable rates. One of the projects of the St. James Horticultural Society was the landscaping of the grounds of the new collegiate. Such projects are most worthwhile in showing the public that the local society is making a contribution to the community as a whole, and in bringing the members of a society into a closer working unit.

This idea of a closer working unit was a prime consideration in one of our newly instituted MHA projects. For the past few years, the directors of the MHA have given some place in the annual convention programme to a discussion on the International Peace Garden. This year it was felt that something concrete should be done. Accordingly, it was decided to sponsor a planting project at the Garden itself. The planting is to consist of trees and shrubs from the recommended variety list published annually. These plantings will be named so that visitors to the Garden will be able

to see the shrubs recommended and to study their growth characteristics. Financial assistance is being given by the Horticultural Societies, most of which have already made a contribution.

Another project underway is an attempt to make the prize lists of our local Horticultural Shows a little more uniform. Frequent criticisms are heard from both judges and exhibitors about the ambiguity found in prize lists, with particular reference to flower classes. What we have in mind is to make up a master list of all flowers from the individual lists, giving correct terminology. Copies of this will then be made available, and all Horticultural Societies will be asked to select the classes from the master list, but to use exactly the same wording. This should eliminate most, if not all, of the questionable points.

This past year, an earnest attempt was made to stimulate a wider interest in our Farm Home Grounds Competition. Actually there are two competitions, one for farmsteads on farms up to one-quarter section in size, and the other for farmsteads on farms over one-quarter section. Entries received were winners in local competitions, competitions sponsored by the Horticultural Societies, Agricultural Societies, Women's Institutes, Chambers of Commerce, etc. Results were indeed gratifying. The two winning farmsteads were those of Mr. and Mrs. Jake U. Klassen, Steinbach, up to 160 acres, and Mr. and Mrs. George Muir, Roland, with the latter the grand championship. However, many fine farmsteads were visited at Manitou, Hamiota, Decker, Newdale, Dauphin, Dugald, Oakbank and Ochre River. We were very fortunate in having as one of our judges, Mr. A. R. Brown, Prairie Gardener. Professor Brodrick gave very valuable assistance, and also Prof. Andersen of the University of Manitoba. Without their kind assistance, and co-operation, the project would have been impossible. Trophies and certificates will be presented to the winning farmers, as well as to the winners of the provincial urban competition.

Our Provincial Fruit Show, held at Dauphin, was again a fine success. Although entries were not as many as in 1951, yet the province was represented to a greater extent. This expanding interest is a healthy sign. It means that unless the fruit crop is a failure over most of the province, there should still be sufficient fruit for a show. The 1953 Fruit Show will be held at Portage la Prairie.

And now, on behalf of the Directors of your Manitoba Horticultural Association, I would like to thank each society for the kind co-operation in the past year, and to wish for each society and each member, a new year of 1953 full of horticultural benefits.

Manitoba Horticultural Societies—1952

BRANDON	A. G. Warr, 141-21st St., Brandon
CHARLESWOOD	J. G. Patterson, 66 Harstone Rd., Charleswood
DAUPHIN	Mrs. Fred Robson, Dauphin
FLIN FLON	Dr. B. A. Biggs, Flin Flon
FORT GARRY	Jas. H. Plewes, 661 Riverwood Ave., Fort Garry
HARTNEY	Mrs. J. A. Fry, Hartney
MANITOU	Mrs. E. A. Stepler, Manitou
MORDEN	Robert Milne, Morden
NEWDALE	Dr. P. N. Murray, Newdale
PINE FALLS	F. J. Harrison, Pine Falls
POPLAR POINT	Mrs. H. J. England, Marquette
PORTAGE LA PRAIRIE	M. A. Myren, 15-20th St. N.W., Portage la Prairie
RUSSELL	E. W. Robertson, Russell
STEINBACH	Mrs. Ruth Whetter, Steinbach
ST. VITAL AGRIC. SOCIETY	R. C. McClay, 45 Kingston Row, St. Vital
ST. JAMES	Mrs. H. J. Sewell, 102 Garden Rd., St. James
WEST KILDONAN	Mrs. J. Slipetz, 417 Scotia St., W. Kildonan
WINNIPEG	R. W. Brown, 675 Valour Rd., Winnipeg
THE PAS	Mrs. J. Harwood, The Pas
MIAMI HORT. COMMITTEE	Mrs. Blanche Sprott, Miami

Starting Plants Indoors

H. H. MARSHALL
Dominion Experimental Farm, Brandon

An important phase of gardening in our climate is starting certain vegetables and flowers inside, in order that they may take full advantage of the excellent growing conditions which prevail for a short time during the summer. Many such plants are frost tender species which require a longer summer than ours in which to mature, but others are cool season plants which grow better before the heat of mid-summer. Much of the success of growing either type of plant depends on starting healthy plants at the right time.

Green plants require water, food, air, light, and a suitable temperature in which to grow. Different species vary in their requirements in regard to all of these essentials, but most of those in which we are presently interested have needs which are easily satisfied.

A temperature between 50-60 degrees Fahrenheit at night, and, if possible, not over 80 during the day is suitable for most of the garden plants. Such a temperature may be maintained in windows, but better in greenhouses, hotbeds, or in late spring in cold frames. Hot beds may be heated by decaying manure or possibly more conveniently by a special type of lead covered electric cable manufactured for this purpose. Greenhouses, hotbeds, and cold frames must all be ventilated on sunny days, even as early as March to prevent tempera tures from rising too high. Sashes should be opened on the side away from the wind so that draughts may be reduced as much as possible. This heat, if properly conserved in the late afternoon, will carry, even a cold frame, safely through many degrees of frost.

Oxygen is not likely to be lacking in normal soil unless excluded by the presence of excessive water. In heavy soil, however, the absence of air is more likely to occur. The exclusion of air will change some of the essential plant foods to forms that are not available, or that may even be poisonous. Nitrogen may be removed by water moving through the soil, particularly if little organic matter is present. Growth will suffer if any necessary element is deficient, especially after the food stored in the seed has been exhausted. This suggests that young plants should be grown in a porous soil, well supplied with plant food and organic matter, with adequate drainage and sufficient, but not excessive, quantities of water.

In most cases seeds contain a considerable amount of food and may be grown in a sterile medium for a few days. Air is particularly important in crowded seed pans or flats, so fertility may be sacrificed to provide a well aeriated med-

ium for starting seeds. A good mixture should contain half loam and one quarter each of sand and peat, but may be varied according to the nature of the loam used. This mixture should break readily from the roots without inflicting damage and should be screened to remove large lumps and stones. One-quarter inch mesh screen is satisfactory for most seeds. Vermiculite has also been recommended for use at this stage of plant growth, either alone or in mixtures. The pot or flat should be watered thoroughly before sowing the seed and then may not need water for several days.

Damping off is frequently troublesome in seed pans. This may be largely controlled by treating the seed with any one of the many mercurial seed treatments now available. Seeds should not be sown too thickly as crowded and weak plants more often become diseased. Most seed should be covered lightly with soil, or if they are very small, merely scattered on the surface. Seed pans should be covered with glass and paper to reduce drying. The paper will prevent the sun from raising the temperature under the glass to a dangerous degree. Keep temperature between 50 and 70 degrees for most garden seeds.

When seeds are planted thickly in rather infertile soil, pricking off should be done as soon as plants are large enough to handle, which with most plants is within a few days after they emerge. Some of the smaller seeded species are difficult to handle until they have made some growth. If sufficient space is available they may be spaced widely and not transplanted again until they are planted in the garden.

The soil into which the plants are moved from the pan should be rich and open enough to prevent it becoming saturated with water. Boxes should be constructed to permit the escape of surplus water. This is the stage at which window space usually becomes inadequate both as to area and the quantity of light available. Full sun for the entire day is not too much for all types of garden plants, and will encourage more rugged growth than the relatively small amount of light they would receive in a window.

The rapidly growing young plants require considerable plant food and deficiencies of any one of several will delay growth. Nitrogen is frequently lacking, but may be readily supplied by the use of ammonium sulphate or other nitrogenous fertilizer. Ammonium sulphate may be dissolved at the rate of a tablespoonful to two gallons of water and used in watering the plants once in two weeks as required.

The final stage of plant growing is hardening off or preparing them to survive the shock of transplanting with the least possible injury. They should be exposed as nearly as possible to the conditions that they will be subjected to after

they are transplanted. Cold frames are excellent for this purpose as they may be left with the glass off when weather conditions are not unfavorable. Light, temperature, and wind conditions will be similar to those the plants must endure after they are transplanted. High night temperatures and overcrowding should be avoided as both tend to produce soft spindly plants, which will be easily damaged when they are planted. They should be watered thoroughly with a weak solution of a complete fertilizer twelve hours before they are to be planted in the open. This will ensure that the plants are filled with water and contain enough plant food to carry them over until part of the damage, resulting from being cut from the flat, has been repaired.

Planting out time varies with different kinds of plants. Pansies, snapdragons, cabbage, and onions will all survive some frost and thrive in cool growing conditions. They may be planted out before all danger of frost is past. Others such as marigolds, zinnias, tomatoes, and peppers will be damaged by light frosts or even by prolonged above-freezing temperatures, and therefore should not be transplanted until most danger of frost is past, which is early in June for most of Manitoba.

The best plants for bedding are those with short, thick stems and for most species, just beginning to show buds. Plants in full bloom as they are usually sold, have lost some of their youthful vigor and become established more slowly after transplanting. These make less growth and produce less bloom or fruit than younger plants.

Seeding on different dates is necessary because of the different lengths of time required by various species to germinate and grow to the desired size.

The following is a list of the dates on which many of the more common species have been sown to produce satisfactory plants in the greenhouse at the Experimental Farm at Brandon. As conditions vary with each grower and his equipment, it is suggested that this list be used as a general guide and that notes be made if any species might have been better seeded either earlier or later.

MARCH 14—
Lobelia Pansy
Delphinium

APRIL 5 —
Eggplant Onion
Pepper Celery
Antirrhinum

APRIL 12 —
Phlox Ageratum
Verbena Nicotiana
Petunia Salvia

APRIL 19 —
Tomatoes Cabbage
Cauliflower
Dianthus

APRIL 26 —
Alyssum Aster
Dwarf Dahlia
Coreopsis Stocks

MAY 3 —
Zinnia
Marigold

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How to Care for House Plants

G. S. REYCRAFT

There is a place in every home for some house plants. During the long dreary winter days growing plants with their green foliage and colorful blooms will cheer and brighten the home. Most house plants are inexpensive to buy and easy to grow.

But please bear in mind that a house may be a comfortable place to live in and raise children but for the average house plant conditions are only fair. So much so that it is the exception for one to see a house which contains well grown plants. Now don't get the idea that you can't grow good specimen house plants in your home. This is far from the truth but I do want to emphasize and point out to you that you just cannot buy a plant and neglect watering and feeding it except when you like or when you remember. You must give it the kind of care it needs. You must make some attempt to provide the conditions under which it will grow best.

The various cacti are perhaps the easiest of all house plants to grow, yet, even they are often ruined because Mrs. Housewife just cannot resist the temptation to water them at least once a week and even more often, when they really should be watered about once a month for part of the year and not at all during their rest period.

What is the basic need of house plants? In order to make growth and maintain health a plant needs light, moisture, food and air.

Light: All plants require a fully light position. By that I mean full light not full sunshine. Why do we need light? Well, unless we have light the leaves cannot manufacture their green coloring matter chlorophyll, take carbon and oxygen from the air and plant nutrients from the soil and turn it into food which the plant can use.

There are plants that will grow well without being in the direct sunshine. House plants like the African Violet, the Wax Begonia and the Patience Plant. On the other hand, a plant like the geranium will be almost certain not to bloom unless it has a maximum amount of sunshine. That is also true of the cactus that fails to flower for you, that is, of course, if it is the flowering kind — although too much water will do the same thing.

Humidity: The great enemy of house plants in your home is lack of humidity or moisture in the air. Our modern homes are inclined to be too hot and too dry. Outdoors the relative humidity is always much higher than in the house.

How do you increase the humidity in the house, you say? I'd like to make it clear, first of all, that you cannot just do it by watering your plant often. The ideal but most expensive way is to buy a modern humidifier. In a hot air furnace you can keep the water pan filled. This may be a twice a day operation, not twice a week. Also a bucket of pan of water in your hot air register or behind your radiators. An electric kettle steaming away for a few minutes each day in the rooms you keep your house plants will help. You will be surprised at the increase in humidity that you can obtain by this method.

There is another good way to increase the humidity of the air for your house plants. I recommend that you pick up one of the galvanized zinc or iron trays which are on the market. They are about three feet long and three inches deep. Once you have one in place in your window put a layer of pebbles or small stones in the bottom of the pan. Say about two inches deep. Set your house plants on top of this. Then add water to a depth of one inch. This will serve as a means of constantly moistening the air which circulates around the plants, as well as take care of the excess water which may run from the plants.

You can help the humidity and keep your plants in better health if you give them a daily syringing with a syringe or atomizer which you can usually pick up at your nearest drug-store or seedhouse. This daily syringing or spraying, however, cannot be done indiscriminately to all plants. For instance, the hairy-leaved plants such as the African Violet, the Gloxinia and the Rex Begonia will be more often harmed than benefited by syringing. On the other hand, plants like the various ivies, sansiverias, philedendrons, rubber plants, palms and others will benefit by such a procedure. As a matter of fact, washing the foliage with a soft cloth will do no harm and will make the leaves glossier and better looking while also helping to keep your house plants free from insects.

Potting Soil, Food, Water: For most house plants a good potting soil is essential. An ideal potting soil consists of 3 parts loam, 1 part sand, 1 part leaf mould or other type of compost. Also mix thoroughly a small amount of Complete Plant Food along with the soil in accordance with directions supplied. Systematic feeding of most house plants is also beneficial. Be sure pots have good drainage. To insure this, put a layer of broken pottery or coarse gravel in the bottom of the pots. Do not water too often, but when you do, see that the entire earth ball of the plant receives moisture. Water is required both for itself and to supply the plant nutrients contained in the soil in a soluble form available to the plant.

Air: Fresh air is also essential to the good growth of house plants not only above ground but below. Roots need plenty

of fresh air if they are to stay healthy. You have made an important step in supplying fresh air when you used a good potting soil. It is also a good practice to use an old kitchen fork and give the soil in your pots a good weekly stirring.

Make sure to air your house every day but keep your plants out of drafts. It is best, particularly if the weather is cold, to admit fresh air indirectly through a window or door in an adjoining room.

So folks, here's to better houseplants. Try to keep the temperature of the house fairly constant. Plants normally prefer a temperature ranging from 60 degrees F at night, to 70 degrees F in the daytime. Also a little discreet pinching or pruning once in a while tends to give you a more attractive bushy house plant.

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Garden Tips

Cut flowers will last longer if a small coil of copper wire is placed in the vase. According to tests conducted some years ago at Ohio State University, the copper has a definite effect in lengthening the life of cut flowers.

It may surprise you to know that evergreens require moisture during the winter months. Before freeze up comes along they should be given a good soaking. Late October, early November is the best time to do this. You can help hold this moisture in the soil by applying a mulch of peat moss if you did not do so at time of planting.

Feeding Established Plants

Feeding established plants with plant food is very necessary, it is also very easy to overdo it. A plant that is sick is more likely to be suffering from too much heat, low humidity, overwatering or from insect pest and diseases rather than starving from a lack of plant food. As a matter of fact, a sick plant should not be given plant food. It is in no condition to absorb plant food.

Most home gardeners generally do not feed their plants at all or they feed them too much. Plant food should be fed strictly according to the manufacturer's directions. Do not assume, whatever you do, that because a little plant food will be good for the plant a lot will be better. You know what happens when we eat too much, we become sick, a plant is exactly the same. Remember too, that the fall is the resting time for a good many plants. Do not attempt to feed any plant during its rest period.

It may also be opportune at this time to point out that tea leaves and coffee grounds have no fertilizer values, in fact it has never been proven by anyone that they have any value in raising plants. Neither do such things as soaps, oils, epsom salts and aspirins have any value or use. In fact some will do a lot of harm.

When do you feed a house plant complete plant food? If a plant is at a standstill when according to the nature of the plant and the time of year it should be growing, when its buds are not developing or its leaves are a poor colour, then it definitely needs extra feeding. It's a good plan to remember another basic rule about feeding a plant. Generally speaking, flowering plants need more plant food than the foliage ones at least up until the flower buds show colour.

Clematis Jackmanii

G. S. REYCRAFT

Vine — Large Dark Purple Blooms
Semi-Hardy — but Worth a Try

It is the only large flowering Clematis that will grow in Manitoba. Introduced by Jackman, an English nurseryman in 1868, it still is the most popular Clematis that is grown today.

The Clematis Jackmanii is a vine that makes a gorgeous display. If you give it the soil and situation it likes, it will bloom profusely from July to late Fall—a mass of large 3 to 4-inch dark purple blooms.

Admittedly, it is not entirely hardy but if you lay the vine down on the ground each fall and cover with a little earth and a mulch of leaves, it will often survive our Manitoba winter. It will probably kill back but that will not hamper it in sending out new shoots for another summer of gorgeous bloom.

The Clematis Jackmanii is becoming increasingly popular around Winnipeg. You have probably seen them. You couldn't miss noticing their riot of deep purple bloom.

However, before you invest in one or more of these plants, it would be well to know something about the particular requirements of this lovely vine.

The Clematis requires quite a bit of room for it makes a great mass of thick spreading roots which must absorb a great deal of moisture and food to produce the foliage and flowers of a well grown Clematis. It should be planted in ground that is deeply dug, well cultivated, drained and containing a good supply of humus and plant food. Do not dig a hole the size of a bucket in any kind of soil and expect your Clematis to bloom. Dig the soil for a good distance around your planting area but when you do set in your plant do not plant it too deep. This is an important point to remember. The roots will tend to suffocate and soon die and the plant will be forced to make an entirely new root structure at the correct level.

Plants are usually grown in pots at the nursery so that when you get your plants you will probably find the roots fairly compacted. The correct procedure is to wash the soil away and carefully untangle the roots and spread them out in a wide hole and cover carefully with fresh topsoil. Make sure the soil is open and friable so that the roots can easily travel through the ground. Good drainage is also essential.

It is well to work your soil up with some sand and well rotted manure before planting. Work in some complete plant food as well for the Clematis is a heavy feeder.

The Clematis likes a soil that is slightly alkaline as are many of our Manitoba soils. We, accordingly, should have little trouble in this regard.

When choosing a site in which to plant, care should be taken to avoid any planting position where water can drip around the plant in late fall. Much of the damage from winter-killing is caused by the plants and roots being unnaturally wet when the hard frost first occurs.

Finally, the upper parts of the Clematis like full sunshine but the main stem and lower parts of the plants will suffer from sunburn. It is accordingly good practice to plant some perrenial or low bush in front to protect it, particularly if it is planted close to a wall.

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A Master-Mix for House Plants

It might surprise you to know that one of the big troubles the average indoor gardener has in raising good and healthy house plants is the use of unsuitable soil. Soils usually taken from your garden or field are seldom suitable for use with house plants.

A good "master-mix" which, with some variations for specific plants, will do for practically all the plants you grow is as follows:— three parts good loam — the kind that comes from a sod heap, one part well rotted barnyard manure, peat moss, or material from the home compost heap and one part coarse sand. To this add a small amount of complete plant food in accordance with manufacturer's directions.

Why a sod heap? Because this is the way the nurseryman or the professional flower grower gets his loam. It will pay you to imitate him. The sods should be placed in a compact pile, grass side down and well soaked with water. It will usually take about twelve months for the sod to crumble down but you can use it after six months. When you chop the sod heap down put it through a screen. Do not discard any more of the fibrous roots than necessary. They will help keep the soil friable.

However, if garden soil is used as the basis of your "master-mix," normally the best place to take this soil is from your potato patch, the soil of which is usually in a better condition. However, with this base it would be well to slightly increase the percentage of well rotted manure or peat in the mixture compared with the sod base.

How Can I Tell If My Plants Need Repotting

Well, first of all, if your plants are unhealthy looking, if the leaves are turning yellow and dropping off, if plants that should flower have failed to flower, if, when you water the water runs right through the soil, then it is high time your plants were repotted. If you have not the ingredients of a "master-mix," then get the soil you need from your florist, seedsman or other type of store and repot.

Another good way of telling whether or not your plants need repotting is to gently knock the pot from the plant. This is easily and safely done by placing the stem of the plant between two fingers and turning it upside down, then gently tap the edge of the pot on the edge of a table or potting bench. You will find that when a plant has outgrown the pot, a fine but thick network of roots will be seen around the outside of the earth ball. This means that the plant not only needs repotting with fresh soil, but also needs putting in the next size container. In some cases though, you can gently wash the wornout soil from the roots and repot the plant in the same size pot. The best time to repot a houseplant is in the spring. Repotting any plant is quite a shock to the plant and by doing this repotting in late April or early May you get a chance to offset this shock by placing your plants outdoors in ideal conditions for the summer months. But on the other hand, if your plants are sickly and are not flowering, do not hesitate to repot now. The shock to the growing system of the plant will not be nearly as hard on it as leaving the plant to fend for itself in worn out soil.

Thaws and the Early Spring Sun are the Cause of Much Winter Damage to Plants

Because so many gardeners believe that cold weather is the only culprit that robs them of many cherished plants, mulches are often applied too early. The ground should be frozen hard. Then, by applying a light covering over the frozen ground you can prevent surface thawing so often accompanied by frost heaving that uproots plants and bulbs. Even if established plantings of peonies, iris, delphinium and the like will normally survive our western winters with little cover, a mulch is still good insurance, particularly if there is not good snow coverage.

Also, mulches on early frozen ground retard the heavy freezing of the subsoil while awaiting the protective coverage of the first heavy snowfall, for it is still true that low temperatures can kill many of our plants. There seems to be a critical temperature for each plant when the degree of injury will be so serious that the plant is killed. That is one reason a mulch and good snow coverage is so important in the west. Even this protection is not sufficient to allow certain tender plants such as garden roses to always survive in our climate.

It is recommended that garden roses be protected by soil piled high about them, then a mulch of straw or leaves and good snow coverage. Even then they don't always survive. However, there is always some satisfaction even in partial success.

Also, our hot February-March sun does much damage to fruit trees and many of our flowering shrubs by thawing out the sap in the trunk or branches causing alternate thawing and freezing. This cracks the bark, causing the tree or limbs to dry out and die. It is well to protect those trees or shrubs that are exposed to the direct rays of this early spring sun with sacking or other cover.

Beauty, Truth and Goodness in Gardening

PROF. A. R. CRAGG, United College, Winnipeg

Ancient Greece gave the world the first important contributions to the theories underlying Beauty, Truth and Goodness. Socrates, 469 B.C., regarded the Beautiful as coincident with the Good and both resolvable into the Useful. Plato, 427 B.C., identified the Beautiful with the Good and True. This whole subject of Beauty, Truth and Goodness is well treated in twenty-three columns, seven words to the column, in the reliable 11th edition of the Encyclopaedia Britannica. It suggested this topic to me.

Beauty has three factors of aesthetic experience: the sensuous, the perceptual and the imaginative. The **sensuous** pertains to our senses of sight, hearing, touch, taste and smell. Plato and Hegel claimed a mass of color, for example, owes its value to the principle of unity. Unity includes in this case color, touch and smell. The **perceptual** is the interpretation of relations within the garden plots of the various flowers and vegetables. This depends upon what experiences we have had and what meaning we get out of them. It explains why we like our choices better than others' choices of plants and it also aids in our judgment of other's preferences. The **imaginative** helps us to plan ahead what we intend to sow and to look back after we have reaped. For example, if you live in the city and see some daisies, you recall the daisies of your own gardens back home, or in the fields of your neighbors, or by the roadsides. Remember that Beauty is all three: sensuous, perceptual, imaginative.

Truth may be defined as the expression of a speaker's thought in proper conformity with the thing the true thought represents as it really is, to you and others. Do not be too critical of others who misrepresent what they see, hear, touch, taste and smell. To tell the truth, the whole truth and nothing but the truth even about flowers and vegetables is not easy. To represent anything truthfully, one must have: (check on these)

1. Organs of knowledge trained to the best of one's ability;
2. Facts about the nature and origin of knowledge you possess;
3. Scepticism, the right to doubt, but not fettered by notions;

4. Modern "truth" such as will, feeling, action well balanced;
5. The simple idea given above: conformity to things as they are.

Goodness, according to the Stoics, is always identified with Beauty. The modern philosopher Herbart definitely related ethics (goodness) to aesthetics (beauty). Kant went so far as to say that a man on a desert island, alone, would adorn neither his own hut nor his own person. John Ruskin in Modern Painters, thought beauty to be spiritual and typical of divine goodness. How can any gardener loving beauty and telling the truth ever be anything but good.

Beauty in Practical Application

Baron von Friedrich Humboldt, 1769-1859, a naturalist of fame, student of botany and geology in Germany, South America, Italy and Central Asia, publisher of great scientific works, was once deeply moved: He found a flower on the edge of the Venetian crater. Dust had settled in the hollow of the lava ashes. When the rain fell there, a cupful of rich soil was ready for a seed brought by a stray bird. From it grew a beautiful flower. No wonder the great scientist was touched by beauty in such a place. We are not scientists, nor are we situated in such forsaken spots as volcanoes. I could wish and hope that our sense of beauty may be awakened. To that end, here are three practical suggestions:

1. I have been around Toronto, Chicago, New York, Minneapolis, Des Moines, Evanston, Ottawa, Montreal, Quebec, Calgary, Regina and Saskatoon. In my opinion, Winnipeg with its flowers and vegetables is as beautiful as any of these cities. I ask, 'After you appreciate the very early growth in Victoria and Vancouver, is not Winnipeg as gorgeous in mid-June, July, August and certainly in mid-September in its beauty?' Then why not maintain it and increase it greatly in every nook and corner wherever possible?

2. One street very well known to me in Winnipeg has a corner on Portage avenue very dirty all through the spring, summer and fall. Everyone complains about it but few do anything about it. One old gentleman and I tried a three-year experiment, mostly with potatoes but also with mixed vegetables and many flowers. Every corner is in a mess. Why not make an effort to get rid of corner rubbish and possibly cultivate the land for beauty? If you do not dare to do it by day, choose a moonlit night and use your sickle or scythe.

3. For many years now, at United College, Winnipeg, I have, with help, planted four V-shaped petunia rows. I am a great believer in old-fashioned flowers. Hundreds of people

pass on those walks every planting time in June and throughout the summer well up to October. I get the best advice in the world, so much so that I must be the best petunia grower in the city. Thrice have I yielded to seemingly good advice and made a mess of the rows. Once I planted big floppy whites; another time in a variegated series and third time in the American double. Rose Queen, with a small white, and purple, and a red, make by far the best showing. These are not fancy, expensive or difficult to grow. So it is with most flowers, especially for beginners, until you get used to other choices.

Truth in Practical Application

After the First War, it was the hope of many people and leaders that Education would be the solution of permanent peace. They held a conference in our old Board of Trade Building. Lloyd George, among others, was there. Our own Dr. Crummy made a speech on a topic which aroused a Jew to say, 'Dr. Crummy, if all of us would practice honesty for a year, all our problems would be well on the way to solution.' If the Russians cannot be trusted, as Litvinov says, there is nothing left on which to build. A man's word is as good as his bond or there is not much of a man. Here are three suggestions on truth in gardening:

1. Once upon a time, a couple of us visited a noted pansy grower in this city. We asked the secret of his success. All of us should know how to grow such gorgeous colourings in massive proportions. They are among the most satisfying of all flowers. "I just did this or that; there is no secret; probably green fingers," said he. We bought some; he went inside to get paper and string; we poked our fingers, hand, and finally half an arm into rich soil feet deep. That was and is the secret, plus moisture and not too much sun. Why did he not tell the truth? Scientists pool their findings. So should we, gardeners.

2. Every year, we are flushed with hopes that the Michigan bulbs, particularly gladioli, are the very best of guaranteed size, of money back if not satisfied. Amateurs like me send for some and send them back. You can get honest bulbs in Winnipeg. My first year in dahlias was a grower's luck. I had a Giant Purple and a Monmouth Champion. Then I lost all in that hot year, even the bulbs of next year. I have had no luck since. I have bought, begged, borrowed dahlias, but something goes wrong. It went wrong occasionally at the source of supply before I got them. I am not asking for guarantees. Surely one can expect just ordinary honesty. Dahlias are not hard to grow, so I am told. Why not share the simple secret at a price?

3. Thrip or not thrip! Is there no way to be assured? It is sheer defeat to find bulbs not treated. If the bulbs have

been protected with flakes during the winter, it would be the best plan to tell rivals and novices that a simple solution of effective poison should be used in certain proportions and for the proper intervals.

Goodness in Practical Application

For nine years the Prairie Gardener has been pleading with us for the spirit of good gardening and how gardening helps to build better communities, which means building better citizens and better families. He says gardening folk have always been the salt of the earth and the backbone of a solid and enduring citizenship. The Sunday morning 10:15 broadcaster continues, "The real test of the essential value of any occupation must, in the final analysis, be made by determining how it contributes to the uplift of the human spirit and how it enriches the lives of all those who come within the circle of its influence. The material values of gardening, valuable and important as they are, must be supported and strengthened by spiritual values. Here are three practical ways:

1. At great length the Prairie Gardener explains this spiritual value. For brevity's sake, this first point will cover a listing of his suggestions:
   a. Gardening has a universal appeal, open to all kinds of folk.
   b. There is no restricted society or closed monopoly.
   c. So all gardeners have a common basis of thought and feeling.
   d. The garden is a friendly place for neighbors and friends.
   e. Gardening is creative, uplifting, valuable, within our grasp.
   f. Man, by gardening, is master of his environment, and not a slave.
   g. On his knees, man can communicate with his Maker.
   h. Pioneer gardeners contributed much to our prairies.
   i. God, nature and man can work together; not one of them alone; a combination that is needed in our national affairs.

2. Some years ago, a man taught a Sunday School class of boys in a city not far away. He taught them well. But flowers were introduced to him and thereafter he was not at the Boy job. What an opportunity he lost of teaching the great truths of life in a direct way. Beauty, Truth and Goodness! Goodness, for example, in the realm of sex can probably best be taught through flowers and animals. It is less embarrassing, more objective with quicker results and an opportunity to

teach processes. Why miss this? He is no magical figure walking across the Stage of Time, about 30 A.D., who taught His greatest lessons through the birds of the air, the beasts of field and the flowers of the wayside. His method is so practical; the content is so easy to obtain.

3. The people of the world, two-thirds of them are hungry for food. If you read history, you will find these same people are hungry for Beauty, Truth and Goodness. The D.P.'s have lost all they ever had. We have all and it's a lot. Do we or do we not share? It is a World Brotherhood gardeners have a chance to build.

How to Turn Dirt into Soil

What is soil?

Here's a simple definition. "Soil is any medium that will support plant growth," while "dirt" is **any** useless grimy material."

Now, what percentage of our yards have "soil" in them and what percentage contain only "dirt?"

In too many residential areas, the original topsoil was scraped off and sold, or else mixed with the underlying infertile material when the lot was graded. As a result many would-be gardeners are confronted with nothing but "dirt" on which they must attempt to grow lawns and gardens. It's an extraordinary sand or clay fill that will support a garden worthy of the name. Low in plant nutrients, devoid of organic matter and possessing a texture that is either too heavy or too light, the raw subsoil is a dirt — and that is about all.

But making good garden soil out of plain old dirt can be done — though it requires both time and labor. But when your garden blooms and the grass grows vigorously you can think back to the days when the yard was a barren wasteland and rejoice!

The least laborious, but most expensive way to get soil is to buy it. However, the prices charged for hauling-in top-soil are discouraging to the new home owner, who usually has plenty of other costs to worry about. And unscrupulous individuals in the top-soil business have foisted off some very poor "soil" on uninitiated home owners — and charged them $8 to $10 per cubic yard.

If the subsoil fill in the yard is sandy, the main problem will be to build up the organic matter in it in order to increase its water holding capacity. Low moisture retention is the big disadvantage of sandy soil and since it is impossible to mix cloddy clay with sand, the best practice is to work in all the compost, peat moss, or manure you can. The organic matter should be thickly applied wherever the flower beds will be located, since lawn areas build their own organic matter if they are well fed.

Clay presents a different problem — one of opening it up, decreasing the cloddiness and increasing granulation so that roots can penetrate and water will drain out. Incorporating enough organic matter to accomplish this is a practical impossibility, except in small areas such as flower beds. It is far more practical to "cut" the clay with sand. This is best accomplished by spading, disking, or roto-tilling into the top 6 inches of soil a layer of sand **not less than three inches thick.** In fact, a little sand is worse than none at all. Incorporation

of any smaller amount will be wasted effort. If, at the same time, some peat, compost or other organic matter can be included, so much the better.

But in improving the physical condition of subsoil materials we have done little to improve the fertility. True, organic matter provides a small amount of nutrients, but the sand is a "blank" as far as its nutrient content is concerned. So the final step in making "soil" out of mere "dirt" is to provide nutrients. Give the entire yard a good thorough application of a complete plant food, in accordance with manufacturer's instructions. You can broadcast the plant food over the surface prior to working in the organic matter and sand.

In years to come it will be necessary to maintain soil just as good as farmers manage theirs. The use of compost spaded into the flower beds and vegetable patch and regular feeding of lawn and garden are all part of good management practices that will keep the new made soil from becoming "dirt."

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Grow Vinca Major The Year Round

Most garden plants fail miserably when you try to make them double as house plants. The short day-length in the winter as well as the intensity of light they receive — even in a south window — is not enough for them. Though annual plants may put out vegetative growth to the point of becoming extremely spindly, they just will not bloom under reduced light. Even geraniums are seldom satisfactory. However, their common companion foliage plant in porch and window boxes, vinca major, will thrive in a sunny window. This plant, with the long stems and oppositely placed variegated green and white leaves, can be potted before freezing weather comes, pruned back and transferred to an indoor environment with surprising success.

Lift the plant, keeping soil on the roots. Place it in a 4-inch pot together with some good potting soil and a half teaspoonful of Vigoro. Growth will soon begin from the buds on the cutback stems, and in a matter of a few weeks you will have a window full of attractive foliage. A good way to grow it is to hang it in a container suspended from a bracket attached to the window frame so that the stems can trail normally and not fall beneath the level of the window sill away from daylight.

If set on a window sill, the plant can be trained on a wire coat-hanger stuck into the pot in an inverted position and shaped into a circular form. Thus placed, it presents a pleasing contrast to blooming wax begonias and African violets.

TCA - - - A Promising Grass Killer

DR. F. J. GREANEY

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The year 1944 will undoubtedly establish itself as an important milestone in the long history of man's struggle against the most costly enemy of agriculture — weeds. In that year, the "miracle" chemicals — the new systemic, hormone herbicides or weed killers — were introduced. The best known of these selective herbicides are, of course, the compounds of 2,4-D.

Following the advent of 2,4-D, the interests and activities of weed research workers were devoted almost exclusively to the testing of synthetic hormone herbicides for the selective control of broad-leaved annual and perennial weeds. In this work it was found that the annual and perennial grass weeds are remarkably tolerant to 2,4-D, and related materials. Furthermore, extensive field investigations indicated that the consistent use of 2,4-D increased the infestation of these tolerant grass weeds over large areas of agricultural land. In recent years, therefore, an intensive search has been made for grass-killing herbicides, and the efforts of weed investigators have been focused on the development of techniques and methods for their practical use. These efforts have been quite successful. Several new grass-killing herbicides have appeared during the past few years, and some of them have already become fairly well established commercially.

One of the most promising of the new grass-killing chemicals which has come into wide use in recent years is the material known commercially as TCA, an abbreviation of its full name trichloroacetic acid. Because of the caustic nature of this acid, the sodium salt of TCA, which is easily handled and equally as effective, is receiving more attention than any other new grass-killing chemical. It is now generally established that TCA, if properly used, will effectively control, and in some cases completely eliminate Couch (Quack) Grass and certain other perennial and annual grass weeds. TCA is proving useful for two kinds of jobs. First it is effective as a localized (spot) treatment to kill grass on valuable crop land. The second kind of job for which TCA is promising is grass growth control with small dosages. When timed properly, amounts of TCA far less than are required for killing will often retard the growth of grass for a considerable period.

This brief article deals only with the use of TCA for the control of Couch Grass.

How it Kills. TCA acts principally through the root system and hence application directly to the soil, undisturbed or cultivated, has given best results. It is now generally agreed that TCA is most effective on couch grass when applied to the soil so as to come in contact with the underground roots and rhizomes. Investigations to date indicate that, when applied to the soil, TCA is leached downward to various depths. It seems to be broken down by certain biological and chemical processes in the upper soil layers, or to be concentrated at residual toxic levels in the soil below. Its efficiency as a herbicide, therefore, is affected by the above factors and by soil and weather conditions in much the same way as is sodium chlorate. Soil moisture seems to be particularly important in the effective use of TCA. Unlike sodium chlorate, which has been fairly widely used for killing patches of couch grass on crop land, normally TCA has no long-time sterilizing effect on the soil.

When applied to the underground roots and rhizomes of couch grass, TCA induces a profound dormancy of the growth buds at the nodes. Many investigators believe that the extent of this dormancy determines the efficiency of the application of TCA in controlling, or eliminating, couch grass and other perennial grass species. It is important to point out that this type of herbicidal action requires relatively large quantities of TCA per unit area in comparison with the rate of application of 2,4-D. It has also been fairly clearly established that TCA has not the range of selectivity between weeds and crop plants, or between broad-leaved and grass weeds that is found for the hormone herbicide 2,4-D. Furthermore, the plant toxic action of TCA is unlike the hormone type of growth response.

Rates of Application. The most efficient rates of application of TCA in the control of couch grass have not yet been clearly established. Nevertheless, recent investigations have indicated that TCA applied as a spray at from 80 to 100 pounds acid per acre gives effective control under most conditions. Under ideal conditions of application, rates below 80 pounds per acre of TCA can be used effectively for spot treatment in established stands of couch grass. Furthermore, the advantage of combining one or more cultivations with an application of TCA has been clearly established. When combined with tillage, an application of 40 to 50 pounds of TCA acid per acre has in many cases given excellent couch grass control. As a matter of fact, under certain conditions of shallow rooting, particularly on light soils, as low as 25 pounds per acre may give adequate control, particularly when combined with tillage. For complete eradication of any couch

grass infestation, however, a repeat application may be necessary if established stands are not killed, or if new seedlings develop.

Many investigators have shown that as little as 12 to 15 pounds of TCA applied as a pre-emergence treatment will kill germinating seeds and young seedlings of couch grass, and of many other perennial as well as annual grasses. It has been found, for instance, that pre-emergence application of from 5 to 10 pounds of TCA per acre will effectively control or eliminate developing seedlings of **Setaria** (Foxtails), **Echinochloa** (Barnyard Grass) and **Panicum** (Old Witch Grass). Such a dosage should therefore be kept in mind where couch grass control in established stands is not the main problem.

Tolerance of Crops. Based on recent investigations made with rates of 5, 10 and 20 pounds per acre of TCA (Sodium TCA 90%) it has been possible to classify certain crop plants into three groups as follows.

Tolerant—pea, lettuce, tomato, carrot, parsnip, celery, cabbage, turnip, radish, beet, and others.

Intermediate—alfalfa, oats, asparagus, gladiolus, onions, spinach, potato, muskmelon, cucumber, pumpkin, and others.

Susceptible—bean, corn, rye, wheat, barley, red clover, sweet clover, Kentucky Blue Grass, bent grass, red top grass, timothy, and a number of the other grasses.

From these results it is obvious that TCA should not be used on lawns or similar valuable turf areas.

Farmers or gardeners who have pockets or patches of couch grass in their fields or gardens would be well advised to treat these areas in the Fall. The cost of spot or patch treatment is low, the use of the land is not lost, and above all the infestation may be kept from spreading. Furthermore, Fall treatments of couch grass allow Spring planting. It is important to point out here, however, that although the control of couch grass infestations on large cultivated fields with TCA is desirable, it is not yet economical to do so at present prices of this promising grass-killing chemical.

Fifty pounds of TCA (Sodium TCA 90%), applied after cultivation will effectively treat one acre of land. This is equivalent to 2 ounces of TCA per 100 square feet. The chemical may be applied in the dry form or as a spray — the latter is preferred. A convenient dilution range is 1 pound of TCA in 1 to 2 gallons of water.

Another important advantage TCA has over other grass-killing lies in the fact that it can be mixed with 2,4-D weed killer to get control of both broad-leaved weeds and grasses in a single spraying.

Although TCA was introduced just four years ago for the control of certain perennial and annual weeds its range

of usefulness is rapidly increasing. The most promising new uses uncovered by recent investigations include the control of certain annual grass weeds in flax, and the control of grasses in fruit crops, nurseries, and established deep-rooted perennial crops. There is little doubt that as each year passes TCA will become increasingly valuable to the agricultural and horticultural industry, and also for many grass control problems on nonagricultural land.

Precautions. The period of so-called soil sterility caused by an application of TCA is usually relatively short but may last for 60 days or longer depending upon the type of soil and the amount of rainfall following application. The results will vary greatly under local conditions. Although many tests have shown normal growth of spring-planted crops on land treated the previous Fall, it has been found that under certain conditions some residual effect may extend to the growing season following treatment.

While TCA acts more or less selectively, it can injure many broad-leaved plants, including shrubs and trees, and proper precautions should be taken when application is made near such plants.

Experimental studies with animals have shown that TCA is very low in toxicity when swallowed. However, TCA is appreciably irritating to the skin and eyes, and will cause burns on prolonged contact. Precautions should, therefore, be taken to avoid contact with the skin and eyes. No apparent hazards are believed to exist in regards to wild life or animals which may feed on foliage sprayed with TCA, because foliage treated with the recommended dosages of TCA is not poisonous. As there is no fire hazard associated with its use, TCA may be used with safety. It is important to mention here that all equipment used for application of TCA sprays should be thoroughly flushed out immediately after use.

What's Ahead. Research as well as the experience of farmers and horticulturists have shown that many weeds can be effectively controlled in growing crops through the judicious use of chemicals. We now have over 20 different chemicals that have proven their weed-killing ability. Only after long and continued research can the best use of each one be determined. With every chemical the effect of the treatment is dependent on the crop and weeds concerned. It is encouraging to report that, on the whole, manufacturers and distributors of chemicals keeps their recommendations remarkably well in line with the best research findings. Consequently, highly satisfactory results can be expected, and are usually obtained, when weed-killing chemicals are used in close accordance with the label directions of the manufacturer.

By the wise use of chemicals it is possible to greatly reduce the cost of weeding many horticultural crops and to save some crop when wet weather makes it impossible to cultivate. However, chemical weed control must not be considered as a substitute for all cultivation, but rather a method to be used to supplement standard cultural practices.

The future of chemical weed control is very promising. It is no exaggeration to say that it is potentially possible that some day we may have a chemical that will kill all plants other than the crop plant being grown, or a chemical that may control any specific weed without injury to other plants. The trend seems to be toward the use of a specific chemical for a specific weed problem, even to a specific weed species. In the years ahead, chemical weed control is bound to find a permanent place in accepted agricultural and horticultural practice.

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Fruit Trees for the Home Grounds: Even on the smaller home lots there is usually a place for a few fruit trees. In many cases a small home orchard is possible. In smaller places fruit trees can be worked in with the landscape plantings. As a whole, fruit trees grow rapidly and if well cared for they are tidy and a desirable feature of the landscape.

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Don't work soil when it is too wet—

If a handful molds into a tight mass when squeezed, it is too wet.
If it is hard or so "powdery" it can't be molded in the hand, it is too dry.
If it molds in the hand, yet crumbles easily with a tap, it's right for working.

Hardy Shrubs for Prairie Farm Homes

T. J. EWING

When choosing flowers and shrubs to provide a more attractive setting for the home, too often the homemaker does not consider sufficiently the conditions under which they will grow. Some plants will be much of the time in shade, others will have long hours of sunshine each day. Other things should be considered too, such as height of growth, tendency to sucker, etc. Of course, hardiness is a prime requisite too, in prairie gardens. And in many areas drought resistance must be considered.

Let us consider first the varieties that do best in shade, and will not thrive unless they are at least partially shaded. Certain to be hardy because it is native to most park country areas, is the high bush cranberry. Anyone who has picked the berries for jelly making knows how much it loves shady nooks. It also needs plenty of moisture. Under cultivation it does very well in the open, but may require four or five years to produce berries after transplanting.

Becoming quite popular, but not yet as widely distributed as its excellence merits, is the evergreen juniper. It also grows in shady places in its natural habitat, and does best if shaded from the afternoon sun. The common ground juniper is very hardy, and small plants are most successfully transplanted. The berries take two or three years to mature and may remain on the bushes for two or three years after ripening.

Even more desirable because of its upright growing habit is the Rocky Mountain Juniper. It is completely hardy under prairie conditions, and because of killing back during severe winters, seldom reaches a height of more than six or eight feet.

RED BARK, GREEN LEAVES

Because of the pleasing contrast of its red bark and the green of junipers in winter, the red osier dogwood is effectively set next to a juniper or other evergreen. It, too, is a shade loving shrub, and completely hardy since it is a native. It does best if plenty of moisture is provided.

The saskatoon or serviceberry is another hardy native shrub that prefers partial shade, although it does well in direct sunlight. Like the high bush cranberry, it is particularly

desirable because it produces edible fruit. When moving saskatoons it is necessary to trim the stocks to the ground level, since they do not transplant easily.

Alpine or mountain currants are often used as a hedge because of their compact growth. They are particularly desirable for use under trees as they withstand shade well. Flowering currants, native here, are most effectively used as individual shrubs, or in mass plantings. They tolerate moderate shading. The fruit makes excellent jelly or jam, particularly in combination with apples or rhubarb.

A great favorite among prairie landscape gardeners is the cotoneaster. They do well in partial shade or full sunlight. They are very hardy and drought resistant, and can withstand considerable abuse. Normal height is five to six feet, but they may be kept smaller by pruning. Bright green in summer, the foliage turns a bright bronze in autumn. The dark colored berries are also showy in the fall, and remain on the bushes all winter.

Cotoneasters are also popular for use as a hedge. The Peking variety is perhaps the most outstanding for this purpose. The European is also good, and the Siberian makes the most desirable medium-sized hedge.

Elders thrive either in partial shade or in full sunlight. The European red elder, and especially some newer varieties developed from this species, are best. The bright red berries, borne in large clusters, make excellent pies or jelly. If a golden-leaved shrub is desired, the golden American elder is available. Smaller than the European elder, this species grows to a height of about five feet. It is not fully hardy here, however, and often kills back to the snow line.

Dwarf burning bush, which includes both upright and straggly forms, likes partial shade, and is particularly effective in a rock garden. The leaves may remain evergreen, especially in sheltered spots.

HARDY DWARF

Smooth sumac is one of the most shade-loving plants available to prairie homemakers. It does not grow very tall, not more than six feet. Often it is planted in shady nooks, or beneath taller growing shrubs. Its bright red foliage in the fall makes it particularly desirable. A dwarf form of this species, never growing to a height of more than three to four feet, is also hardy.

This discussion of plants suitable for shady spots may be closed with spirea, which tolerates some shade, but does better in sunlight. It is one of the most showy of perennial flowers, but has been slow to become popular around farm homes. Garland spirea is first of this species to bloom in the spring.

It kills back sometimes, but renews itself quickly. Korean spirea is quite winter-hardy, but is less drought resistant than some of the others. Oriental and Bank o'Snow or Pikov are hardy varieties growing to a height of about four feet. Vanhouette is perhaps the most beautiful variety of all, but is not very winter-hardy. Somewhat like it, and much hardier is the Three-Lobe spirea. If a change is desired from the white blooms of these varieties, Anthony Waterer may be obtained, which has red blossoms, and Froebeli, with pink flowers.

First on the prairie dweller's list of flowering shrubs, where tolerance to shade is not a factor, is the lilac. While the common or French lilac is the most popular species, several others are available to lend variety and distinction to the home grounds. Common varieties with single flowers include Buffon (pink), Hugo Koster (mauve), and Ludwig Spaeth (reddish-purple). If a distinctive color is desired, the double-flowered Alphonse Lavallee, with blue blossom, may be obtained. President Grevy is violet blue, and Charles Joly is crimson to dark purple red. Edith Cavell, Michel Bechmer, and Mme. Lemoine have white blooms.

The Preston lilac is a hybrid species, on which much additional improvement work has been done. Alice, Desdemona, Elinor (dark red in bud) and Jessica (rich red violet) are Preston varieties available. From the same cross that produced Preston, the Morden experimental farm has developed Royalty (rich purple flowers), Coral (clear rich pink, free from lilac tints), Nocturne (hazy lilac-blue), Redwine (rich red wine), and Swanee (white, somewhat suffused with pink in early stage. F. L. Skinner, at Dropmore, Manitoba, has also produced several noteworthy hybrids including Hiawatha (deep pink), Donald Wyman (deep purple), and Hedin (white with a tinge of pink), which blooms late in June.

The Chinese lilac, one of the parents of the variety Hedin, is also late blooming. It is extremely hardy, even the buds being seldom damaged by frost. Highly drought resistant, it is particularly suitable for exposed prairie conditions. It grows to a height of 10 to 12 feet, has dull large green leaves and rosy lilac to whitish flowers.

If a tree-lilac is desired the Japanese species should be ordered. It grows to a height of 12 to 20 feet, and is latest blooming of all the lilacs. The white flower clusters are often more than a foot long.

The Amur lilac makes the best trimmed hedge. It bears small, fragrant, creamy white flowers, in large panicles. The Chinese lilac, mentioned above, if planted in a row, makes a dense screen but should not be trimmed.

Fully deserving the considerable popularity it has achieved is the Tatarian honeysuckle. Untrimmed, it grows to

a height of about 10 feet. A better hedge plant than the lilac, it vies with it for premier honors in fragrance and showiness in blossom time. The bright red berries give pleasure to the eyes in fall and winter, long after the bright colors, which vary from deep rose to pale pink or white, are but a memory. It is one of the hardiest of the larger ornamental shrubs.

A very hardy, low spreading shrub is the Albert Regal honeysuckle. It is useful as a ground cover for embankments, and in mass plantings. It has fragrant rosy-pink or purplish blossoms and whitish or pale purple berries.

Brush honeysuckle and black twinberry, also known as Rocky Mountain honeysuckle, and swamp honeysuckle, are native species. Siberian honeysuckle also is very hardy, and the dark blue berries are edible, but not very palatable. Amur honeysuckle is a hardy, late-blooming type. Morrow is one of the most showy honeysuckles. It grows to a height of six to eight feet, and is round headed, usually broader than tall. Leaves are pale grey-green, flowers, two-lipped and white, changing to creamy yellow. Fruit is dark red. Unfortunately, this variety kills back. Bella, a hybrid developed by Mr. Skinner at Dropmore, is quite hardy there, however.

Where utility is considered as well as beauty, some of the plums and cherries are highly recommended. The Nanking cherry, although not completely hardy, produces fruit nearly half an inch in diameter with an attractive flavor. Drilea is perhaps the best variety available. Flowering plum, also called flowering almond, does not produce edible fruit, but its masses of one inch pink blooms are very attractive early in spring. Even more handsome, although not quite so hardy, is the double flowering plum. It provides one of the first touches of color in spring, blooming before the leaves appear.

Dwarf Russian almond, which is related to plums and cherries, will thrive almost anywhere, because of its extreme hardiness and drought resistance. It seldom exceeds three feet in height, and has drab greyish-green foliage. The straight pink flowers bloom early, but not for long. The Baton Rouge variety, developed by Mr. Skinner, has the longest blooming period. The nuts have some value as food.

The purple foliage of the purple-leaved sand cherry makes this plant a desirable ornament in the home yard. Although it often kills back severely, new shoots rapidly replace the dead wood.

Other fruit-bearing species of the Prunus family which appeal to the practical minded homemaker include Chinese bird cherry, chokecherry, selected sand cherry seedlings, and a number of the plum-cherry hybrids.

Borrowing again from the orchard trees, we can add much to the beauty of the garden with crab apples. Varieties like Osman, Dolgo, Columbia, etc., provide fruit for jelly, as

well as being an ornament on the grounds. Even more ornamental are the "Rosybloom" crabs, developed at the Central Experimental Farm, Ottawa. Their flowers, leaves, twigs, and fruits are reddish in color. Some of the best of these are Scugog, Dauphin, Erie, and Nipissing.

Common caragana is found more frequently in prairie shelter plantings than any other plant, as it is extremely hardy and drought resistant. It is used effectively as a snow break some distance from the main planting, when it is planted in a single row, 75 to 100 feet from the main shelter belt. Because of its aggressive competition with grass and other garden plants, however, it is being replaced in most instances by cotoneaster and other shrubs in home grounds.

Several other species of caragana are more desirable for home plantings. These include Fernleaf caragana, Weeping caragana, Little Leaf Pea-Shrub, Pigmy caragana, and Spiny caragana. The latter two are often used for low hedges.

No landscaping scheme is complete without provision for a few roses. Although varieties suitable for prairie gardens are naturally more limited than, for example, the Fraser Valley of British Columbia, still quite a number are sufficiently hardy to withstand prairie winters, particularly where there is a good snow covering. One of the most ornamental of the hardier roses is the Dr. Merkeley. Its flowers are double and pink, and very fragrant. It grows to a height of about two feet.

Smooth rose, the common native rose of Manitoba, is practically spineless, as the name implies. An improved variety of this rose, produced by Mr. Skinner, the Betty Bland, grows from three to six feet in height. The blooms are double and pink, and the branches are red. It may suffer some winter killing occasionally in some nothern areas.

Prickly or Arctic rose is very hardy, growing to a height varying from three to as much as five feet. The pink flowers are single, and are borne on branches two years or more old.

Another hardy rose is the Altai, which grows to a height of seven feet, and has creamy white flowers, about two and one-half inches in diameter. The hips are dark purple and quite ornamental.

Pekin or Korean roses are yellow and vary from single, through semi-double, to double. The shrub is usually hardy and the shoots and branches are covered with prickles, but no long thorns.

Scotch or Burnet rose may be white, pink, or reddish, and occasionally yellow. It is hardy except in the farthest north areas. It seldom grows higher than three feet. Most of

these roses are semi-double, but at least two varieties, Lismore (blush) and Townsend (pink), are double.

Harrison rose, with lemon yellow semi-double flowers, is less hardy than some others mentioned. The Rugosa or Japanese rose is still less hardy.

Many additional shrubs could be added to this list. Hardy and semi hardy plants which will add to the beauty and homeliness of a farm home include various maples, mock oranges, buckthorn, tamarisks, mountain ash, arborvitae, hydrangea, willows, and others.

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A Few Montana Wild Flowers

L. A. YAGER

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Many flowering plants, native to Montana, have found their way into the listings of nurseryman's catalogues and eventually into gardens all over the world. It is not unusual, for the plants are representative of a wide variation of climatic zones, growing in altitudes from about 3,000 feet to more than 12,500 feet. Since the continental divide passes through the state, both Atlantic and Pacific floras are found.

A few of the writer's favorite wild flowers will be discussed here. Quite a number of excellent monocotyledonous plants are found particularly in the Western regions of the state.

Perhaps most generally distributed are the Mariposa lilies **(Calochortus sp.)**. They are a bulbous plant and are sometimes referred to as America's counterpart to the tulip, which is indigenous to Eastern Europe and Western Asia. The Montana species are several, they are not highly colored, most bearing flowers that are white with purplish or brownish markings at the base of the petals. A couple of the species have purple-colored flowers. Some thrive in the dry plains sections, while other species are found in moist woodlands in Western Montana. This genus lends itself well to cultivation.

A much loved plant is the Trillium or Wake-robin. One and possibly two species are found in western Montana. It is one of the first flowers to herald spring and is found in moist wooded sections in the mountain areas. If provided with partial shade and if planted in a soil generously supplied with organic matter it will thrive well in most gardens.

Two species of Fritillarias are native to Montana. The yellow-flowered species **(Fritillaria pudica)** is very abundant in some sections of the western part of the state. It is not unusual to see open hillsides covered with masses of these flowers in the early spring. Natives call this flower the Yellow Bell. Generally, the flowers are bright yellow in color, but a few are almost orange in color. A few are blotched with reddish brown at the base of the petals.

Much rarer in occurrence is the Leopard Lily or Spotted Fritillaria **(Fritillaria atropurpurea)**. The flowers are brown, spotted with yellow and white. The habitat of this plant is much the same as for its relative, the yellow Fritillaria. Both species transplant successfully if bulbs are transplanted in August.

Nothing is so anxious to let us know spring is here than are the Erythroniums. They are sometimes known as Glacier lilies or Dogtooth Violets — although they are not a true lily,

nor are they even remotely related to the true violets. The one species **(Erythronium grandiflorum)** is yellow flowered with yellow or brown stamens and is found abundantly in draws, and partially shaded slopes in mountain sections of the state. They begin to bloom even before the last traces of snow have left, luxuriating in the abundant moisture provided by melting glaciers and snowbanks. This species is very abundant in Glacier National Park, hence the name, Glacier Lily. This species is an excellent garden subject.

Other monocotyledons deserving mention are the wild onions **(Allium spp.)**, Common Camas **(Camassia Quamash)**, Rocky Mountain Iris **(Iris missouriensis)**, Mountain Star Lily **(Leucocrinum montanum)**, Brodiea **(Brodiaea grandiflora)**, Fairy Slipper **(Calypso bulbosa)**, and many others.

The state flower of Montana is the Bitterroot **(Lewisia rediviva)** and the choice is certainly a good one although it does not grow over the entire state. The Latin genus name was in honor of Meriweather Lewis, of the historical Lewis and Clark Expedition of 1802-04. It is generally located in open, dry sections in the mountain areas of the state, but is not found in the open prairie sections. The roots of this plant are to this day dug by the Flathead Indians. The bitter roots of this plant are dug in the early spring by the Indians and are used in a broth or soup. The Blackfeet Indians claim medicinal properties for the roots and use it in that manner. Unfortunately, because of livestock grazing, this species is becoming quite scarce.

The Bitterroot is an important rock garden species. It is a member of the Purslane Family and possesses small, thickened, fleshy leaves much like the garden variety of Portulaca or Moss Rose. June and July are its blooming period and by that time the foliage has fairly well dried off. It is a striking sight to see these beautiful rose-pink flowers bursting forth, seemingly coming directly from the soil itself. Occasionally, one may see Bitterroots listed by a seedsman, but one may have to do a little searching. If given proper cultural conditions and a dry, well-drained site, it will flourish well in the rock garden.

A number of plants of the Wintergreen Family (Pyrolaceae), are very fascinating. I do not know how well they will adapt themselves to cultivation, but they seem to be worthwhile trying. Moist, shaded sites, generous supplies of organic matter in the soil, and acid soils, seem to be some of the needs of these plants. One of my most interesting finds last summer, was the discovery of a patch of Woodnymphs **(Moneses uniflora)** in Hyalite Canyon, in the mountain ranges just south of Bozeman. The Latin name (of Greek origin) is translated as "one joy", and this name is most certainly appropriate. The tiny flowers are borne singly on a small evergreen plant. The

structure of the flower parts is most fascinating. This species is also native to mountain sections in Europe. The Europeans prefer to group this species with its near relative the Pyrolas or Wintergreens.

A few plants of Moneses were collected and photographed. The picked flowers lasted for several days in water and all during that time they emitted a delightful fragrance. The Wintergreens **(Pyrola)** and Pipsissewa **(Chimaphila)** are equally fascinating members of this interesting family of plants.

One cannot pass up mentioning the Beardtongues or Pentstemons. They seem to thrive better when removed from the competition present in their native habitats and subjected to cultivation in the garden. Both woody and herbaceous species exist in the state and the flower colors vary from dull white, yellowish, to blues and purples. A red-flowered form is grown in cultivation here, but it is not known whether it exists as a native species or not.

This genus lends itself well to hybridization, and numerous amateurs are busy crossing different species and are obtaining many interesting hybrid forms. It would not be surprising to see many interesting forms, the result of hybridization, listed in nursery catalogues of the future. This is one of Montana's wild flower genera that seems destined for a promising future from the standpoint of usefulness in gardens, both in the perennial flower border and the rockery.

The Gentians are a beautiful genus of flowering plants. Several species are reported in Montana. A few of these have been cultivated successfully in gardens. The Rocky Mountain fringed gentian **(Gentiana elegans)** is a very beautiful flower. It grows abundantly in Yellowstone National Park and was chosen as the park flower. It is considered by many as the most beautiful of all the park flowers. Another dwarf species that was found growing near the summit of the Cooke City highway is **Gentiana romanzowii (G. humilis).** It blooms in July and August and was found at an altitude of 10,000 feet. It would be interesting to know how this species would survive at lower altitudes. It has an interesting cup-like flower. The flowers are quite large for the size of the plant. The color of the flowers is white with a little spotting of purple, and bands of purple near the base of the petals.

It would take pages to list and describe the many interesting alpine plants found in the mountain sections of the state. Many of these are already listed by rock garden and alpine garden specialists. Possibly, many more of these interesting plants will adapt themselves well to cultivation.

I have attempted to point out in this article only a few of the many interesting native flowering plants of Montana. A few may be difficult to grow in the garden, but most of them will readily adapt themselves to cultivation.

Flowering Shrubs

ERIC SOCHTING
Valley City, North Dakota

Dear Friends:

I have been asked by your president to write a little article for the year book. It is, indeed, with great pleasure that I do so. In fact, it is more like writing to old friends and believe me, I miss you very much up there in Winnipeg.

I thought my article should be about flowering shrubs. Nowadays, we have so many new and good varieties that some of the older ones are rather neglected. In my little article, I will not go after the alphabet but rather as they come to me, or as I find them useful, or as they go together in a beautiful color scheme. Some of you may not agree with me in particular when I speak about fruit trees as shrubs, but I really do think that in this part of the country we could use quite a few of the fruit trees as shrubs. We get the beauty in the spring; the fruit in the fall; and at the same time you protect your fruit trees from sun scalding.

I think, therefore, that I should start with the Rosy Bloom Crab Apples. There are really some very outstanding specimens — some developed at the Morden Experimental Station and some at the Northwest Nursery in Valley City. They are, of course, not grown for the fruit but for ornamental purposes alone. To my mind comes No. 115, as yet not named, and developed here in Valley City. It is a very outstanding tree—deep rosy red, beautiful form, always well balanced, and approximate maximum 15 feet. The apples are small and will stay on all winter. When the snow is on the ground, it is really a magnificient sight, and if you want the cardinal birds and other winter birds from the far north, you will certainly please them with this tree. It should always be grown with its branches as low as possible and in that way, I think, we have a very outstanding shrub. Other Rosy Bloom Crabs are very outstanding and should be used much more than they have in previous years.

Together with that apple tree, I do like to plant the Flowering Currant. It is another very neglected specimen which, however, is now coming into its old glory again. It is not a yellow flower but rather old gold. It is a very early flowering shrub. In fact, it is one of the earliest we have, and by planting it, you prolong your blooming time very much. To me, as a landscape man, I try to prolong the blooming time by having as many early flowering shrubs and flowers and just as many late flowering shrubs and flowers as possible. In that way, we now have flowers in our garden from late April to November; an achievement which was never dreamed about 25 years ago. But coming back to the Flowering Currant,

it should take the place of the "English Broom" which will not survive in this part of the country. The Flowering Currant will be covered with blossoms right to the tips of the branches and thereby giving us a good substitute for the "Broom" family.

In the foreground, I very often plant Potentilla. There, my friends, you have this century's outstanding shrub. It ranges from very deep gold to pure white. It starts its beautiful bloom in June and continues on until freezing-up time. No other shrub can do that. You can plant it facing south, or you can plant it on the north side of your house. No matter where, it will keep on blooming and blooming. There are many varieties on the market today. Some of the newer hybrids are exceptionally beautiful. Its blossoms are formed like single, small roses. It can take drought; it can take rain; but give it always a good drainage, and you will be repaid time and time again.

Together with the Potentilla, I do think one of the best shrubs we can use is the Red Dwarf Spirea. I, as a rule, interplant the Red Dwarf Spirea with the Potentilla, and you really have a wonderful color combination. With those two shrubs together, you also prolong the flowering time of your shrub border which, of course, is very important, as I said at the start of my article. There are several kinds of Red Dwarf Spirea, but I believe for this area that the Anthony Waterer is definitely one of the best.

Another shrub which I, perhaps, have set my heart to, is the Tamarisk. It is not used very much and still is an outstanding shrub. But give it plenty of space. It grows approximately 8 feet high and 8 feet wide when matured. It is colored with deep, rose blooms and its magnificent fern-like leaves are a sight to behold. Even in the winter time, with its very dark branches and knotty bark, it really does look very nice. Also be sure to give it good drainage.

Hydrangeas are another shrub which should be developed much more in our borders, but let me warn you, to get the maximum blooms and height of Hydrangeas no matter what the variety, you should always plant them east. They do not like any other place. Plant them east and you are sure to get a thrill of your life. To make them still better, may I suggest that you get some soot from your chimney in the spring and give them a generous amount of it. They are the only shrubs I know of, which really like this treatment, and it will really pay you.

Well, my friends, you may get a surprise now when I mention Honeysuckle, but nowadays, we really have some very outstanding Honeysuckle. Have you ever tried those real deep, dark, red ones? If not, do it. They are really worthwhile. But down here in Valley City, we have developed a

new one. The blooms are rather on the pink side, but lo and behold, when the flowers are finished, we have those magnificent berries that look like small oranges. It is just unbelieveable to see those shrubs in their full glory with the fruit on them. The name we have given this shrub is Valencia, taken because they look like small Valencia oranges. This Honeysuckle has a very nice growth — maximum approximately 8 feet. It will never get "leggy"; it has beautiful proportions in the branches, and the leaves are always very, very nice. So altogether, I think this Honeysuckle is one of the most outstanding things ever produced in this nursery.

My last, but not least word in shrubs, should be the hardy Roses. There again I go with something perhaps you do not count as shrubs but at the same time, I think some of the very hardy Roses, of what we call Eskimo type, should be included in this group. We have an outstanding group of roses now — fairly tall ones and fairly low ones which will give you bloom all summer long. You can plant them east, west, or south, and they will do very well. There again, be sure you give them good drainage. They like lots of water but not wet feet. The Belle Poitevine, medium size, deep pink, double, is really good for the foreground. The Sir Thomas Lipton, pure white, 4 feet high, is very strong and very good. The Hansa is a very deep rose, and can go up to 6 feet high. Then, of course, you have that old stand-by from Dr. Skinner, the Betty Bland which is very good for corners. In fact, that is the way I do like it—in the corners. And, of course, there are many more roses which you can find at the different nurseries and in catalogues, which are very outstanding.

So there you are, my friends. It has been nice to have this little visit with you, and I do hope it will help you in some way. My best wishes to the Society for continuous success in the coming years.

Bees and Flowers

D. R. ROBERTSON
Manitoba Provincial Apiarist

Canada is a land of milk and honey and two things that make it such are bees and flowers. No two things are more dependent on one another because bees require flowers for their existence and the absence of bees could starve the people of the world to death. One cannot visualize the tremendously large job which is done by bees in pollination of food-producing plants and the value cannot be estimated in dollars.

There is no form of fruit or vegetable, that does not require bees for pollination or will be materially improved by their presence. As one example of vegetables, consider plants, such as the cucumber, watermelon, squash and pumpkin. All of these plants are monoecious; that is, they produce both male and female flowers on the same plant. However, the male and female organs are born in separate flowers. This fact along with the fact that the stamens, which are pollen producing organs, are located deep within the throat of the flower, makes these plants almost entirely dependent on insects such as bees, for pollination. Also the period of time during which the female blooms are open and the pollen mature and capable of fertilizing the female flower is relatively short. If no bees are present to transfer the pollen, little or no fruit will be set and the yield reduced.

As an example of fruit, consider such trees as the cherry, apple, pear, plum and peach. Some varieties are self sterile, that is, fertilized by their own bloom, but others require cross pollination and certain varieties do not pollinate other varieties. Where varieties are alternated and when bees as pollinators are abundant, it is unquestionably true that more effective pollination occurs.

Years ago, the farmer or gardener was not aware of pollination problems, but wild pollinators have been so greatly reduced in numbers in the last few years that they are no longer sufficient to assure adequate pollination. This reduction has been brought about by several reasons, the most important of which is the cultivation practices carried out in growing fruit and vegetables. Also large modern machinery makes it possible to clear vast tracts of land, destroying the areas of nesting places for wild bees. The honey bee has therefore become the predominating pollination insect and the only one controllable by man.

Another practice which has tended to reduce the numbers of wild pollinating insects is the large scale use of insecticides. In trying to control pests attacking crops, growers have un-

wittingly destroyed large numbers of the beneficial insects as well. Growers are, therefore, turning to the honeybee for adequate pollination.

Honeybees are especially valuable as pollinators since they are more or less under man's control and their numbers can be increased or decreased simply by moving colonies into or out of the fields. Then, too, the honeybee has the trait of sticking to one crop. If a bee visits a cucumber or apple blossom once, then it will continue to work those flowers as long as they remain open, or until the nectar flow ceases. This ensures maximum pollination in the blossoms being visited. Even such garden crops as carrots, peas and potatoes, can be improved upon, both in yield and quality, when supplied with abundant pollinators. While some growers are fortunate enough to have honeybee colonies located near their crop and thus are assured of adequate numbers of bees, others must contact beekeepers and make arrangements for a supply of pollinators. Unless the grower has had considerable beekeeping experience, it is advisable to rent honey bee colonies from a competent beekeeper rather than attempt to keep bees of his own. For the most effective pollination, it is imperative that the honeybee colonies be manipulated properly.

The presence of honeybees near a field is not always sufficient to insure pollination and two other factors which are of major importance are arrangement of honeybee colonies and the use of insecticides. The colonies should be placed singly throughout the field or in small groups. One colony per acre is usually considered sufficient for most fruits or vegetables. It is necessary in many crops to use some form of a chemical poison for the control of injurious insects.

Too often, however, consideration is not given to the fact that the chemical being used might be destroying all the pollinating insects if spraying takes place at blossoming time. A handbook on Pest Control recently published by a Company in New York listed 211 compounds, and many more have been discovered since then. Needless to say, all these compounds have not been tested as to their toxicity by pollinating insects such as honeybees.

Calcium arsenate has been replaced largely by DDT, DDD and Toxaphene, with a material reduction in the loss of pollinating insects. Some arsenicals are still used on fruit trees and on field crops, but can be replaced by more effective chemicals which are less injurious to beneficial insects. Methoxychlor can be considered as a safe insecticide but certain other chlorinated hydrocarbons such as benzene hexachloride, chlordane, lindane, aldrin, and dieldrin are highly toxic to honeybees on contact and as a stomach poison.

The organic phosphates such as parathion, and metacide, are some of the most toxic poisons to honeybees. Sulphur

and sulphur compounds are generally safe under field conditions. Dinitro compounds, as used in controlling mites on legumes or for fruit thinning, are not too destructive on pollinators. The herbicides such as 2,4-D are generally not too injurious to honeybees. Bordeaux mixture is not injurious to bees, in a limiting way but some of the newer copper fungicides have caused serious losses when applied to fruit trees in bloom or when the sprays fall on cover crops which bees were working.

No effective repellents have been found to use with harmful sprays or dusts to prevent injury to bees and none of the newer pesticides have sufficient repellency to prevent injury to bees working in sprayed or dusted foliage. Dusts are more injurious on the whole than sprays, and are more difficult to confine to the crops or fields treated.

Many crops have limited periods of bloom, both in duration and time of day. Well planned spraying can often eliminate the danger of destroying the pollinating insects. The value of honeybees to Agriculture is worthy of consideration and the industry can profit more by demonstrating this fact than by militating against the use of pesticides.

The Cemetery as a Beauty Spot It Can Be—It Should Be

R. M. STEPHENS
Superintendent, Elmwood Cemetery, Winnipeg

Mankind's rural environment for one hundred thousand years conditioned him to an awareness of beauty in nature, an awareness intensified by his revulsion against the utilitarian ugliness of the towns and cities he subsequently created. Only within our lifetime have we seen a truly popular move to recreate the Eden he once knew.

Gladstone, less than a century ago, made the now rather trite assertion, "Show me the way a nation cares for its dead, and I will measure with mathematical precision, the greatness of its people." As with most generalizations which are usually unchallenged, it indicates a pious hope, rather than a factual thesis, for the nation that produced a "Maspeth" cemetery, also created "Forest Lawn," the one a pipefitter's paradise, and the other a gem of scenic magnificence.

It is obvious therefore, if we are to concede some degree of truth to Gladstone's statement, that a great measure of responsibility falls on the shoulders of the cemetery planner, for on his wisdom, or lack of it, largely depends the attitude of the public toward the cemetery.

In our western civilization, the cemetery evolved from the stone mound of the ancients, through the railed flagstones of the old-world church yard and the high-walled necropolis of the nineteenth century, to the landscaped cemetery of our day and the garden of the immediate future. Can it evolve further? Need it?

Travelling through our countryside, we occasionally come across a small fenced area, void of trees and shrubs, containing a thinly distributed collection of monuments. The stones off balance catch our eye. These are the rural cemeteries, the responsibility usually of the newest elected member of council. Burials are too infrequent and rainfall too irregular to call for enthusiastic sustained effort in the interest of cemetery beautification.

Approaching urban centers of population, we are usually confronted with burial grounds which have the appearance of a monumental mason's workyard. Indeed, we may get the impression here that the presence of horticultural elements would be incompatible with the avowed purposes of the cemetery. The high walls of the necropolis of the Victorian era at least spared the passer-by the depressing effect of its

interior, and one is tempted to wish that people, who today find solace in such congestion of inscribed stone, would at least elect to absorb their comforts in seclusion. If burial grounds are to persist, this is one type we can well do without for it does not belong to this age of enlightenment. The mausoleum too, as an integral part of the cemetery, has had its day, and rightly so, for the enormity of this error is now apparent.

We can be deeply appreciative of the love and affection that prompts people to erect memorials, but is it not time we took a more reasoned attitude toward this matter? We cannot forever litter the landscape with these evidences of mortality. What justification can there be for passing on to an indifferent posterity, the imposition, the obligation, this desire to perpetuate ourselves.

The larger cemeteries in Canada and the United States, generally fall into two principal categories, one, the monument cemetery, the other the more recent innovation, the Memorial Park. The latter term is, however, somewhat of a misnomer, since the words monument and memorial are synonymous, and the Memorial Park is noticeably characterized by an absence of monuments. However, the answer seems to be that the cemetery, as an institution, is loath to abandon a name which has characterized its outward appearance for centuries, hoping the public will come to realize that the intrinsic beauty of the cemetery itself is a fitting memorial to its dead.

With this present day trend to the park type of cemetery, where the identification of the grave is confined to a briefly inscribed footmarker, the problem of the landscape architect is much akin to that of the municipal park designer where emphasis is placed on group or perimeter planting, the latter pertaining particularly to parks where play fields are desired.

In the case of cemeteries however, the amount of planting is limited by economic and utilitarian considerations, for it must be remembered the cemetery is first and foremost a burial ground, where practically every square foot of usable ground will eventually be excavated to a depth of six feet.

The monument cemetery on the other hand, requires a different landscaping approach. Dispersal planting, polka dot fashion, serves this type of cemetery better than any other. The public demand today being for single and two grave plots to the almost total exclusion of larger sizes, normally gives rise to a congestion of monuments and if some curb were not placed on the number of memorials erected within a given area, the artistry of the landscape architect would be very much wasted.

This is the dilemma which faces the cemetery board. It has the right to rigidly regulate these matters but until the

public have learned to subordinate their personal interest to the overall beautification of the cemetery, the problem will remain unsolved, much as it has been for the past 30 years or so.

The situation is further aggravated in that public appreciation of beauty in stone masonry is not always at the highest level. It is often dominated by financial considerations, while in the past the craftsmanship of some memorial masons has left much to be desired.

The lack of beauty in many instances and the harsh lines of even the better designed monuments make it imperative that the outline be softened by the planting of perennials, shrubbery, or small evergreens on the flanks of the memorial, with annuals, geraniums, etc., in front to screen the base. This planting further supplemented by the dispersal planting of a diversity of smaller trees such as the Paper Birch, Mountain Ash, Russian Oliver, Manchurian Pear, Chokecherry, the untrimmed Carragana, etc., and an occasional grouping of Cedars as well as some of the larger trees like Spruce, Oak, Elm, Ash, Basswood and Poplar, particularly the Tristis variety, all disposed to give the sharpest possible contrast in form, color and texture, combine to give the monument cemetery a most pleasing appearance. In fact, were it not for these horticultural embellishments, a discriminating public would inevitably turn its attention to and favor almost exclusively the Lawn or Park type of cemetery.

While most of the emphasis must be placed on its horticultural aspect, it is essential that our cemetery shall have driveways with sweeping curves, designed to provide easy access to the remotest part of the grounds; that some degree of undulation and adequate drainage exist and preferably the cemetery have its back to the north. Given these favorable factors, all that remains is a wise choice of horticultural material. Compared with the more temperate zones, we on these windswept prairies are faced with a much smaller range of planting material, particularly trees valued for their ornamental effect. Of the three hundred varieties of Oak in existence only the Bur or Mossy Cup variety finds itself at home here. Our saving grace, however, is the American Elm which so far on the prairies has been spared the ravages of the Dutch Elm disease. This vies with the Oak for the kingship of all trees and grows more beautiful with advancing years.

That excellent results can be obtained on the prairies in spite of the limitations mentioned is, however, proven by the beautiful municipal and government parks in our midst.

Selection and arrangement of tree material for landscaping purposes depends largely on factors such as avail-

ability, color, leaf texture and density, form and ultimate height, rate of growth and lifespan, whether deciduous or evergreen, and the degree and circumstance of hardiness. These same elements of choice prevail also with the multitude of shrubbery specimens available.

The planting in the cemetery boundary is the starting point of our planting plan, for no matter whether the plan adopted for the interior be group, dispersal, or perimeter, the boundary forms the framework for the horticultural setting within.

The treatment of the boundary may of course vary, and in cases where the dispersal plan has been adopted, the boundary might contain, for instance, a somewhat restricted repetitive planting of American Elms properly distanced, say fifty or sixty feet, combined with small single stemmed trees planted within the bays, and further supplemented by shrubbery forming a hedge. If it should be desired to partially screen out the exterior or to avoid the expense of maintaining a long length of trimmed hedge, Chinese Elms could be substituted in the bays with, say Cotoneaster, acutifolia (dark green) and Melanocarpa (grey green) varieties alternately staggered in the gaps. The occasional concentration of tall evergreens, ash and certain varieties of poplar supplanting the Elms will break the monotony and provide accent for the distant view. In this there is considerable scope for individual preference and diversity of treatment, ever remembering that in horticulture too, cleanliness is next to godliness, and that some trees and shrubs have an unholy sense of disorder.

Where the group planting has been followed in the interior of the cemetery, it provides the landscape architect with the opportunity for the full realization of all the artistry he possesses. It is here with a combination of evergreens, deciduous trees, and shrubbery he creates within the limits of the space available broad masses of foliage containing dark vertical accents buttressed by broader masses lighter in color and fronted by smaller trees having thinly sparsed leaves that filter the view. An assortment of contrasting shrubbery provides a substantial base while in the boundary, taller serrated plantings point up the skyline creating the back-drop for the groupings within.

Formality in design, where possible of attainment, should be limited to small areas where focal emphasis for one reason or another is desired. It should be observed that with formal planting of great extent, the eye unwittingly struggles to encompass the concept in its entirety and this strain is only relieved by the unsymmetrical grouping of other planting on the flanks and in the background.

Elements of perimeter planting will be found to combine fairly effectively with dispersal planting, but if used with

group planting, will detract somewhat therefrom, for it may be remembered, each group planting requires its complement of spacious lawn to obtain the best possible result. The use of annuals with perennials in continuous flowering relays to front the group planting bays will sharpen and maintain the color contrast during the whole of the summer season.

A more recent development in cemetery landscaping and one having its own style of charm, is the garden cemetery. The emphasis here is on trimmed hedge enclosures, with small trees, broad leafed evergreens in the background, and annuals and perennials in the forbays. While eminently suited to the more temperate zones, where a more varied colorful shrubbery is available, it demands a high standard of maintenance with consequent high cost. It is therefore attainable only in the more wealthy communities.

Of all the matters so far considered, none is more pertinent than the question of care subsequent to burial. These considerations, however, are too ponderous to be dealt with here, except to acknowledge that the question of cemetery beauty is irrevocably bound up with them, for no matter how well planned or how well landscaped a cemetery may be, if graves are not kept up to grade, grass cut reasonably short, weeds eradicated, trees and shrubs pruned, and the property kept in a state of good repair, the beauty of the cemetery will suffer to the extent that these details are disregarded.

Points on Picking Flowers

We all know that flowers soon start wilting if they don't have water right after cutting. This has a great deal to do with how long your flowers last in the house after picking. This is so important that it is a good suggestion to carry with you a deep container filled with water as you pick your flowers. As each flower is gathered, plunge it immediately into water.

For picking flowers you need a sharp knife, scissors or a pair of secateurs with a sharp blade. The time to do the cutting is either early in the morning, say just before breakfast, or late in the day, just before sunset. You will find that flowers are at their freshest then. If possible you should choose buds that are just ready to open. Flowers will last much longer if picked in this stage.

By cutting each branch a half an inch or so above a leaf you will not only keep your plants healthier but they will look neater after cutting. It is a good idea to remember to leave as many leaves as possible on all your plants to encourage and help further flowering. Remember the leaves manufacture the food used by the plant and if you remove a great deal of the foliage you will very definitely weaken your plants.

It may interest you to know that the stems of your cut flowers will take up warm water much faster than cold water, so if you use warm water around a hundred degrees it will mean much longer life to cut flowers. The water will stay fresher if you remove any leaves that will be under water in your vases or bowls. If you have flowers whose stems give off a milky sap it will pay you to char them with a lighted match. Flowers such as roses which have woody stems should be partially crushed with a hammer or some other blunt instrument. It will pay to recut the stems of your flowers every day. Strangely enough this should be done under the water. If you try to do it out of water, air bubbles in the stem are liable to block the absorption of water.

There are certain chemicals on the market that will prolong the life of cut flowers when added to the water. If you use one of these chemicals you won't have to change the water. They can be purchased from any florist. You can probably see by now that it isn't just a matter of going out and picking a handful of flowers if you want to get the best results from cut flowers.

Indoor Ferns

GRANT CHURCHER
Chief Gardener, Legislative Grounds, Winnipeg

Ferns are indispensable in any collection of plants, be they for the home or conservatory, and, of the ferns, the Boston is the best for home culture.

Whitmanii which is a sport of Boston is often considered the more attractive with its feathery fronds. They often revert back to Boston if fronds of the Boston type are not kept cut out.

Ferns like a warm, humid atmosphere, some shade in summer, and a cool root system, which can best be assured by having the pots in large earthern ware jardinieres. Care must be taken to see that no water stands in the jardiniere around the roots.

A good compost for ferns is made up as follows: two parts loam, one part leaf mould, one part sand, one-quarter part dried cow manure, one-quarter part broken charcoal, to this a little bonemeal may be added. A well-drained soil is important. About one inch of broken crock in the bottom of the pot should be sufficient.

Repotting should be done once a year, and spring is the best time just as the new growth is beginning. Ferns which have grown too thick for the pot may be divided, repotting the healthier sections, however, ferns whose crowns have risen high above the soil and are not thriving should be discarded.

Broken fronds, discoloured leaves and runners should be kept cut off, runners are those cord-like growths that hang over the side of the pot and are of no value to the plant except where one wishes to produce young plants, in which case the plant is set in a media such as damp moss, and these runners on contact with the moss send out young plants which are cut off, and potted.

Overwatering causes browning of the fronds as does too dry an atmosphere and drafts. Gas in the home will often kill ferns.

Insects attacking ferns are as follows:

1. Scale insects which look like small wax-like lumps and are mostly found along the axis of the fronds, near the base, are very hard to control. Spraying with Volck and cutting off the worst infected fronds will keep scale down. Badly infested plants should be destroyed. In using Volck, care must be taken to wash the residue off thoroughly.

2. Mealy bugs related to scale insects look like bits of cotton fluff because of the eggs carried by the female in a

cotton sac, and deposited in the axis of the leaves. Spraying with Volck, as above, is recommended.

Table or dish ferns are fast becoming popular due to the use of highly-ornamental containers now sold for this purpose, requiring only green foliage to make them lively and attractive.

In this paper, we will classify the Asparagus as ferns, though they are definitely not, being seed-bearing plants, while all true ferns reproduce by means of spores. These spores are borne on the back of the fronds in regular rows and look like small spots of rust.

The asparagus Plumosis Nanus, so often used by florists, in bouquets, is one of the prettiest and toughest of this group, and can be grown from seed by the amateur very easily. Soak the seed for twenty-four hours, then plant, covering to a depth of one-quarter inch in light sandy soil and keep moist and dark in a temperature of 65 to 70 degrees till young plants emerge.

The asparagus Sprengerii is often used by gardeners in window boxes, has coarser whorled leaves and with its long pendulous stems is not so good for dish culture.

These two so-called ferns are quite adapted to dish culture. Given a slightly acid compost made up of two parts soil, one part peat, one half part sand plus some dried cow manure or bonemeal with the addition of rough charcoal in the bottom of the container where no drainage is provided, will do well in the average home.

Maidenhair fern is one of the most difficult of house ferns to grow due to its requiring much more moisture in the air than we have in our homes. However, it is a very good subject for a terrarium.

Pteris in variety is also a good table fern, quite hardy.

Holly fern is one of the best dish ferns with shiny dark green leaves vaguely resembling holly.

Rabbitfoot fern is a very interesting subject, with hairy brown rizomes on top of the soil from which the fronds spring, is probably a little rough for dish culture.

Cacti

A. HORNBY,

Dominion Experimental Station, Summerland, B.C.

We have chosen for our topic today, a class of plants that have the human attribute of being "fearfully and wonderfully made." Close contact with these plants will fully prove to you that, Hitler-like, they have their strong points which are inclined to repel rather than attract. It is to their odd and grotesque forms rather than the amount of bloom that Cacti owe their popularity. However, some varieties have very attractive blooms, with a beauty all their own. These blooms do not last very long, which may be one of their virtues. To appreciate the full beauty of others, you must view them by moonlight as they bloom only during the night.

Some one may well ask, "Have Cacti any allure?" Just as an illustration, I may state that at the Summerland Experimental Station we carry out many phases of flower culture, yet none surpasses in interest and fascination the collection of Cacti. During the summer months this collection is planted on a dry hillside which provides a natural desert-like setting. It is only in recent years that the culture of Cacti as house plants has become popular. I can well remember in my early gardening days seeing a few specimens grown on an odd corner of the greenhouse. These plants were looked upon as being very odd, because the more you knocked them about and the less care you gave them, the better they seemed to thrive. (And is it not the truth that many humans react in the very same manner?)

Today there are upwards of twelve hundred species and varieties of Cacti in cultivation. Cactus societies have been formed in both Europe and America. These societies publish journals entirely devoted to the culture of Cacti.

When once understood, Cacti are very easily grown, and propagated. I will even go so far as to say that I know of no other class of plants that can be got together to form a varied collection in as short a time and at such a low cost. It goes without saying that all real lovers of plants are very generous in exchanging specimens, but in the case of those bitten by the "Cactus Bug," this virtue seems to be especially well developed. Accordingly, if you take up the culture of these plants, you will soon gather a collection simply by exchange and gifts from your Cactus friends.

The most impotrant feature for growers of Cacti to remember is that these plants (like all succulents) are impatient of too much water. It is only by experience that the

grower knows when to give and when to withhold water. However, it is well to note that the more succulent a plant is the less frequently it needs vatering, as it contains enough moisture in its tissues to carry it over a long dry period. If you wish success in the growing of Cacti, their wants in regard to moisture must be carefully studied.

While over-watering is one of the chief stumbling-blocks to the successful cultivation of all succulents, it should also be borne in mind that any plant grown in a pot has a very restricted root run. The roots being confined to the inside of the pot are unable to draw moisture from the surrounding soil. Accordingly, plants grown in pots must be watered more frequently than those growing in the open. This root action is very vividly demonstrated when Cacti or other plants grown in pots are plunged two or three inches below the surface of the ground. When lifted in the Fall a mass of roots will be found above the surface of the pot.

Due to the dry conditions under which Cacti grow, they are remarkably free from insect pests. Sometimes under cultivation they are attached by a close-clinging scale insect and by the mealy bug. Both these insects can be kept under control by the use of a camelhair brush dipped in wood-alcohol and applied to the insect when found infesting the plant.

Cacti are seldom attacked by fungi unless they are damaged or given too much water. If a fungal rot starts it can often be checked by applying to the affected parts a dusting of charcoal and flowers of sulphur in equal proportions.

The soil used for growing Cacti should be of an open and porous nature so that any water applied can drain away freely. The following compost will be found suitable for the growing of all kinds of Cacti: take half a bushel of fibrous loam, half a bushel of leaf-mould, and half a bushel of clean lake-shore sand, add a 4-inch potful of charcoal, the same quantity of crushed brick, and mix thoroughly.

It is an interesting fact that the species of Cactus, Opuntia robusta, generally known as Prickly Pear, become a noxious weed in Australia. This Cactus is a native to the American continent but was introduced to Australia for sentimental reasons. The climate of Queensland proved so favourable to the growth of Prickly Pear that it increased at an alarming rate and took possession of a great portion of the best arable land. In an endeavour to get rid of it the settlers put tractors in the thick plantations. This procedure only made the situation worse as the portions broken off by the tractors quickly rooted and spread. It was not until the introduction from California of an insect very destructive to the roots and stems

of the Cactus that this menace was brought under control. As the Prickly Pear Cactus is killed by frost, there is no danger of it spreading in Canada.

I do not think that any good purpose would be served by giving you a list of long names of Cacti. However, if this talk has stimulated a desire to grow these "Clowns of Nature" in your garden or as house plants, a letter addressed to the Summerland Experimental Station will bring you a list of suitable varieties with information as to where they can be secured at relatively low prices.

In conclusion, if the hair of a dog that bites you is a good antidote, then on the same principle, if a Cactus plant barbs you on one hand, buy another for the other hand. By so doing you will even matters up and at the same time you have two Fairies in your home to ease you from ordinary every-day troubles.

P.S. As the postscript of a letter is said to equal in importance the contents of the whole, so it may be possible what I am about to add will have the same value.

It is generally admitted that anyone growing 5 or 10 specimens of Cacti are full fledged Cactophiles, so to anyone listening in who would like to join this charmed circle, allow me to give you the botanical and common name of 10 varieties.

(1) Cephalocereus Sinilis. The old Man Cactus with white woolly hair. (Not to be confused with the White Haired Philosopher whose dulcet tones come to you over CKOV.)
(2) Opuntia Basilaris. Beavertail Cactus, covered with orange spots. Very effective and kind. No spines.
(3) Zygocactus Truncatus. Christmas Cactus. This one everyone knows.
(4) Opuntia Robusta. Prickly Pear. Delicious fruit. Requires lots of space.
(5) Echinocactus Grusoni. Golden Ball. Very beautiful spines.
(6) Phyllocactus. The long leather leaved kind. Large crimson flowers.
(7) Opunta Monocantha Variegata. Joseph's Coat.
(8) Echinocereus Englmanni. Very free blooming. Hedgehod Cactus.
(9) Opunta Subulata. Leafy Cactus.
(10) Ferocactus Johnsoni. Devil's Big Toe. Only a devil could possess such a "Toe."

A few African succulents grown alongside cacti make a collection more interesting, but that is a story for another day.

Gladiolus Culture

Planting: Plant as soon as ground may be worked in the spring. Place large bulbs 5 to 6 inches apart, 4 inches deep in rows about 18 to 24 inches apart. When bulbs are placed, fill the rows in with soil.

If planting bulblets, soak for 48 hours in water, then plant in rows and cover with about 2 inches of soil.

Watering and Cultivating: If the soil is dry when the third leaf appears, soak the soil thoroughly once a week. Cultivate for weed control. Shallow cultivation is advisable after vigorous growth has started. An application of a complete fertilizer (2 pounds to 100 feet of row) as soon as bloom spike can be felt is advisable. Do not let fertilizer touch foliage.

Thrip Control: Thrip is the worst insect enemy of Gladiolus. They are very minute, but do irreparable damage if not controlled. As soon as plants are 6 inches high, dust with 5% DDT powder or spray with DDT flower spray, according to directions recommended by the manufacturer.

Cutting Bloom: Most varieties will open well if cut and placed in water after one bloom has opened. Spikes should be cut on a slant with a sharp knife, leaving at least 4 leaves on the plant to mature bulb.

Digging and Curing: Dig 6 to 8 weeks after blooming. All bulbs must be dug before hard frost. When bulbs are dug, cut the foliage just above the bulb at once. Dry in the sun for a short time, about a day; then cure bulbs under a shelter with free circulation of air.

Cleaning and Storage: Two or three weeks after digging, the old bulb should be easily removed. A clean scar will be left. Small bulblets should be removed now and stored in bags or boxes. After bulbs are completely dry, dust them with 5% DDT. Store in trays or paper bags in a room at 40°F. The average basement is satisfactory.

Growing Dahlias for Fun

THE MASTER GARDENER

Other than an important place in perennial borders and beds, dahlias have a definite place of their own . . . grown in gardens by themselves, carefully staked, fed, watered and disbudded with extreme care, they will produce relatively few flowers of overwhelming size and perfection. They have become known as the "Man's Flower."

Modern dahlias offer a vast range of forms and colors with dense masses of dark green foliage that can give a striking yet harmonious garden picture. Today they are grown primarily from the planting of tuberous root sections. However, they can be grown from either seeds or cuttings. Plants produced from seeds will not breed true, but this gives the gardener a chance to develop his own hybrids.

Choosing Soil and Location: Fertile, well-drained soil located in a sunny place is most ideal. Heavy clay and tight soils should be loosened with sand and humus material. Moisture and plant food retaining qualities can be given to sandy soils by adding humus. A liberal feeding of a complete fertilizer, scattered over the ground and spaded into the soil sometime before planting time will increase the general fertility level, thus assuring better plant growth and perfection in bloom.

Planting: Dahlia tubers should not be planted until danger of frost is past. In most sections of the country, late May and early June are preferred planting dates. Space planting so plants will not be closer than 36 inches. Dig planting hole at least 18 inches deep. If soil tends to be soggy during wet seasons, place some gravel in the bottom of the hole to facilitate drainage. Mix about a tablespoonful of a complete fertilizer with the soil left in the lower 10 to 12 inches of the hole. Add loose soil to bring depth level to about 8 inches for setting the tuber. Place tuber firmly in the loose soil with the eye upward. A 5 to 6-foot stake should be placed to the side of the tuber before it is covered. This will eliminate the danger of injury to the tuber and root system by staking when the roots are covered and will also serve as a planting marker.

Growing Care: After plant has developed several sets of leaves, pinch off top to make a strong bushy plant. When about 12 inches high, feed each plant one rounded tablespoonful of complete fertilizer, working it into the soil while cultivating. Tie the plant loosely to the stake with raffia, a band of cloth, or prepared plant ties when it is about 2 feet tall.

Regular and frequent cultivation, stirring the top inch or so of soil, is very important. Cultivate weekly, or as soon as the soil is workable after each rain, from sprouting time until blooming starts. Before blooming, water only when the soil is very dry and then do a thorough job of soaking to a depth of 6 to 8 inches. Avoid light and frequent sprinklings during the growing stage.

Disbudding: If large blooms are to be produced, disbudding is necessary. Buds form in clusters of three. As soon as they can be seen, break off the two side buds, leaving the center bud. When the center bud develops a stem about 6 inches long, other buds will appear at the base of the leaves on the same branch. These are leaf buds and if allowed to develop, they will produce a small bushy effect and imperfect flowers. Only one terminal bud should be left on each branch if large perfect flowers and long stems are wanted. Plants should be gone over about once a week during the growing season with the object of disbudding.

Feeding: To produce the best growth and beauty, feeding is necessary. The plants should be fed 1 rounded tablespoon of a complete fertilizer per plant when about 12 inches tall (6 weeks old). The plant food may be applied either in a shallow trench made some 8 to 10 inches from and around the plant, and then watered in, or applied around the plant on the surface and scratched in with a hoe or rake. In any case, do not get plant food on the plant stalk. Feedings should be made at this same rate every 6 weeks until the buds appear and thereafter feed every 3 weeks.

Insect Control: A dahlia garden can be quickly ruined by insect pests. Here is a place where preventive protection is very worth while. The insecticide DDT gives good control of most of the insects which may be found on dahlias. Even if the plants appear clean and healthy, this program is advisable. Each fall, after the stalks have died, all plant residue should be cleaned up and destroyed to prevent the wintering over of boring and other insects in plant tissues.

Other Suggestions: Mulching with straw or lawn clippings when blooming starts, will conserve moisture, eliminate cultivation, and protect shallow feeding roots. Water frequently during the blooming season. Cut blooms early in the morning or late in evening when covered with dew, with a long slanting cut. Place in cold water and put in basement for 3 or 4 hours before taking into room temperature. Dig roots carefully after killing frost. Leave soil attached and put in dry place for 1 or 2 weeks. Store in dry sand for the winter.

★ ★ ★ ★

Remember to feed those hungry perennials each spring and fall with a complete fertilizer.

Marathon Flowers

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

The Manitoba scene may be made gay and bright from April until late October as citizens make it so by thoughtfully growing herbaceous perennial flowers. The Siberian Squills commence the border parade in April or early May. The floral show curtain falls in late October or early November when the first crisping frost overcomes the ambitious Michaelmas Daisies.

A large portion of perennials usually do only a short sprint as their contribution. These short-time plants are content with a blossoming period of from but a few days to two or three weeks. Comments here take form to pay special homage to some of those valiant other subjects which do a marathon run of many weeks. For the gardeners who have as their home kingdom a small town lot, necessitating flower borders of modest dimensions, the plants noted for their long distance blooming season command much consideration.

Such general favorites as Tulips, Iris, Peonies, Dittany, Pyrethrum, Lupines, Delphiniums and Lilies will continue to win placement in all gardens. However, other perennials deserve even more generous space because they brighten their setting dependably for a relatively much longer period each summer.

The Lythrums or Loosestrifes are leaders. Morden Pink Lythrum commences to display pink flowers on its wands in June and to continue bright until early September. That local variety can afford to persist in blooming because it expends little or no vital energy in the development of seed. Some hybrids of Morden Pink, which is a budsport of Wand Lythrum, crossed with Winged Lythrum, are giving some handsome seedlings featured by clearer rose and reddish hues. Another pleasing variety arising in Manitoba is Dr. F. L. Skinner's Dropmore Purple. Probably no other type of plant in the present nursery trade will provide such sustained distinctive beauty to the borders as the select Lythrums. They are hardy perennials but an occasional adverse season, such as that of 1951 when severe freezing came abruptly at the first of November, may see considerable loss of plants on heavy clay soils. In such instances replanting is scheduled.

Caucasian Scabious bears flowers from July to October. Such prolonged service is highly prized. The plants reach up to 2 or 3 feet. The shapely flattened flowers are usually a powder blue or purplish but some varieties are white.

Flower stems are long, slender, and strong. The flowers are long lasting and useful in building durable bouquets.

Rosyveil Gypsophila is much esteemed. This rather low bushy baby's-breath is furnished with mauvy-pink double flowers from spring until deep autumn. Side branches may be taken to lighten up table decorations. The flower color blends harmoniously with many other shades.

Among the Pinks is the aristocratic Shadow Valley. This Dianthus is a small carnation. The rich-red, double flowers emit the fine spicy perfume associated with Clove Carnations. Blooming season is June steadily through the summer into October. Adverse seasons may cause loss but the plants are readily propagated. In average weather a plant may live a number of years.

Gaillardia or Blanketflower is an example of a beautiful native plant which, although neglected by people living on its native heath, has been enthusiastically embraced by plantsmen in Great Britain. English gardeners have improved the species greatly by cross-breeding. The showy flowers usually have crimson petals marginated with rich yellow. Now varieties are available which are solid yellow, all deep copper, or various admixtures of yellow, orange, bronze, red, crimson, and maroon. Among the named varieties are Wirral Flame, Firebrand, Mrs. Harold Longster, Elsie Kettlewell, Ipswich Beauty, Burgundy, Dazzler, Goblin, and Golden Queen. Flowers continue from mid-June into October. Like other plants, blooms are produced most freely when flower stalks are eliminated at petal fall, thus avoiding the devitalizing process of producing seeds. Because of its spreading form, this 1½ to 2 feet plant is well placed in the forepart of the border. More stately and taller subjects are placed to the rear.

Osark Sundrops, or Missouri Evening Primrose, is another native prairie plant of much merit and long service. It has been called startling because of its rich golden flowers which may be 5 inches across. They are borne upon low trailing plants and are succeeded by very large winged pods. The foliage becomes reddish in autumn. Flowers are continuous, June through September. Its place is forward in the border.

Perry White Achillea is a Sneezewort Yarrow which is very desirable for the perennial border. It brings masses of pure white into the picture. The plants, which may be expected to reach about 18 inches, are upright and shapely. The more common variety, The Pearl, tends to fall apart and the centre of the clump to become unattractive. Both have compact double white flowers. Those on Perry White are the

larger, some measuring 1 inch across. The season is early July until late autumn. The flowers are useful in bouquets.

The Obedientplant, or Physostegia, has numerous common names. Among them are Accommodationflower, Falsedragonhead, American-heather and Mexican-heath. The name accepted here is derived from the tendency of the flowers to remain at any angle to which they are turned on the stem. Here is another native flower of much merit. It grows far north in Manitoba, blooming in July, August, and September. Usually the flower spikes are 3 to 4 feet tall but the popular variety, Vivid, is less than 2 feet. Flower color is rosy pink, lilac or white. Plants should be divided every second year as they spread out rather rapidly. They enjoy moist places whether sunny or shaded. A space of 2 feet is suggested. The spikes, of small snapdragon-like blooms, are well adapted for cut flowers. The Obedientplant is well placed as a mass planting by a pool, along a stream, or to brighten a bay in front of dark green shrubbery.

Orange Sunflower, or Heliopsis, is still another brilliant garden perennial which has come, like the Assiniboines, from the North American prairies. Another common name is Ox Eye but this is not in local favor. Usually in the 3-foot range, the flowers may be single, semi-double, or double and orange-yellow or golden. Numerous large flowers dress the plants for about three months, commencing in July. It likes full sun and plenteous moisture and prefers a loamy, limy soil. As a cut flower it is classed as excellent.

Sea Lavender formerly carried the book name of Statice latifolia, but the rather busy botanists have it now recorded as Limonium latifolia. The common name is Broadleaf Sea Lavender. The 18-inch plant has a whorl of broad leaves at the crown. From this grow thin wiry stems, much branched, and these become arrayed with a cloud of small, soft-tinted flowers from late June through September. Flowers are purplish-blue with white calyx or lavender blue. This light, elegant plant with divided panicles may be cut in early stages to provide dainty winter bouquets. It prefers to remain undisturbed for years. Winter comfort is increased by spreading some brush over the plants in early November.

The above ten plants form a collection of hardy perennial flowers for the border. Two others follow to make up a dozen. They are Iceland Poppy and Johhny-Jump-Up. Although they are notable for the generous amount of bright flowers produced throughout most of the growing season it may be prudent to place them in a nook by themselves. They are free seeders and are likely to be somewhat troublesome in a mixed flower border.

Iceland Poppies, Papaver nudicaule, a native to Arctic regions, enjoys coolish locations. Blooming May into Septem-

ber, it now is available in flesh and scarlet in addition to the type colors of yellow, orange and white. These bright flowers form the border adornment of the Lake Louise summer resort in the Rocky Mountains. Suggestions are that it be set in nooks to the east of shrubberies and be expected to act as a biennial. Volunteer seedlings can be counted upon to replace parent plants.

Johnny-Jump-Ups is a name accorded to several species of Viola, but probably most fittingly to Viola tricolor, an immigrant from Europe which has become a happy resident of many prairie gardens. The flowers, on plants 6 to 12 inches high, are variously colored with yellow, purple and white. This grandparent of our garden Pansies is best treated as a biennial or an annual by sowing seeds in flats in February. Once introduced on the grounds, these bold, brave little plants tend to remain as loyal to the estate as do the introduced house sparrows.

Two further plants merit inclusion here. They are woody, at least at the crown and lower stems. They fit into the picture as both bloom continuously through many weeks of summer. Both were developed by skilled plant breeding by Dr. F. L. Skinner, Dropmore, Manitoba. They are hybrid Clematis and Dropmore Scarlet Trumpet Honeysuckle. Both may be used as single specimens or as a mass in the perennial border. Each may be employed to drape a post or clothe a rock, stump, or lower slope.

Clematis of this group, of which Blue Boy is one, exhibit various shades of blues, purples, and reddish magentas according to the selections chosen. As cut flowers for the table these make a very decorative bouquet. Moreover, they remain fresh for as long as a fortnight. In the garden blooming does not falter until October.

Dropmore Scarlet Trumpet Honeysuckle is a climber or trailing plant which bears orange and scarlet trumpet flowers from June until October. If grown as a clump, it is easily restrained by pruning back the terminals. This variety is of the same species breeding as Brown Honeysuckle but significantly more hardy as the hirsuta parent was a native from Northern Minnesota.

Further interest in the perennial border may be gained by allotting a small space here and there to some dwarf evergreens. Worthy of consideration are Rose Daphne, Canby Pachistima, Thyme, Dwarf Euonymus, Scandia and Arcadia Junipers, and Tom Thumb Arbovitae.

Some mention has been made of the value as cut flowers of some plants approved for the perennial border. However, it is unfair to rob heavily any component border plant. Flowers

for bouquet making, rightfully come from plants grown in the rear garden for the purpose.

The successful steward of a border is prompt to remove spent flower stems. Plants are tended so that they do not unduly crowd each other. Unthrifty plants are stimulated by feeding and periodic thorough watering. The border is given a general grooming from time to time. When the perennial border is composed of plants of sustained interest due to their continuous blooming over a period of ten or more weeks of each successive prairie summer, the gardener has achieved greatly. They who do the actual work in the garden harvest its maximum enjoyment.

The Exhibition Rock Garden

Wm. J. TANNER

The Kinsmen Club of Winnipeg staged a very successful Exhibition in the Amphitheatre Rink and the adjoining Stadium grounds from June 14 to the 21st, 1952. Some time previous to this, officers of the Kinsmen Club contacted the Board of Parks and Recreation and the Winnipeg Horticultural Society with a view to staging a Peony Show or similar attraction at the Exhibition. Mr. T. R. Hodgson, Superintendent of the Board of Parks and Recreation, attended a meeting of your Directors on May 13, 1952, and presented an outline of the request of the Kinsmen Club. A committee was appointed to meet with the officers of the Kinsmen Club, and after several meetings the idea of a Peony Show was discarded for various reasons. In its place, we were allowed a corner lot in the Stadium Grounds, about 20 feet by 20 feet, to build a Rock Garden.

On Friday evening, June 13, a number of your Directors turned out at the Stadium and with members of the Board of Parks and Recreation soon had set up a very nice Rock Garden complete with a pool. This was accomplished under the capable direction of Mr. R. C. Pragnell and Mr. C. Plegdrup to whom most of the credit for the actual construction of the Rock Garden was due. Mr. Hodgson very kindly loaned a statue "The Boy with the Boot" from the duck pond at Assiniboine Park, together with a pump to keep the water flowing through the boot. (The Boy with the Boot has since been set up in a similar position in a Rock Garden in Assiniboine Park.)

Efforts were made to secure suitable plants for the Rock Garden from Manitoba Growers, but few were available and with very short time to spare letters were writtten to two growers in British Columbia, the Alpenglow Gardens, R.R. 10, New Westminster and the Rockhome Gardens, R.R. 4, Victoria. Within a few days a box of very fine plants was received gratis from each of these growers and these plants together with other materials supplied by the Board of Parks and Recreation, made up a very fine Rock Garden. At least one of your directors was on hand at all times the Exhibition was open to answer questions. Many very favorable comments were heard from visitors to the Exhibition. Total cost of the Rock Garden to your society was slightly less than ten dollars, mostly for rock and earth.

I would like to take this opportunity of expressing my sincere thanks to all those directors and others who assisted in this project and also to Mr. Hodgson and his staff for their very valuable assistance in making this Rock Garden a success.

Observations on Rock Gardens

G. S. REYCRAFT

There are many rock gardens in the Winnipeg area that are a joy to the eye and pride to its originator. But with the increasing interest in the type of garden many neophytes end up with a rock pile instead of a garden. It is because of these rock piles that I wish to make these observations.

Before building a rock garden, no matter how unpretentious, go and look at some prize winning rock gardens and talk to their owners. The names of the winners of the Winnipeg Horticultural Society Rock Garden's competition for 1952 are shown in the report on Home Grounds Competition. Also look around the next time you are in the country, and observe how nature has built her rock gardens. You will notice that nature never places stones on end or places them at regular intervals. A good rule of thumb to follow in building a rock garden is to remember that whatever looks artificial is wrong.

A successful rock garden can be made almost anywhere except in dense shade or on low marshy ground. It can be any size. Choose a sunny location and make it look as natural as possible. A suitable slope or bank is helpful but not essential for even on a flat lawn, if you use care in building it, you can give it a natural appearance. Although you can build in the center of a flat lawn it is better located at the edge of the lawn with a background of shrubs or small trees where it is easier to build a more natural setting.

Please remember in building a rockery, the purpose is not to display a collection of curious rocks fantastically arranged but for growing a class of plants that cannot be so well grown elsewhere.

Make your rock garden a natural setting, let yours be a rock garden, not a rock pile.

★ ★ ★ ★

Good quality tools kept clean and sharp make gardening more fun.

★ ★ ★ ★

Good gardeners make up their minds to work with nature by paying a little attention to the plants' preferences.

Dish Gardens

T. YAGER

Dish gardens or small plant arrangements seem to have become a very popular fad in recent years. Greenhousemen and florists have had tremendous demand for tiny plants suited to such culture. It is possible now to buy collections of small cactus and succulent plants that fit in such a miniature garden scene.

The containers used for these gardens are as varied as plants used in them. Low, flat containers adapt themselves well in the development of this kind of garden. They may be clay, porcelain or of metal ware. Containers may be square, round, oval, rectangular, or even irregular in outline.

This type of garden is much easier to handle if provision is made for good drainage. If drainage holes already exist or can be made in the bottom of the container, it offers the best solution to this problem. In addition, lining the bottom of the container with coarse sand, broken flower pot, or other similar material is suggested. The upper portion is filled with a regular potting soil mixture. If the garden consists mainly of cactus and succulent plants a mixture of equal parts of coarse sand and good garden soil is suggested. For other plant types, a mixture of three (3) parts garden loam, one (1) part manure or peat and one (1) part sand is advised.

It is well to have a theme or idea in mind when laying out the small dish garden. The garden in miniature may represent a desert garden, a woodland, a Japanese garden, a tropical garden or any other idea that comes to mind. With this goal to work for, one can proceed with securing plants and accessories in keeping with the theme. If no definite theme is worked out, the garden may look like a hodge-podge mess.

The use of tiny accessories help to carry out the theme you have in mind. The use of mirrors help to represent a lake, river or stream. Tiny bridges, houses and a hundred and one accessories help to carry out ideas. The plant materials used should be the dominant material used in the scene. An accessory, or even an unusual plant may be used as the center of interest or focal point in the garden. From an artistic standpoint this should not be placed directly in the center of the garden but over to one side, and the plant material added should be used in such a way to give proper balance to the scene.

The entire garden should show good scale. An oversized plant, or an accessory that looks too big for the garden will throw everything out of balance. The use of too many

accessories or too many plants can make the whole effort look too heavy — use restraint in developing the garden and don't make it look crowded or overdone.

A rather important point is not to mix plants that belong to diversified plant types. A garden that contains both cacti and ferns doesn't look right, because it neither represents a cactus garden nor a woodlands garden.

Plants that can be used in dish gardens are legion in number. The only limitations are the use of plants that grow slowly and will thrive under conditions as represented in the home where they grow. There are dozens of species of tiny cactus and succulent plants that lend themselves well to such culture. Oprentia and Mamillovia cactus are useful; among the succulent are Echeverias, Alves, Crassulas, Kalanchoes and many others. Bromeliads also offer many possibilities.

For the woodland gardens, one can use many kinds and types in keeping with this type of scene. Tiny begonias, ferns, club mosses, philodendrons, lichens, African violets are only a few suggestions for plants for this type of garden.

The plants grown in rock gardens offer plenty of material for dish garden use. Tiny Phlox, Drabas, Orsbas, Sempervivums, Antennarias, Sedums, Thymes are only a few of the many rock garden species that could be used.

There is no end to the possibilities in developing these dish gardens of miniature plants. The important thing is to think of an idea, gather suitable mixture plant material and accessories, and work them into the idea you have in mind using good design, principles and you should have no trouble in developing an attractive small scale garden that will please the hearts of many.

Trees and Shrubs Around the Home

PROF. E. T. ANDERSEN,
University of Manitoba

This article is intended to be a continuation of the story begun in the 1952 issue of the Winnipeg Flower Garden, entitled "Plan and Plant Your Own Home Grounds." The writer presumes that the reader has perused the above mentioned article, inadequate as it is, and that he has gained some of the principles of home grounds planning from it. If this proves to be an unfair presumption, it is suggested that the reader make reference to the 1952 article in order that the suggestions which follow may be more easily interpreted.

This discussion will deal mostly with the practices of selecting and locating ornamental trees and shrubs around the home. Probably, the most difficult task facing the home owner, in his attempt at landscaping, is the selection of shrubs for certain locations. To the amateur it can be very bewildering because most nursery catalogs list a great many different shrubs and trees all of which are generally described as excellent or good. However disturbing this may be, it is nevertheless fortunate that there are many different types to choose from, as this means that only the best need be used and that much variety and interest can be developed through varied plant material.

As an aid to home owners and to simplify their choice of plants, the Manitoba Horticultural Association prepares yearly, for publication, a "Recommended Horticultural Varieties List." As one feature, this list includes a limited selection of trees and shrubs; those considered best adapted to Manitoba. These lists are available through the Extension Service of the Provincial Department of Agriculture and are an invaluable reference. Brief consideration will be given to some of the main shrubs included in this list and the reasons why they are suited to different uses in the landscapes.

Foundation Planting

Shrubs for foundation planting (near the buildings) should have an orderly, neat habit of growth, should not become oversize or leggy, and should have a long season in foliage. This means they should not spread from root suckers or grow rampant and coarse; they should not be subject to serious insect or disease damage and they should carry their leaves

into late fall or, better still, be evergreen in nature. They need not be good flowering shrubs, but flowering shrubs which have the required attributes of form, foliage and habit are quite suitable, often desirable. Shrubs for corner planting should be quite large and dominant compared to the other foundation plants. Mature heights of shrubs for this location may range from about 5½ to 8 feet depending on the size and type of house. Large, tall houses will naturally require taller shrub types to obtain good balance between house and plantings than smaller or lower houses. Suitable shrubs, 6-8 feet in height, are Highbush cranberry or Pembina (Viburnum trilobum), Redtwig dogwood (Cornus stolonifera) and Carleton honeysuckle (a variety of Lonicera tatarica). The only evergreen which performs well at about this size is the Mugho pine. Slightly smaller shrubs somewhat better suited to low bungalow type houses are Sharpleaf cotoneaster (Cotoneaster acutifolia), Altai rose, Betty Bland rose, and globe forms of Thuja or Arborvitae (Thuja occidentalis).

Large Shrubs for Foundation or Other Use

The Highbush cranberry has one rather troublesome fault. It is susceptible to heavy infestations of aphids or plant lice, which cause rolling and distortion of the leaves and general unsightliness. The foliage, otherwise, is attractive and colors well in fall. The white flower clusters followed by bright red fruits are added values. Redtwig dogwood makes an orderly shrub up to seven feet high and 8 or 9 feet across. The older stems should be removed so that no stems are more than 3 or 4 years old. The young stems are highly colored, the old stems become grey and unattractive.

Carleton honeysuckle is similar in appearance to the common bush or Tatarian honeysuckle, but is smaller and slower in development, extremely floriferous, with bright pinkish red flowers followed by red fruits. One of best shrubs in this size class.

The Mugho or Swiss Mountain Pine in general will tolerate Manitoba conditions better than other evergreen shrubs. Although the species type will grow up to 15 or 20 feet in height, it may be kept low and compact by pinching out the leading bud growths in spring. A north or east exposure usually proves best.

Medium Sized Shrubs for Foundation Use

Sharpleaf Cotoneaster is an excellent foliage shrub; always hardy and of neat habit. Tops for foundation or hedging plant purposes. For exposed and difficult locations, Altai rose is exceptional. It also is outstanding when in bloom, almost entirely covering itself with cream colored single, attractive

flowers. The Betty Bland rose is also excellent up to about 6 feet in height. It produces a neat, upright shrub and large quantities of double pink flowers about 3" in diameter.

Probably the best evergreens in this slightly smaller class are the Mugho pine (trained closely or dwarf varieties) and globe forms of Thuja or arborvitae. Wareana and Hoveyi are two popular globe formed varieties of Thuja. These, like all the evergreens, perform best when shielded from the south and west sun and wind.

Shrubs next in size to those of the corner plantings are those planted on either side of the entrance-way. Taller houses may use the smaller ones of the group just discussed, for this purpose. Suitable foundation plants of slightly smaller stature are Sweetberry honeysuckle (Lonicera caerulea edulis), Siberian currant, Korean spirea, threelobe spirea, cherry prinsepia, and Hansa rose.

Sweetberry honeysuckle and Siberian currant produce neat foliage plants up to 4½ or 5 feet high. Deserve wider use as foundation plants. They are subject to very few troubles.

The spireas are a very large group of flowering shrubs some of which are shapely and attractive enough to use as foundation plants. Two of the most satisfactory are named above. The Korean spirea (S. trichocarpa) grows to about 5½ feet in height and in habit is much like the more common Van Houtei. Threelobe spirea produces a neat rounded shrub to about four feet in height. Both are hardy.

Cherry prinsepia is a fairly recent introduction from Manchuria. It produces a broad shrub with arching branches to a height of 4 or 5 feet. The leaves are pale green; the plant compact. The small yellow flowers are followed by red berries. A fully hardy and useful shrub.

Hansa rose is a hardy shrub to about 4½ feet. The foliage is a handsome deep green and double red flowers are produced over a long period.

Low Growing Types

For planting under low windows, or for facing off tall or leggy shrubs, low growing types are very useful. A few of the best in this class are Pygmy caragana, Russian almond, Sabin and Common juniper. The two former are very hardy and will survive almost anywhere. Russian almond is a striking spring flowering shrub in bright pink. Prone to suckering, but this fault is less pronounced in improved strains. The junipers, although very attractive when in a favoured location, frequently suffer damage in south or west exposures or in poorly drained spots. Note location on north side of house in plan, Fig. 1.

Border or Boundary Plantings

The purpose of these plantings is to provide background and framing for the picture, to tie it together into a harmonious

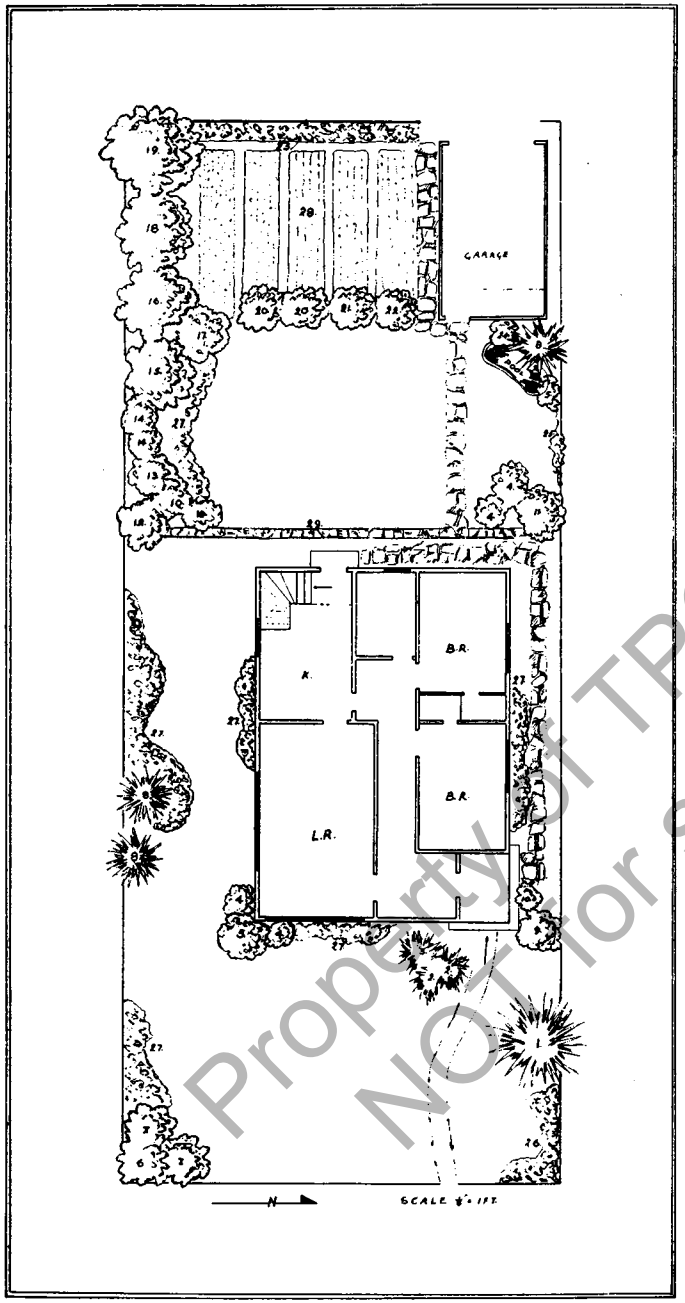


Fig. 1. Planting plan suggested for town home property, 50 x 120 feet.

1. Colorado blue spruce ..... Picea pungens
2. Sabin juniper ..... Juniperus sabina
3. Ware's arborvitae ..... Thuja occidentalis variety
4. Threelobe spirea ..... Spiraea trilobata
5. Sharpleaf cotoneaster ..... Cotoneaster acutifolia
6. Altai rose ..... Rosa spinossissima altaica
7. Hansa rose ..... Rosa rugosa hybrid
8. Mugho pine ..... Pinus mugo mughus
9. Sweetberry honeysuckle ..... Lonicera caerulea edulis
10. Russian almond ..... Prunus tenella (nana)
11. Korean spirea ..... Spirea trichocarpa
12. Carleton honeysuckle ..... Lonicera tatarica variety
13. Charles Joly lilac ..... Syringa vulgaris variety
14. Betty Bland rose ..... Rosa blanda variety
15. Dolgo crab apple ..... Malus species, variety
16. Rescue crab apple ..... Malus species, variety
17. Opata plum ..... Prunus species, variety
18. Pembina plum ..... Prunus species, variety
19. Weeping birch ..... Betula pendula laciniata
20. Kerry black currant ..... Ribes species, variety Kerry
21. Pixwell gooseberry ..... Grossularia species, var. Pixwell
22. Diploma red currant ..... Ribes species, variety Diploma
23. Chief red raspberry ..... Rubus species, variety Chief.
24. Red Osier dogwood ..... Cornus stolonifera
25. Wild grape (on trellis) ..... Vitis vulpina
26. Peony bed (seven plants)
27. Mixed flower borders
28. Vegetable garden
29. Low stone wall.

KEY TO PLANT MATERIALS USED IN FIG. 1

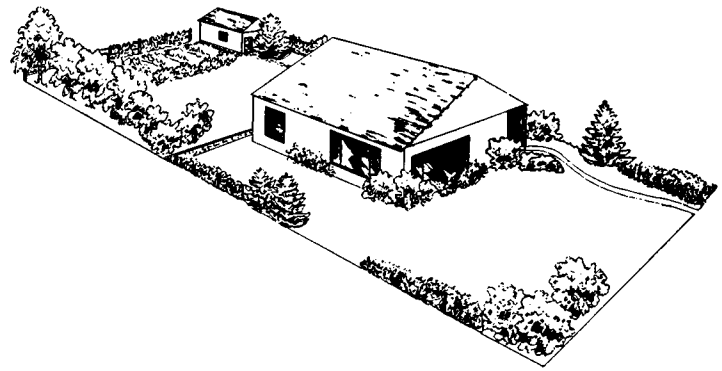


Fig. 2. Elevated perspective of suggested plan shown in Fig. 1. Drawings by Stephan Maslo.

unit, and to provide privacy for outdoor living with the confines of the garden. For this purpose, relatively large and fast growing shrubs or small trees are generally used. They should be tough, hardy and wind tolerant. In addition to the above features, they also serve to provide shelter for more tender plants growing in the garden area — such as flowers, other flowering shrubs, or fruits. They may, themselves, be highly attractive and interesting.

Shrubs mentioned in connection with foundation planting may also serve as boundary plants. In addition, many which tend to grow large and coarse may be used. Various types of lilacs are well suited. The common lilac including named varieties, Chinese lilac (Syringa villosa), the Preston hybrids, and the Amur or Japanese lilac, all have a place. The latter species is the largest reaching 20 or more feet in height and requiring considerably more space than the others. Amur maple (Acer ginnala), Russian olive (Elaeagnus augustifolia), Redtwig dogwood, Tatarian honeysuckle, and Flowering plum (Prunus triloba), are all highly suited to this use. As hardiness and vigour are two of the main requirements for shrubs used in the border plantings, the number of different ones available is very large. Use of several different kinds will give a natural type of background and add interest, but too much variety may be disturbing.

Specimen or Interest Plants

Another class in which there is always much interest is the specimen, accent or novelty type of plant. These are used to draw attention to certain features of the landscape or architecture, or to add variety, interest or color to the surroundings. To be effective in this way they must, therefore, have some outstanding feature which makes them attractive as individuals. They may be striking flowering shrubs such as the double flowering plum, bush roses and lilacs; or they may be interesting for their form and grace such as the weeping birch and weeping willow; or foliage color may be striking such as is the case with the blue forms of Colorado spruce, the silvery leaved shrubs such as the Russian olive, the red or purple leaved plants like the Strathmore crab and the Shubert chokecherry; or colorful fruits or seeds may make them particularly appealing as with the mountain ash, highbush cranberry, and hardy crab apples like the Siberian, Dolgo and Rescue. In many cases this latter group has the added appeal of a show of bloom in spring or early summer. Such plants should be carefully selected and arranged. Too many interest or focal points will tend to disrupt the picture as a whole and produce disharmony. The basic principle, that the house is the centre of attraction, should be kept in mind at all times. How, then, should they be used? In general, the

best place is as part of the border or boundary planting where a little emphasis will help to accentuate a garden feature such as a flower bed, a bird bath, or a garden seat; or they may provide the focal attraction at the end of a vista or view as seen either from the windows of the house or from the street in front. Note location of the Dolgo crab in the plan (Fig. 1). The Colorado blue spruce in the diagrams serves to attract the eye to the picture as a whole and then by helping to frame the house draws attention to it as the central feature.

It is not easy to give a useful appraisal of specimen or interest plants because their value is largely determined by personal preferences for certain features, which will vary greatly with individuals. A few comments on some of those mentioned may be of help in selecting and locating these to best advantage.

Colorado spruce, particularly the selected forms like Koster and Morden, is excellent as a large growing exotic evergreen tree. Care in locating such a tree is important as they require much space. They should be a minimum distance of 15 feet from buildings and 8 feet from walks. Cutting back branches tends to open up the foliage cover and spoil their natural beauty. Avoid the necessity of this by giving them sufficient space at planting time. Do not plant right in front of the house. Use either to the side or back.

Weeping birch makes a strikingly graceful tree — both summer and winter. They require much space for best effects and should not have to compete with other trees. The yellow-bellied sapsucker (a small bird similar to a woodpecker) may seriously injure birch trees by pecking holes in the bark. Weeping willow is not generally hardy in Winnipeg.

Small trees like the hardy varieties of crab apples, Siberian crab and Rosybloom crab apples, are some of the most useful because they can be grown as part of the border or boundary planting and blend well with other shrubs. Japanese and other lilacs are similarly adapted. Mountain ash is very attractive, but subject to yellowing or chlorosis in our high lime soils. In many cases it is necessary to supply iron to the plants to keep them healthy and attractive.

The bush roses are particularly effective if planted in small groups, as are most relatively small growing flowering shrubs. Two such groups are included in the accompanying plan; one of bush roses and one of spireas. The double or single flowering plum (Prunus triloba) is one of the most striking shrubs when in bloom, but as it has a relatively short blooming period and it has little interest value after the bloom-

ing season, in most cases the best location is along with the foundation plantings (for example a corner shrub) or as part of the border planting.

Shade Trees

There is little room for large shade trees on the average small property. Trees like the American elm may sometimes be located near the corners of the property either at the back or the front and provide both framing for the picture and shade. In general, it is more desirable to use smaller trees for this purpose. These can be located to better advantage near where shade is desired and at the same time be part of the border planting. The Dolgo crab tree would provide shade in the development shown in the diagrams.

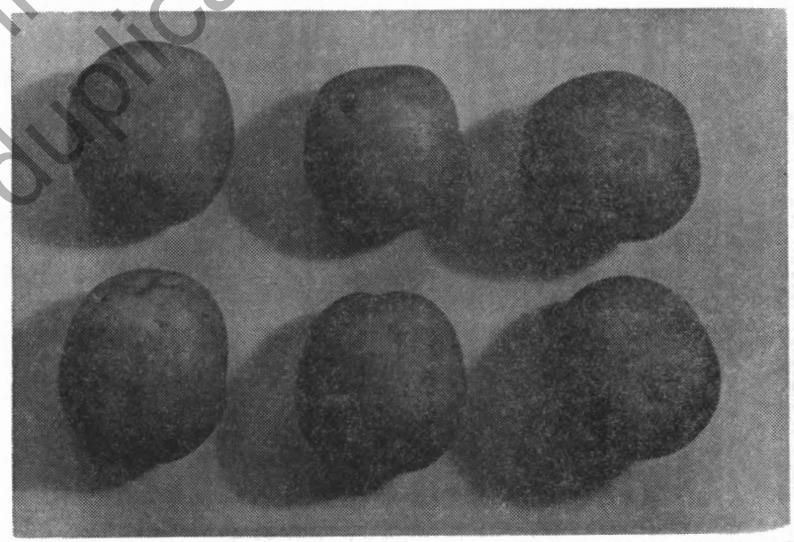
In conclusion, it must be pointed out that the shrubs and trees mentioned in this review are only a few of those which may be used. An attempt has been made to refer to plants which are suitable to Winnipeg conditions. Many others might prove equally satisfactory and in some cases better. It is hoped that the suggestions made can serve as a guide and that from them a home owner may proceed with his own planning and planting so that unfortunate mistakes may be avoided. The diagrams are provided to suggest how a plan may be drawn and to help show the general scheme and effects obtainable as suggested in the article. As each home is a problem by itself, these diagrams can only be used as a guide.

"Manota" Potatoes

N. SANDAR
Potato Specialist, Manitoba Dept. of Agriculture

Manota resulted from a cross made in North Dakota in 1938. In 1945 it was received by the University of Manitoba as "North Dakota Seedling 134-19." It was tested widely in Manitoba and, to a lesser extent in other provinces of Canada, through the National Potato Tests.

Manota has proved to be very well adapted to soil types and climatic conditions in Manitoba. It is a fast growing variety of mid-season maturity comparable to Irish Cobbler. The stems are vigorous, thick and grow taller than the Irish Cobbler. It has good yielding ability, producing an average



"Typical tubers of Manota variety showing side, seed end, and stem end views."

of about 8 tubers per hill. In some cases in 1952 as many as 22 marketable tubers were dug per hill. Based on a 6-year average at Fort Garry, Manota outyielded Irish Cobbler by about 20 bushels per acre.

Manota tubers are smooth, shallow eyed, with creamy white skin and very white flesh. Flesh remains white after cooking. Cooking tests show Manota quality to be good. It rates very well for boiling, at the same time is dry enough to make an attractive baking potato.

Manota is susceptible to the common potato diseases such as virus diseases, late blight, early blight, common scab and bacterial ring rot, but the same applies to most of the varieties now grown in Manitoba. However, hollow heart has rarely

been found in Manota, while Irish Cobbler, grown under the same conditions, has had a high percentage. The storage quality of Manota is considered very good.

In Manitoba most of the commercial production of potatoes centres on the heavy soils of the Red River Valley. The Pontiac variety is the only one which shows any particular adaptability but is late in maturity and in most seasons has poor cooking qualities. Irish Cobbler and Canus, of midseason maturity, have serious faults. Although Manota has no specific resistance to disease, it has some outstanding characters which are: (1) Very attractive appearance; (2) Good cooking qualities; (2) Adaptability to heavy soils; (4) Relative resistance to hollow heart; (5) Good yielding ability; (6) Good storage qualities, and (7) Midseason maturity. These characters rate it high, and it is felt that Manota will fill a definite need in the potato industry in Manitoba.

It is unfortunate that no Manota seed will be available to home growers and table stock growers for the 1953 planting. There is a total of 350 bushels of Certified seed but all this will be restricted to seed growers for further increase. It is hoped that this stock will be increased sufficiently, so that no restrictions will be necessary on its distribution in the fall of 1953.

Pruning Hints

F. J. WEIR
Provincial Horticulturist, Manitoba Dept. of Agriculture

Pruning a shrub or tree acts as a stimulus, in that it encourages dense growth. When pruning is done to control plant growth, it has to be done very carefully, otherwise it is better to leave the shrub alone. In some cases, root pruning might be practised in order to keep a shrub or tree "in bounds."

Fall pruning is not advised, except for the removal of any diseased or damaged branches which should be done whenever noticed.

Shrubs which bloom early in the spring should be pruned immediately after blooming.

Generally, shrubs which bloom in late spring or summer should be pruned in late winter or early in spring before growth starts. This is the best time for pruning as the form of the shrub can be seen readily. In any spot where two branches are rubbing each other, it is wise to remove one. A reasonably open structure is desired, but the practice of pruning for the sake of exercise should be discouraged. Frequently our severe winter weather does sufficient pruning by tip-killing.

The natural form of the shrub or tree is the best. If it is felt necessary to remove some branches to control height or spread, the pruning project can be extended over a number of years so that one-third or one-quarter of the branches are removed each year. In this way, a "beheaded" appearance will be avoided.

When transplanting shrubs or trees, except evergreens, pruning is a "must." Whenever a shrub is disturbed, many of its hair roots are broken. To balance up the ratio of leaf and branch surface to root surface, rather severe cutting back should be done. For most shrubs and fruit trees, cutting back about one-third of the top growth is advised, unless there is evidence that this had already been done by the nurseryman.

Any pruning project on the prairies should be studied carefully before any cutting is done. Haphazard pruning is apt to do more harm than good.

Flowers and Gardens the World Over

GLADYS MATCHETT

The following notes on flowers and where they have come from, some of their uses through the ages, and other interesting facts are taken from an excellent article written for the National Geographic Magazine, July, 1947, by W. H. Camp, New York Botanical Gardens. It is hoped that these notes will enrich our gardening knowledge.

It may be surprising to learn that, with the beginning of cultivation, many plants presently considered as ornamentals were used as food. These include the tulip, hyacinth, and narcissus, which were cultivated as bulbous crops, along with the onion and garlic. Before the advent of maize into Mexico, dahlias were the source of starch and were used as such until the potato was introduced into that country by the Spaniards. The rootstocks and seeds of the water lily (called East India lotus even to-day) are common items in Chinese groceries in our larger cities. In medieval Europe, violets and primroses were served as salads or "sallets" as this dish was then called. Many plants, no longer used as food, were cultivated for their beauty. The dahlia is such a plant. Some plants were grown in herb gardens for their medicinal value. These included the foxglove used for heart ailments, the sweet scabious for the itch, the aconite or monkshood and the elecampane for tonics. One form of the present day pyrethrum was grown and used as a source of insecticide. The Orris root (a corruption of "iris") was used as a dusting powder after baths. Many other flowers came into the garden as sources of perfumes and toilet waters. Saponaria or soapwort was used as a soap.

Wanderings of Plants

The wanderings of plants would make interesting reading. The African Calla, the southern European Iris, and the northern European Pansy are native to the higher altitudes of the Andes. This shows the influence of the early Spanish explorers. The Cherokee Rose found in the southeastern part of the United States and the Peach grown by the Indians in Pennsylvania came from China.

Ornamental Gardening

Awareness of beauty in cultivated gardens is related by the Assyrian king, Sennacherib, who sent many expeditions to distant lands to obtain plants. His use of extensive, though primitive irrigation systems, and the many garden pools added to the beauty of the gardens. After the Assyrian Empire ad-

vanced into Egypt, the formal garden was introduced into the Mesopotamian garden center. The hanging garden of Nebuchadnezzar was the ornamental garden built on terraces and hillsides. The influence of the early gardens extended and influenced to some extent the gardens of the Persian, the Greek, and the Roman civilization.

The miniature garden of China was the poor man's copy of the royal gardens. The formal gardens of Versailles and of Holland continued this influence. The English developed another type of formal garden, later to be copied in colonial America. The informal garden was brought to North Africa by the Moslems and its influence was later exhibited in Spain. The styling of the present day English garden has its remote source in China. Pools, springs, and patios are often features of the informal garden. The latest development in informal gardens is seen at its best in California and Mexico.

Other Garden Interests

Also of interest to flower lovers would be the story of potted plants, rock garden plants, the adventures of plant explorers and plant hybridizers, and the beauty of the early American gardens. The limits of space demand, instead, only the inclusion of the origin of some common garden friends. Choosing flowers for comment proves difficult when we learn that 25,000 species of plants are now cultivated. More than 10,000 of these are cherished for their ornamental value and thousands more are common to the gardeners.

Sources of Some Familiar Flowers

The medieval European garden had the Pot Marigold, Bellflower, Daisy, Pansy (from the French "pensée"), Primrose and the Rose. European languages and folklore account for the names Foxglove, Stock or Gilliflower, Wallflower, and Sweet Scabious.

Changes in climatic conditions demanded storage mechanisms within the plants to tide them over unfavorable seasons. Plants producing bulbs have solved this problem. Of these, the Spring Crocus, the Snakeshead or Checkered Lily (**Fritillaria meleagris**), and the Snowdrop are examples. In the Mediterranean region the Grape Hyacinth, the Star of Bethlehem, the Common Hyacinth, the Oleander, the Snapdragon and the Candytuft have survived the downfalls of several civilizations.

About fifty wild species of the tulip are found in the area between the Mediterranean and Asia. The early Turkish gardeners did excellent work in hybridizing tulips. Bulbs and seeds were brought to Vienna in 1554. Later, a fine collection of tulips was introduced to Holland by Clusius, a Dutch herbalist. This may be considered the beginning of a new industry.

Because the Koran forbade images, the Persian garden was not cluttered with statues. The garden, due to the necessity of an irrigation system, was symmetric in form and usually centered by a well or water storage pool. The influences of these designs have been well portrayed in some early Persian carpets.

The influence of plants from South Africa dates back to 1652 when Dutch gardeners began a garden project to provide fresh fruit and vegetables for the crews of ships that made landings at Table Bay. Native plants were cultivated and by 1700 some of these reached Holland. These plants included the Calla (Arum family), the Bird of Paradise, Impatiens, Poker Plant, Gerbera, Cape Marigold, Lobelia, Castor Oil plant. Most of the 250 species of Pelargonium are native to South Africa. Of the 200 species of Gladiolus that are native to Africa, few resemble the types grown in the present day gardens. The African violet is another welcome guest.

From China came the Regal Lily, Peony, Camellia, Hollyhock, China Aster, Chrysanthemum, Clematis and Forsythia. From Japan came the Wisteria, Bleeding Heart, Japanese Iris, and the Azalea. The Strawflower, Swan River Daisy, and the Blue Lace-flower came from Australia. The Eucalyptus tree, which is widely grown in California and Florida, also came from that continent. South America was home for the Fuchsia, Petunia, Cup-flower, Garden Verbena, Scarlet Sage, Spider Flower, Morning Glory, Nasturtium, and Canna. From Mexico came the Dahlia, Cosmos, Zinnia, the Marigolds, Poinsettia, Frangipani. Some of the North American plants are the Clarkia, California Poppy, Blanket Flower, Lupine, Oswego Tea, Wild Bergamot, Summer Perennial Phlox, and Michaelmas Daisies.

These notes should serve to lead us to a greater study of the sources of these and other beautiful flowers.

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REMEMBER that plants cannot grow beyond the soil's ability to provide all of the elements needed by the plants and that the elements in shortest supply in relation to crop needs would become the limiting factor in plant growth and production.

★ ★ ★ ★

Trees need feeding too — Few people realize how much the beauty and health of a tree is enhanced by regular feeding. After all, a tree is just a large plant and will respond to the lack or abundance of plant food nutrients the same as other plants.

This Flower Show Business

Wm. J. TANNER

For the past few years it has been my privilege to act as Chairman of the Flower Show Committee, and during every show I have received many favourable comments from visitors, all of which are very much appreciated. I have also had a number of comments which were not so favourable about various matters, and strange as it may seem, these are much appreciated also, as this helps your Committee considerably when drawing up the prize lists for the following show. No matter how carefully the prize list is gone over each year there is always some misunderstanding or misinterpretation of some of the rules and regulations, and it is your comments which help us correct these misunderstandings where possible.

Judges have a very difficult task in selecting prize winners and the question is often asked "Why did this entry get first prize when this one (which perhaps looks nicer) didn't get any?" Only the judge who awarded the prize could answer that question, and as they are usually very busy people, it is impossible for them to be on hand during all the time the show is open. The purpose of this article is to try to explain some of the things a judge looks for in the hope that it will be of some assistance to those who very kindly take the time and trouble to enter their products in our annual show. Some judges may be very strict and disqualify any entry which does not completely adhere to the rules governing the class in which the entry is made. Another judge might overlook a small technical point, such as a wrong container, if the entry was, in his or her opinion, the best on display. It would be much better for all concerned if every exhibitor would make sure that his or her entry is in the correct class, and has the correct number of stems, blooms, carrots, or apples, or whatever is called for in the prize list.

Quality is generally the first consideration of the judge. Flowers should be picked on the day they are entered in the show, and after cutting should be kept in water in a cool basement. It is advisable to always have a few extra blooms, because no matter how careful one is, it often happens that some damage results from handling or transportation, and the extra blooms are necessary in order that the correct number of perfect specimens can be entered. Each flower in a class should be as nearly as possible the same size, too much difference in size will often lessen the chance of winning a prize. Colour is also a very important consideration. Unless a class definitely calls for mixed colours an entry of say six blooms

all of the same colour will usually receive more consideration from the judge than six equally good blooms of mixed colours. Space does not permit going into each separate class of a prize list, but the foregoing remarks will apply to practically all classes in cut flowers. In the table centre and side-board arrangements, there is such a difference of opinion, even among judges, that I am not going to attempt to make any suggestions, except that the exhibitor should make sure that his or her exhibit is entered in the proper class. Baskets should not be overcrowded and should be so arranged that as little of the handle as possible is visible. Choose your basket according to the size of the flowers, in other words, don't crowd a lot of large flowers into a small basket, or small flowers into a large basket. In baskets where different sized flowers are used, the larger and heavier flowers should be kept toward the lower centre and the smaller flowers built evenly around them, this will give the exhibit balance, which is very necessary in any good basket.

In nearly all classes of vegetables, extra large sizes seldom win ribbons, as they are usually inclined to be coarse. Here again quality is the first consideration, and those that are perhaps just slightly larger than the average should be chosen. Wherever a class consists of five or any other number, these should be all as nearly as possible the same size. In a class say, of five carrots, four good sized ones, and a smaller one would usually count less than an entry of five slightly smaller ones of equal quality but all the same size. Colour is also an important factor, particularly in the case of tomatoes. Where green tomatoes are called for, they should be definitely green, and in a case of red ones they should be all definitely red, and as near as possible the same shade of red. With onions, the larger ones will most likely be the ones to receive the awards. As in the case of flowers, vegetables should not be prepared too far in advance, and should be handled as little as possible. A sprinkling of cold water will help them keep their freshness.

The same rules governing vegetables apply to fruits. An exhibitor should be careful that the correct number called for in a class is shown. They should all be uniform in size, shape and colour, free from blemish, firm and mature, but not overripe. Apples and crab apples should have their stems left on, and may be polished with a soft cloth. Here again excessive handling should be avoided, especially in the case of plums and cherries of all descriptions. These should not be wiped off, but should retain their natural bloom. Plums, cherries, and other stone fruits are generally shown without stems.

Exhibitors could help a great deal, if, when setting up exhibits, they would put the variety name on their entry

card. Time and time again the question is asked "What is the name of this variety?" and your Flower Show Committee, not being professional experts, often have to regretfully shake their head and say, "I'm sorry but I don't know." This little extra task on the part of the exhibitors would be a big help to the many visitors to our show, who, when they see something they would like to have, can tell at a glance what it is.

We have many members in our society who grow very excellent flowers, fruits and vegetables, but who do not enter any of them in our show. I would like to urge these members to look over their gardens at show time, and I have no doubt they could find many items which would stand a good chance of winning ribbons. Even if you don't succeed the first time it would help to build up our show, and I believe that after it is over, you would feel that the effort was well worth while.

Try it, won't you?

Baby said

When she smelled the rose,

"Oh! what a pity

I've only one nose!"

Laura Richards

* * *

Rural Club Flower Shows

MRS. B. C. GOODHAND, Dauphin

Flower shows, as part of the summer activities of Ladies' Clubs in rural areas, are somewhat unusual, and, to my mind, so worthwhile, that I'd like to tell you of two such clubs in the Dauphin area.

There are a dozen or more active clubs about, and all take part in the Dauphin Horticultural Show and in the summer fairs, either in club displays or as individuals. In fact, year before last, one fifth of the Horticultural Society's membership was rural women.

But the only two clubs to stage annual small shows of their own are the Dauphin Plains Club and the Old Dauphin Club, one 5 miles from town and the other 3 miles. The shows are simplified by having only classes for bouquets (annuals, perennials and wild flowers) and house plants, the former based on excellence of plant and artistry of arrangement.

The similarity in the names of the clubs may be confusing. In fact, it almost got the master of ceremonies at the last Horticultural Show into difficulties. He announced "Dauphin Plain Ladies' Club," but hastily corrected the slip. Joking about it afterwards, the Old Dauphin ladies said, "Think nothing of it. We're often miscalled 'Dauphin Old Ladies' Club'." All agreed that if the master of ceremonies ever got so tangled up that he came out with "Dauphin Plain Old Ladies' Club," he would really have to take to the woods!

Dauphin Plains Flower Show started way back in 1930, when some of the members thought it would be a good idea to show off their flowers at a summer meeting in one of the homes. There were no judges and winners were selected by popular vote. Prizes were roots and cuttings donated by members.

It was so much fun, and gave such an impetus to flower growing, that the show has been held every year since, even in the flood year, 1948, when the rivers took short cuts across fields. The rule that exhibitors must grow their own flowers was relaxed for one show. "Beg, borrow, or otherwise acquire, but show," it read.

Sometimes there were difficulties. Mrs. V. E. Phillips, president for many years, recalls carrying her flowers in a basket while riding to the show on the "reach" of a wagon. Mrs. J. A. McKillop, consistent winner at these shows, recalls her first prize winning entry. Her garden had been poor that

year. She hesitated to show any flowers. Finally cut some petunias, wrapped them in newspaper, tossed them in the back of the old car and arranged them when she got there. The result got a placing.

The show soon grew too large, so it was moved to the school. W. J. Boughen, nurseryman of nearby Valley River, was commandeered to judge. Later, Mrs. H. E. Lys, now of Ottawa, a prominent horticulturist, did the judging, usually assisted by a woman from the town or district.

"Her influence is still felt in the shows," remarked a member. "She used to say 'Come on girls, I'll show you why your entry didn't get a prize', and she'd demonstrate."

Still later, Edna McConnell, now of Virginia, who was agricultural representative in the district, judged the show. She had specialized in horticulture. She made a habit of "adjudicating" each entry after making the placings, a practice which was a help to everybody.

For the past 10 years or so, the shows have been held in the community church, which has better facilities for setting out the displays.

"It is a far cry," remarked the president of the club, recalling the early shows, "from the too-many flowers stuck in any old vase, to today's dainty and graceful pastel bouquets or striking artistic arrangements, each co-ordinated with its container."

Now about the Old Dauphin Ladies' Club Show. It was organized in 1937, coronation year. Whenever a special event comes up, the club puts on a class named for it. The "Coronation Special" that year was a beautiful arrangement of red carnations in a white bowl.

All the shows have been held at the homes of members, usually at Mrs. J. A. McPhee's. Other clubs are invited, and tea is served on the pleasant grounds.

At one of the early shows, Mrs. McPhee brought a proposed plan for her garden and grounds for discussion. "It has been interesting," says a woman who was present, "to watch the development of the grounds from the paper design." These grounds, by the way, have twice won the Dauphin Horticultural Society's award for best kept farm home grounds. Another winner, twice over, is Mrs. Fred Robson, present secretary of the Horticultural Society.

The Old Dauphin shows were not very old when Edna McConnell started a garden club among the members. Plots were judged by members making the rounds, all marking by Miss McConnell's cards. Points were given on plan, cleanliness, quality and quantity, the latter based on the size of the family.

The president, Mrs. Allan Church, recalls the interest . . . and the good gardens . . . created by the friendly rivalry and the regular inspections.

The garden contest does not function at present, but interest in the flower show has grown, until the original three classes have grown to eight, with two more for children.

Last year the club tried something new . . . a "workshop" at a regular meeting. Each member brought an arrangement, or flowers to make one, and all benefited by experience and criticism. One of the newer members, Mrs. Alex Watts, used branches of ripe wild fruit, placed in a basket made by her husband.

Some of the outstanding entries from these two clubs, seen at their own shows or at the Horticultural show, are as follows: Mrs. Oliver McQuay's lythrum in a low black bowl and her helianthus in a terra cotta crockery vase; Mrs. Ivan Boles' table arrangements and her house plants; Mrs. U. Roszell's gloxinias; Mrs. J. A. McPhee's outstanding glads, petunias, and many others; Mrs. F. W. Robson's table bouquets and her present favorite, the miniature glad; Mrs. A. Church's marigolds in a basket of soft green; Mrs. W. Arthur's blue and white delphiniums.

An outstanding arranger at Horticultural shows is a member of the Eclipse community club, who sometimes helps judge at the Dauphin Plains and Old Dauphin Shows.

"The Prairie Gardener," who visited the Dauphin district this summer, remarked that the flower arrangements at the Dauphin Horticultural Show were equal to any he had seen in large centres. Some of them were done by members of the two clubs which are the subject of this article.

The Hollyhock

In grandmother's day, one of the popular flowers in everyone's garden was the tall and stately hollyhock. Since that time they have gradually decreased in popularity which is something that is hard to understand. Especially since we now have not only the fine single forms from grandmother's day but we also have fine new double varieties which resemble beautiful climbing roses. It may interest you to know that the hollyhock is one of the oldest of our cultivated flowers. It originally came from China. Ever stop to think of the number of times the Hollyhock is mentioned in poetry and folk-lore?

Those of you who grow hollyhock in your gardens know that it flowers during early July. The bees like the pollen of these charming flowers so well that in a mixed group of these plants the seed will be often carelessly crossed. This is why the seed you buy will only come about seventy-five to eighty percent true to colour and about the same per cent double. Which can be probably blamed on the busy bees.

One of the features about hollyhocks is the fact that they flower in July when there is generally a lull or a lack of flowers in the perennial border. Hollyhocks belong to the tall growing group of flowers which are placed at the back of the border. They look particularly well when grown against the background of a white house. This probably accounts for their early popularity with the owners of the old colonial type homes. You can also use a group of them with good effect among shrubs. There is nothing nicer than a row of them along a fence or a garden wall. They range in colour from white through red, pink, rose to maroon and yellow. You can also buy varieties which will give you delightful pastel shades.

One of the big reasons why hollyhocks fail to survive in the average garden is the heaving of the plant by frost during the freezing and thawing periods during late winter and early spring. The hollyhock you see has a long tap root with an easily destroyed crown bud. Heaving of the plant by frost exposes the main root stem below the crown bud and the hollyhock is either killed then and there or will perhaps flower and then die. In much the same way deep cultivation by removing the soil around the plants or the removal of the soil by heavy rains will materially shorten the life of your hollyhocks.

Because they have such long tap roots, the soil for hollyhocks should be deeply dug. It should be well drained and should contain a quantity of well rotted barnyard manure and complete plant food. Hollyhocks like a position in the border which gives them full sunlight. They are best planted in groups rather than in a single row of plants. It is wise to set out some new plants each year.

You can grow your own plants very easily from seed. The seed of the hollyhock germinates very easily and readily in about five to ten days. You can sow the seed in a greenhouse or coldframe in March. They can be planted out later on in the spring and should flower the first year from seed. This flowering period will be somewhat later than established plants, usually late in August or early September.

The best time to sow seed is outdoors during the month of July. I would suggest that this sowing be made right out in the open ground as you would your late flowering annuals. The soil should contain a fair amount of clay soil which will help the seedlings form a strong system of side tap roots. Lots of water will materially help these side tap roots to develop too. If the soil is too dry or too sandy, you will find that you will have developing just one or two main tap roots.

Such plants are left in nursery rows until early the following spring and then moved to their permanent positions in the perennial of shrub borders. You should be very careful when digging to make sure that you have all the main roots. These should be planted in a natural position. In other words, pointing downward not doubled under. It is important that the crown of the plant be just a little below the surface of the soil.

A very common disease of hollyhocks is a rust. This takes the form of red spores on the undersides of the leaves. It is quite easy to get severe infections of this disease which can cause yellowed foliage and very sickly looking plants. You can control this rust quite easily by dusting your hollyhocks regularly with a good all-purpose fungicide. This dusting should begin very early in the spring. Make sure that you thoroughly dust the undersides of the leaves. You can cut down on the spread of this rust by cutting the old flower stalks down to the ground just as soon as they have finished flowering.

Selecting Vegetables for Exhibits

H. R. HIKIDA

Dominion Agricultural Research Officer, Winnipeg

A good exhibit attracts attention and makes the crowd stop to see it and to compare it with others. It will arouse interest, create discussions and raise comments, and stimulate the desire or determination of those who see it to adopt new practices to achieve such goals.

The exhibit, whether it be an individual entry or a display, is a demonstration of achievement — the exhibitor's ability to grow quality produce, his judgment in choice for exhibits, and his artistic taste in display. A judge's decision is made as he sees the exhibit at the time of judging. He cannot and does not make his placing on what the exhibit was or what it will be.

The initial stages of the exhibit begin with the purchase of the seeds and the choice of environment in which these seeds will grow. Varieties that are best adapted to the area often provide the exhibitor with a better choice of specimens for the show. Good seed is therefore important. Soil condition, fertility level, moisture availability, insect and disease control are all important factors in the production of quality specimens.

In addition to producing a good prize product, an exhibitor must know how to select a "show" sample, how to prepare the sample he has selected, and how to show it to its best advantage. There are some general rules that should not be ignored.

These are:—

1. Read the show rules carefully.
2. Follow the rules as set up by the prize list. If the exhibit calls for 6 specimens, that is the number that is expected in an entry. (However, take at least one extra specimen, as one might become bruised or lost en route to the show.)
3. Decide ahead of time what you have available for the show and send in the entry list.
4. If possible, get the perishable fruits and vegetables ready the same day as the judging. The fresher they are, the better they will look and stand up during the show.
5. Carry the exhibits to the fair in a way that will protect them from bruises and preserve their garden freshness. Wrap fruits separately in paper and pack them loosely

in a box which has excelsior or crumpled paper on the bottom. Wrap vegetables in wet burlap bags, and keep them moist.

6. Be on time in making your entry. Leave home in plenty of time so that any short delay, which might happen en route, will not make you late.

Specimens — Which and How

It is important to select vegetable show samples that are uniform in size, shape and color, and free from insect, disease or mechanical injury.

The vegetable must be true to type. A vegetable variety may have several types, but the individual specimens in the entry should all be of the same type. The size, shape or color should be identical.

All exhibits should be clean. No excessive soil or foreign matter should be present. All specimens should be so selected that one specimen cannot be told from another.

Condition is a very important item. It means physical perfection of the entry at the time of judging. Care must be taken to select an entry that is not immature or overmature. The rules will generally state whether the tops of root crops are to be left on or taken off.

Uniformity and Quality

In selecting vegetables for exhibit purposes, remember that uniformity and quality are the two most important things. Look for medium size. Select specimens with the same (1) size; (2) shape; (3) color; (4) degree of maturity; and (5) freshness of condition. This is a good guide to use as it gives uniformity.

High quality in an exhibit is characterized by freedom from:—

1. Insect injuries
2. Mechanical injuries
3. Disease spots
4. Cracks or blemishes
5. Wilt or molds

Vegetables and fruits which have both uniformity and high quality also will have the highest food value and will be in the best condition for table use as well as exhibition purposes.

Display Hints

There are some important points to remember in setting up exhibits. These may be listed as:—

— clean plates or containers, uniform in size and color make attractive displays

— all exhibits should be neatly and correctly labeled
— large collections should be equally balanced
— blended colors make exhibits attractive and harmonius
— avoid mixing of different kinds or types of vegetables or fruits
— check carefully the number of kind or variety required for an entry

Arrange for well-lighted display rooms. This is a great advantage to both the exhibitor and the judge.

The following are suggestions offered as a guide in selecting exhibits of vegetables most commonly shown in Manitoba horticultural shows.

BEANS

1. Wax and green beans should be clean, firm, and free from blemishes.
2. Pods should be uniform in type, size, color, and stage of maturity; and all of the same variety.
3. Varieties that are stringy should be avoided.
4. Thick fleshy pods should be selected — but avoid overmatured pods.
5. Ends should not be broken off in picking.

BEETS

1. Beets should be uniform in size, shape, and color.
2. The roots should be smooth and free from side roots, cracks or other blemishes.
3. Beets with small necks are preferred.
4. It is recommended that tops be cut to ¼-½ inch.
5. Dirt should be removed carefully to avoid bruising or otherwise marking the surface.

CABBAGE

1. The heads should be firm, of the same size, shape, and color, and free from insect, disease, or other damages.
2. Loose leaves should be trimmed off but a few of the wrapper leaves should be left to protect the heads.
3. Specimens should be typical for the class — round, pointed, savoyed, or red.

CARROTS

1. Specimens should be typical for the class — long (Imperator), half long (Chantenay), or short (Oxheart).
2. Carrots should be clean, smooth, straight, free from sunburn, and deep orange in color.
3. Carrots should be free from side roots, cracks, or other deformities.
4. Dirt should be carefully removed — avoid scrubbing in cleaning the roots.
5. It is recommended that ¼ to ½ inch of the top be left.

CAULIFLOWER

1. Uniform, firm, smooth, white heads should be selected.
2. The heads should be trimmed, leaving approximately 6 leaves which are cut off 1 to 2 inches above the head. This will help to protect the heads from bruises.
3. Heads should not be overmature.
4. A soft brush may be used to remove dirt, if necessary.

CUCUMBERS

1. Cucumbers should be straight and uniform in size and shape.
2. The surface color should be a dark green.
3. Overripe fruits should be avoided — indicated by puffy, yellow or dull colored fruits.

LETTUCE

1. The heads should be firm, fresh, crisp, and uniform in size.
2. The outer leaves should be removed, but a few of the wrapper leaves should be left to protect the heads.
3. Keep the heads cool to prevent wilting.
4. Avoid heads that show tipburn or internal browning.
5. A bright color is desired in lettuce.

ONION

1. The onion should be well matured and have a bright, hard, dry skin.
2. The color and shape of the onion should be typical for the variety.
3. The neck should be small.
4. Thick-necks and doubles should be avoided.
5. The skin of the onion should not be peeled.
6. The basal roots should be trimmed close to the bulb.

PARSNIP

1. The roots should be smooth, well-shaped, tapering evenly, and not having any side roots.
2. Skin with a light creamy color is preferred.
3. Tops should be cut to ¼ to ½ inch.
4. The lower portions of the roots should not be cut off.

PEAS

1. Pods should be uniform in size, shape, degree of maturity, and color.
2. Dark green colored pods are preferred — the bloom should be left on the pods.
3. Well-filled, plump pods should be selected.
4. Overmature pods should be avoided — often identified by light color and some wilting.

POTATO

1. The tubers should be free from dirt and insect, disease, and mechanical injuries.
2. Potatoes should be uniform in size, shape, color, and type for the variety.

3. The tubers should be cleaned with a soft brush — not washed. Skin breaks should be avoided.
4. Oversized tubers are not desirable.

PUMPKINS and SQUASHES

1. Specimens should be matured, typical for the variety in shape, color, and size.
2. A bright colored fruit, free from injuries is desirable.

RHUBARB

1. The stalks should be from a new growth—young stalks are more tender.
2. The root end may be trimmed but should not be cut off.
3. A very small portion of the leaf should be left with the stalk.
4. A medium thick stem with bright color is desired.

RUTABAGAS or SWEDE TURNIPS

1. A medium sized root is preferred.
2. Tops should be trimmed to ½ inch.
3. The roots should be free from insect damages.
4. Side roots may be trimmed close to the main root.
5. The roots should be free of soil.

SWEET CORN

1. The ears should be uniform in size, shape, and degree of maturity.
2. Color of the kernels is important — a dark yellow in the case of yellow corn is preferred.
3. The husk should be left on and it should look fresh and be free from wilting.
4. The kernels should be tender and juicy — not over-mature.

SWISS CHARD

1. The specimens should be uniform in size, color, and type.
2. The plants should appear fresh, be crisp, and have bright green leaves with clear white petioles.
3. The roots should be trimmed.

TOMATOES

1. The fruits should be uniform in shape, color, and size.
2. The fruits should be typical for the variety.
3. The specimens should be free from any blemishes, insect damage, disease spots, sunscald, cracks, etc.
4. The fruits should be in prime condition for use, whether as ripe fruits or for green fruits.
5. Small blossom scars indicate a smoother fruit.
6. Ripe fruits should be firm and not soft.
7. Stems may be left on — check with prize list.

Fruit Growing in Northern Manitoba

W. J. BOUGHEN — Valley River, Manitoba

Valley River was considered to be in the northern hinterlands of Manitoba in 1891 when I arrived here fresh from school in Bowmanville, Ontario. Swan River, which was still further north, was a legend of good land that one required to travel a full day on a good pony to ride across. Here were found the wild plums, the raspberries, and the strawberries. The quality of these raspberries were as good as those that were grown in the gardens in Ontario. Strawberries were so plentiful that the wheels of the wagons travelling over these regions were crimson with juices from the crushed fruits. The High Bush Cranberry which grew along the river streams was a popular fall fruit for the settlers. The fruits were preserved by the early settlers for winter use, by putting them in a barrel and covering with water. Wild Black Currants were also plentiful and these provided a somewhat medicinal, strong black jam. The wild Gooseberries and the Pincherry were widely used by the early settlers for jams and jellies.

The idea of growing and caring for fruit trees in a garden was always regarded as a joke or a dream which could not amount to anything. However, I was determined to make this dream come true. From the Central Experimental Farm, I received information about crab apples and the possibilities of growing them in this area. The first tree that I had was the Transcendent. It was about this time that I heard of Stevenson's work at Morden and some of my basic material was obtained from there. My later acquisitions were the Compass cherry plum and the Mammoth plum. Compass has failed to mature frequently with me here, but Mammoth has rarely disappointed me. Of a large number of plums and cherry plums that I have tried, I have found Mammoth to be tops.

My trial grounds expanded rapidly with the acquisition of a number of apple-crab hybrids with the Siberian crab as one of the parents. Some of these were Prince, Tony, Elsa, and Silvia. The latter is a hybrid of Yellow Transparent and was a favorite nursery tree for many years. It is still one of the best yellow crab apple in the district.

It did not take too long to acquire a green thumb and before long I was hard at work budding and grafting with a fair degree of success and increasing the stocks of the more promising varieties. A sheet listing the available stocks at that time was published — that was some forty years ago.

Some of the early varieties, like Hibernal, grew very well but the yield was very poor.

One of the leading fruit breeders for the prairie region of this period was Prof. N. E. Hansen, of the South Dakota State College of Agriculture at Brookings. His introductions of hardy northern fruits have meant much to the home gardeners of Manitoba. Opata, Sapa, Oka, Tom Thumb, Waneta, and Pembina were some of the varieties of hardy fruit trees well adapted to our environment. These have performed very well with me here.

In raspberries, perhaps Chief, a Minnesota variety, has been most successful. Some of the more recent introduction, Madawaska and Muskoka, from the Central Experimental Farm, Ottawa, are showing great promise.

Hardy apples of good quality have been introduced by Mr. A. Heyer, of Neville, Saskatchewan. His Heyer No. 6, No. 12, and No. 20 have done well in this area. The No. 12 is a sure cropper of good quality apples here. Battleford has performed very well even as far north as latitude 53°.

Developments and improvements in hardy and suitable fruit varieties for prairie Canada had been a long slow process. Tremendous progress has been made, but I feel that the goal is far away yet. Here, then, is the great challenge to the present day fruit tree breeders.

Flower, Fruit, and Vegetable Show

Wm. J. TANNER

The annual Flower, Fruit, and Vegetable Show of the Winnipeg Horticultural Society was held in the Civic Caledonian Curling Club rink on Wednesday and Thursday, August 27th and 28th, 1952.

Entries this year, while somewhat below last year, were very encouraging in all sections. Entries in the children's section were about the same as last year. Altogether, there were 753 entries from 101 exhibitors. Entry fees amounted to $65.40. Prizes amounted to $474.00, rent of rink, printing, and other expenses amounted to $271.36, making the total cost of the show $745.36.

We were very fortunate in having the Honourable F. C. Bell, Minister of Agriculture, present on Wednesday evening to officially open the show. Mrs. Bell was also in attendance, and was presented with a bouquet of gladioli.

As an experiment, this year a small admission charge of ten cents was charged to the general public, and it proved to be very successful. Exhibitors were admitted free. Amount realized from admission charge was $97.95, which helped very considerably in reducing the cost of the show.

Judges in the flower classes were Prof. E. T. Andersen, Mrs. E. F. Youngs and Mr. T. E. Babb; fruit, Prof. F. W. Broderick; vegetables, Mr. Alex Craig of Portage-la-Prairie. We are greatly indebted to them and also to those who assisted them. We are also greatly indebted once more to The T. Eaton Co., who very kindly loaned us the counters for the show.

An exhibit in the fruit section attracted a lot of attention and comment. Mr. T. Howard displayed sixteen varieties of apples and crab-apples all grown on one tree. Mr. Howard had twenty-one varieties on this one tree this year, and hopes to have about forty next year. The Winnipeg Board of Parks and Recreation, by kind permission of Mr. T. G. Hodgson, set up a very fine display of cut flowers. These flowers, together with all others not taken away by exhibitors, were distributed between the Winnipeg General and the Children's Hospitals.

To all Directors and others who worked so hard setting up the show, to our secretary, Mr. R. W. Brown and all those who assisted him writing entry tags, I tender my sincere thanks.

Congratulations to all those who won prizes, and to those who did not, may I suggest, "If at first you don't succeed, try, try again.

The New "Soil Conditioners"

J. W. GARVIN
Vancouver, B.C.

In December 1951, The Monsanto Chemical Company announced that after a number of years of extensive research, it had developed a series of synthetic resin soil conditioners. These synthetic resins showed spectacular power to improve the mechanical structure of high clay soils. Early development work showed that these "soil conditioners" would be uniquely valuable in agriculture, including horticulture soil surface maintenance and in erosion control. The commercial product was given the trade name Krilium (Soil Conditioner) — chemically, it is known as a modified vinyl acetate maleic polymer compound.

Since then, with the offering of other brands of "soil conditioners" by various manufacturers and the competitive scramble for this new market, there has arisen a certain amount of confusion as to just what these new "soil conditioners" have to offer and how do they function in the soil. In the first place, they are not a plant food and will in no way replace fertilizers although, because root systems often develop better in soil treated with these new "soil conditioners," the plant may take up more nutrients from the soil and so make better use of those added in fertilizers. Secondly, they are not a substitute for organic matter, although like organic matter they improve soil structure, and being a chemical formulation, they are not attached by soil organisms as is natural organic matter. Accordingly, their structure—building properties far outlast the effects of a green manure, compost of peat moss.

The physical properties of soil are largely controlled by two factors: soil texture and soil structure. Soil texture is determined by the relative amounts of the different particle sizes occurring as sand, silt and clay. Soil structure is determined by the stable arrangement of these primary particles as they stabilize themselves in aggregates. Good soil structure, therefore, is a problem of the arrangement of the soil particles — the most satisfactory apparently being stable aggregates that range from the size of a pinhead to the size of a pea.

Why Is Soil Structure So Important To Plant Growth?

Soil structure is the key to productivity. Good soil structure (called "tilth") increases the capacity of the soil to absorb rainfall and allows upward movement of water from below. The ability of soil to resist splash erosion also depends largely on its tilth, or structure. Good soil structure also improves the effectiveness of commercial fertilizers and stimulates the activity of beneficial soil organisms. Ideal soil structure permits good soil to absorb water readily and hold

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adequate amounts of rainfall. It allows good aeration of plant roots; good loose soil gives little resistance to penetration by growing roots. It permits easy plowing, spading or cultivating; and good loose structure which promotes conditions that stimulate the activity of soil organisms.

Structurally-poor soils pack tightly, are difficult to cultivate, absorb and hold little moisture and cause rapid run-off of water. During dry periods, poor clay or silt soils bake hard and the surface cracks. Such high content clay soils have lost their capacity to breathe and drain. They cannot be used successfully for growing until good soil structure has been rebuilt.

"Soil Conditioners" Are A Builder Of Soil Structure

The new "Soil Conditioners" are a chemically-made resin. They are a counterpart for the natural gums that are produced from compost, manures and plant residues. These organic materials are normally plentiful in fertile virgin soils. But they are not present in adequate amounts in worked-out silt and clay soils.

When mixed with clay, these new "Soil Conditioners" form tiny, connecting chemical bonds between the minute particles of clay, bonding them into larger particles — little "crumbs" just like the aggregates in topsoil. The clay particles now cannot settle into a tightly packed continuous mass. Instead, they resemble a loose jumble. In appearance, the treated clay resembles a loose mass of tiny, spongy balls ranging in size from a pinhead to the size of a pea. The soil structure becomes an easily-worked, porous aggregate.

The new "Soil Conditioner" treatment stabilizes soil aggregates. The soil remains loose and porous even in time of heavy rainfall. Although most poor soils can, with sufficient labor and proper timing, be broken up into loose aggregates — the first rainfall disperses part of the clay and causes the soil to pack hard. Dispersed particles may "run off" with the water, leaving gullies and washouts. The loosely packed, spongy balls of soil produced by this treatment permit the free passage of water into the soil. When rainfall ceases, treated soil shows virtually no evidence of packing hard or washing out.

The new "soil conditioner" treatment stabilizes the soil structure which has been prepared mechanically. It doesn't create good structure. In other words, a soil conditioner can only fix a soil in the state of which it has been converted by appropriate cultural practices. In the mechanical preparation of the seed bed, a loose, porous structure with the desired size of soil aggregates must be prepared.

These new "Soil Conditioners" also increase the water holding capacity of the soil with resulting increase in the water available to the plant. Evaporation too, is reduced as

much as 30 to 40 percent, possibly because of the mulch structure of the surface.

How To Use "Soil Conditioners"

"Soil Conditioners" must be used properly for best results. One of the first requirements is that they must be applied on a soil capable of being improved — one which contains either clay or silt particles and is structurally-poor at the present time. Soils in good structure and soils which are predominately sand will not be benefitted appreciably by this treatment.

The soil to be treated must be prepared mechanically and worked into good tilth or structure and the moisture content of the soil should be high enough to facilitate this preparation. The "Soil Conditioner" then stabilizes the soil in the condition which was prepared mechanically.

For maximum results from application of "Soil Conditioners," the proper amount of the chemical must be applied and it must be incorporated to the depth which the improved soil structure is desired. For example, in building new lawns, a treatment to one inch may be sufficient to keep the soil in place and let the seeds germinate. For deeper rooting, such as in gardens, greenhouses and large scale agriculture, a treatment of 3 to 6 inches obviously may be required. The amount of chemical required for a given area for incorporation to 6" would be double the quantity required for incorporation to 3 inches.

If the "Soil Conditioner" is properly applied, the effects are dramatically apparent and the formation of clay aggregates is observable within 24 hours after application.

"Soil Conditioners" are still relatively new. Monsanto, the originators of Krilium (Soil Conditioner) and others are still carrying on extensive experiments to evaluate effects and to determine the most effective methods of use. Development work is also being carried on in co-operation with Provincial and Dominion Government organizations. Already, the new "Soil Conditioners" have dramatically demonstrated their beneficial and lasting effect on maintaining good soil structure — particularly on "problem" soil as well as preventing crusting, improving germination and overcoming soil erosion. At the present time, because of the relatively high price of these new "soil conditioners," the uses to which they can be put are restricted. It is, however, interesting to note that, comparatively speaking, only a small quantity seems to be needed since one pound can exert the same effect on soil structure as 200 pounds of peat moss or 500 pounds of manure. With the reduction in price of "soil conditioners" which is inevitable and the increasing factual information, which will become available, the sound development of this new concept in soil management is assured.

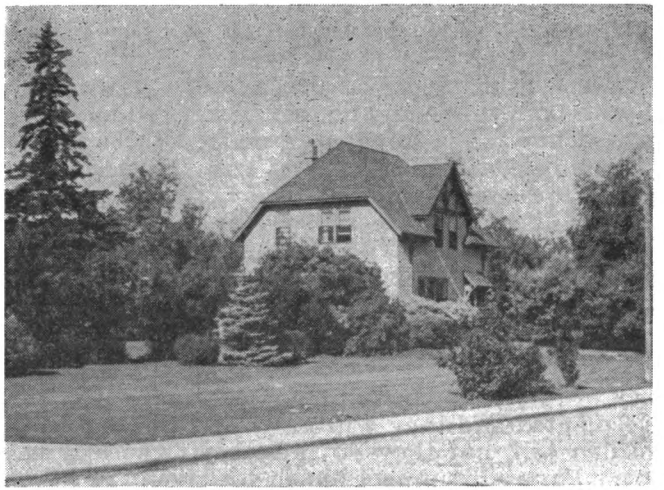
If You Have a Hot Dry Spot In Your Garden Portulaca is the Answer to Your Problem

Portulaca, as many of you already know, is a low growing annual with both single and double flowers which resemble a wild rose. They range in colour from red through pink and yellow to purple and mauve. You will find that they only open when the sun is shining. The hotter it is, the better they seem to like it. You can use them for massing in beds, or as edging plants for borders, they will grow well even when planted along a hot sidewalk or roadway. They are ideal for planting in rock gardens or along the top of rock walls. If you have a sunny bank you wish to cover, by all means make use of Portulaca.

They are not a bit fussy about the kind of soil in which they are planted and they will grow and flower well in any good garden soil, but they do their best where it is sunny and warm. For early summer bloom you should buy the plants in boxes about the twenty-fourth of May, but the usual practice is to sow the seed where the plants are to grow. This can be a bit difficult for the home gardener sometimes as the seed is very fine and because of this it is hard to sow it evenly. That being the case, I would suggest that you mix the seed thoroughly with dry soil or sand before doing the sowing. Then you will find it very easy to sow your Portulaca seed evenly.

Pruning Lilacs

When it comes to pruning your lilacs, do it intelligently. Don't crop the ends as if you were giving someone a crew cut. This makes an unnatural and ungraceful looking shrub and greatly reduces the bloom. If your bush is too tall for the space, cut out some of the older branches near the ground. Be most careful in doing this so you will not injure the remaining stems. A narrow saw is best for this. If you examine a lilac branch in the Spring you will see that flower buds are starting to swell in preparation for flowering. Just below these flower buds are leaf buds which will produce next year's flowers. If you remove the entire end of the branch, you cancel the chance of bloom from that branch next year but not the year after. So watch how you cut flowers for the house. The same thing applies when you are removing the old flowers at the end of the flowering season. They should be removed immediately the bloom is over. If not, some of the energy of the lilac will go into producing seeds and not into producing flowers for next year. Incidentally, if your bush grows too wide, limit your cutting to the outside sprouts.



Winner of M.H.A. Home Grounds Competition, 1952.

MRS. J. W. JOHANNSON, Pine Falls, Manitoba

Home Grounds Committee

Rock Garden Competition—10 entries, 5 in each class

1st. in Class A ..... MR. R. C. PRAGNELL
1st. in Class B ..... MRS. E. SLIPETZ
Judges: Mr. Grant Churcher and Mr. W. J. Emerson

Home Grounds Competitions—21 entries

1st.—Sec. 1, Lots up to 33 ft. ..... MISS M. C. JILLETT
1st.—Sec. 2, Lots 34 to 66 ft. .... MR. THOMAS McKEOWN
1st.—Sec. 3, Lots over 66 ft. .... MR. J. K. MAY (2nd. year)
1st.—Sec. 8, Novice ..... MR. A. H. MOLLENBECK
1st.—Sec. 4, Utility Garden ..... MR. C. F. POLLEY
1st.—Sec. 5, Flower Garden ..... MR. J. K. MAY
1st.—Sec. 6, Window Boxes ..... MISS M. C. JILLETT
1st.—Sec. 7, Lawns ..... MR. J. K. MAY
Highest Aggregate ..... MR. A. H. SOUTHBY
Judges: Mr. H. H. Marshall and Mr. R. Skelding

Vegetable Garden Competition—92 entries

1st. Class A, 1st. Year ..... MR. J. C. WRIGHT
1st. Class B, Garden up to 25 ft. .... MRS. ROSE GLESBY
1st. Class C, Garden 25 to 50 ft. ..... MR. C. F. POLLEY (1950 also)
1st. Class D, Garden over 50 ft. ..... MR. G. W. GRAHAM
Judges: Mr. R. Hikida, Mr. N. Sander, Mr. W. J. Tanner and R. W. Brown

Competition sponsored by Winnipeg Free Press who donated the prizes.

Prizes for Home Grounds Competitions were kindly donated by: Winnipeg Tribune, Mr. W. G. Kotchapaw, Mr. A. M. Oswald, Rockhome Gardens, Hudson's Bay Company, Winnipeg Supply and Fuel Company, Taintor Twomey Seeds, Swift Canadian Company, City Hydro, J. H. Ashdown Hardware Company, Mr. Sam Fudge, Morden Nurseries, Glenarchy Nursery, W. Atlee Burpee Company, Sadok Nursery, McConnell Nursery Company, Wallace Nurseries Limited, Mr. Hector MacDonald, Consolidated Mining and Smelting Company, Burns and Company, Prairie Nurseries Limited, Steele Briggs Seed Company and Skinner's Nursery Limited.

G. S. REYCRAFT,
Chairman of Home Grounds Committee.

Whatever You Do Mr. Home Gardener, Don't Burn Those Leaves

Too often we think of conservation in terms of farming and not in connection with the home garden. All of us, whether we have a farm large or small, have a stake in conservation. Conservation in the garden is important at any time during the garden year, but it is doubly so in the fall. Far too many leaves come swirling down from the trees and then are raked up and burned.

A sense of neatness inherent in many people makes them want to clean up their garden and get rid of the leaves. Certainly, there can be no quarrel with raking up the leaves and leaving the garden all neat and tidy for winter. It is the burning of the leaves that is the terrible mistake, for just where did those leaves come from in the first place? They came from the soil. It took plant food, it took humus to produce those leaves. All this comes from the soil. Unless that plant food and humus is replaced, the soil contains less of those materials.

It follows then, that if we burn the leaves we have destroyed food and humus. We have depleted part of our country's resources. Granted, in your own garden this may be a very small amount, but if you add these small amounts together the total is staggering. These same leaves, if collected and added to your compost heap, can play an important part in conservation. In years gone by when our population wasn't nearly as large as it is now, the average home gardener could count on buying the odd load of barnyard manure from a farmer. Now, of course, this is all changed. Farmers realize that manure is what might be termed the life blood of their farms and it's virtually impossible to get a load of manure. The home garden compost heap is the answer to this lack of manure.

A compost box doesn't need to be an elaborate affair. It doesn't need to cost very much money. For the average garden a rough wooden box six feet long, four feet wide and four feet high will be about the right size. Any kind of rough lumber will do. A compost box, by the way, requires no bottom or top.

Let's image that you have a compost box built and you are ready to start filling it. What are you going to put in it? Number one on the list, of course, during the fall season is the fallen leaves. It will pay you to rake them up often and keep adding them to your compost heap. If your neighbour is going to burn his leaves or otherwise get rid of them, by all

means offer to take them off his hands and add them to your heap.

The best plan is to pile the leaves into the box and keep tramping them down as you add them. Keep this up until you have tramped a layer six inches deep. Then sprinkle with a few handfuls of a complete plant food. Then give the layer a good soaking with water. Next cover the leaves with a one inch layer of good topsoil. I'd like to emphasize those words "good topsoil." You cannot use just any soil for this purpose because from this one-inch layer of soil must come all the bacteria and micro-organisms that will turn this fresh vegetable material into compost.

The decomposition process can be speeded up considerably by using one of the chemical bacteria converters on the market. Your seedsman or hardware dealer can supply you with one of these converters. Full directions for their use will be found printed on the label on the can. Mind you, it isn't necessary to use a chemical converter to get good compost. You can get good compost by merely applying the complete plant food and the one-inch layer of good topsoil. Once you have added the topsoil you are ready to start all over again with another layer of leaves or other vegetable material. This is continued until the box is filled. A compost box of this size should provide your garden with from one to two tons of valuable and vital humus each year. This is humus in its very best form, all ready to go to work for you in the garden to give you bigger and more attractive flowers, larger and more tasty vegetables.

Now, in addition to the leaves, you can add to your compost box any other green vegetable material around the garden. For instance, you will be cutting away the tops of your perennials. You will be pulling up annual plants which have finished their job in the garden. Old gladiolus tops make excellent compost material. The tops of carrots, beets, and turnips can all be added to your compost heap, as well as leafy refuse from the kitchen such as lettuce and celery leaves, cabbage and cauliflower leaves, and orange and grapefruit skins.

The best location for a compost box is in a shady spot where it will not dry out too quickly. When your compost box is full it should be capped with a layer of topsoil about four inches deep. Some experts and authorities recommend turning several times, say at about three weeks and six weeks after making. There is no doubt that such turnings will produce a more crumbly and better mixed compost but good compost can be made without turning at all.

Finally, a plea to all home gardeners not to burn a single leaf or bit of material next fall which could be added to your home compost heap. This can be your small but important contribution to the conservation of this fair land of ours.

A Book Review

J. C. M. L'ARRIVEE,
Division of Plant Science, The University of Manitoba

Native Trees of Canada. Bulletin 61, 4th. edition. Department of Mines and Resources, Dominion Forest Service. Published by the Queen's Printer, Ottawa, Canada. 293 pp. 1949. Price $1.50

This paper-bound bulletin is indeed better than the average on the subject and could be referred to as an illustrated textbook. It is conveniently divided into two parts: Coniferous trees and Broad-leaved trees. In the first part we find 35 conifers and in the second part 136 deciduous trees. Each tree has been treated in a uniform manner. The left-hand page contains descriptions of its principal features and uses and a small range map showing the area in which it is found in Canada. The facing page contains illustrations of the features useful for identification purposes. In many cases the scale has been shown by photographing the specimen against a grid of one-inch squares.

This book would be a great asset to any person's library. The splendid illustrations and descriptions, the presence of the various common names and the scientific name of each tree combined with the use of simple terms makes this book one of the best ever printed in Canada.

★ ★ ★ ★

Hints on Planting Roses

Buy good stock. Plant in a sunny, well drained, location. Trim off all broken and bruised roots, cut top-growth back to six to eight inches. Dig planting holes at least six inches wider and deeper than needed so the roots will not be crowded or bent. In the bottom of the hole put some gravel or small stones, then a four-inch layer of top soil. Mix a little complete plant food with this. Then cover this mixture with good black soil, bringing the level up to the required planting depth. Make a mound in the centre and set plant roots over this mound, spread roots and fill in with soil. Be sure the bump on the stem, where the rose was budded, is two inches below the surface of the soil. Firm the soil tightly two or three times while filling the hole. Water well.

Annuals

. . . tiny seed to lovely flowers in one season

HECTOR MacDONALD

Some of the most colorful flowers for home beautification are annuals — plants that live only one growing season and must be reseeded each year. They are easy to grow, and develop growth very quickly. For this reason, the seedlings should have lots of room to develop in the beginning of the season.

As a rule, annuals are very showy and remain in bloom over a long period of time. The blooming season can also be prolonged if the dead blossoms and seeds are removed.

Annuals have many uses. For quick cover and decoration of bare areas where perennials have been winter killed, and in numerous "nooks and crannies" throughout the garden, annuals are in the number one spot. In perennial beds and borders, annuals can be used to brighten dull areas and blend together various perennials. They are also excellent for borders and in beds by themselves.

These are some annuals that can be grown from seed, sown in early spring in the location where they are to bloom. This is the easiest and most economical way but by no means the most certain. Cold, wet weather or very dry weather will retard germination. Some of these annuals are:

Calendula—Various shades of yellow and orange.
Coreopsis or **Calliopsis**—Height range, one to three feet. Excellent cut flowers. Very showy.
Candytuft—An old favorite. Twelve inches. Delicate pastel shades. Should be sown where it is to bloom.
Centaurea—Twelve inches to four feet. Many types and colors. Sweet scented. An old favorite for cut flowers.
Cosmos—Does well sown in open ground. One of the loveliest cut flowers, wide range of colors in single and double blooms. Named varieties come true to color. Height three to five feet.
Eschscholtzia or **California Poppy**—Easy to grow in open ground. Likes a warm dry location. Yellow to scarlet blooms with delicate greyish green foliage.
Godetia—Does not like drought or excessive heat. Likes a cool, partly shaded spot. "Satin flower" describes it well.
Helichrysum or **Straw Flower**—Ornamental in borders, when dried makes attractive everlasting bouquets.
Larkspur—For early bloom start indoors. Splendid as cut flowers. Height from two to four feet. There are lovely strains of Larkspur available.
Marigolds—For early bloom start indoors. Popular as bedding-out plants. The large African types are striking subjects in the border. Some of the dwarf French Marigolds are ideal for edging.
Morning Glory—A valuable climber, new improved varieties are very handsome. Sown outdoors in warm soil. Likes dry, sandy ground. Sometimes germination is slow.
Poppies—Delightful as cut flowers. Seed should be sown where the plants are to bloom.

Phlox Drummondii—For early bloom sow indoors. The annual phloxes come in a variety of beautiful color combinations. Height range eight to eighteen inches.

Portulaca—Does best sown outdoors. The tinted foliage and stems make a carpet. The blooms are bright colored, double to single. Likes the sun and a dry location.

Scabiosa—Brilliant colors ranging from nearly black to pure white, excellent cut flowers. Height two to three feet.

Zinnia—One of the most improved annuals in recent years. Wide range of colors, types and sizes. Probably the most satisfactory annual for our conditions. Showy, easy to grow, sow outdoors or inside. Good for cut flowers.

There are other annuals that for best results should be started in flats indoors. Some of these are:

(Unless otherwise indicated, sow around first of April.)

Antinhinum-Snapdragons—Sow third week in March. A showy bedding plant, good for cut flowers. Height ranges from six inches to three feet.

Alyssum—The best edging plant for beds or borders. Sweet scented and full blooming.

Asters—One of the handsomest flowers, excellent for cutting. Wilt-resistant strains are to be preferred.

Balsam—Brilliant colors, about two feet. Best started indoors.

Cleome or **Spider Plant**—Two and a half to three feet. Attractive border plant.

Lobelia—The dwarf Lobelias are neat edging plants. In hot weather, water freely to maintain bloom. The trailing form is good for window boxes.

Petunia—Possibly our showiest and most popular bedding plant. Very fine seed, start under glass. Many types, single and double, free blooming. Dislikes excessive moisture. Height six inches to two feet.

Salvia—The scarlet form is most popular. Early varieties should be sown. Continuous bloom. Sow in mid March. Height, eighteen inches.

Stocks—An old favorite, delicate colors and sweet scent.

Verbena—Good edging plants, free flowering, good colors.

The Directors of the Winnipeg Horticultural Society wish to thank the advertisers, also a number of donors, whose names are withheld, as well as the following who have made donations. The co-operation of these friends has made this edition of the Winnipeg Flower Garden possible and is appreciated by the directors.

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