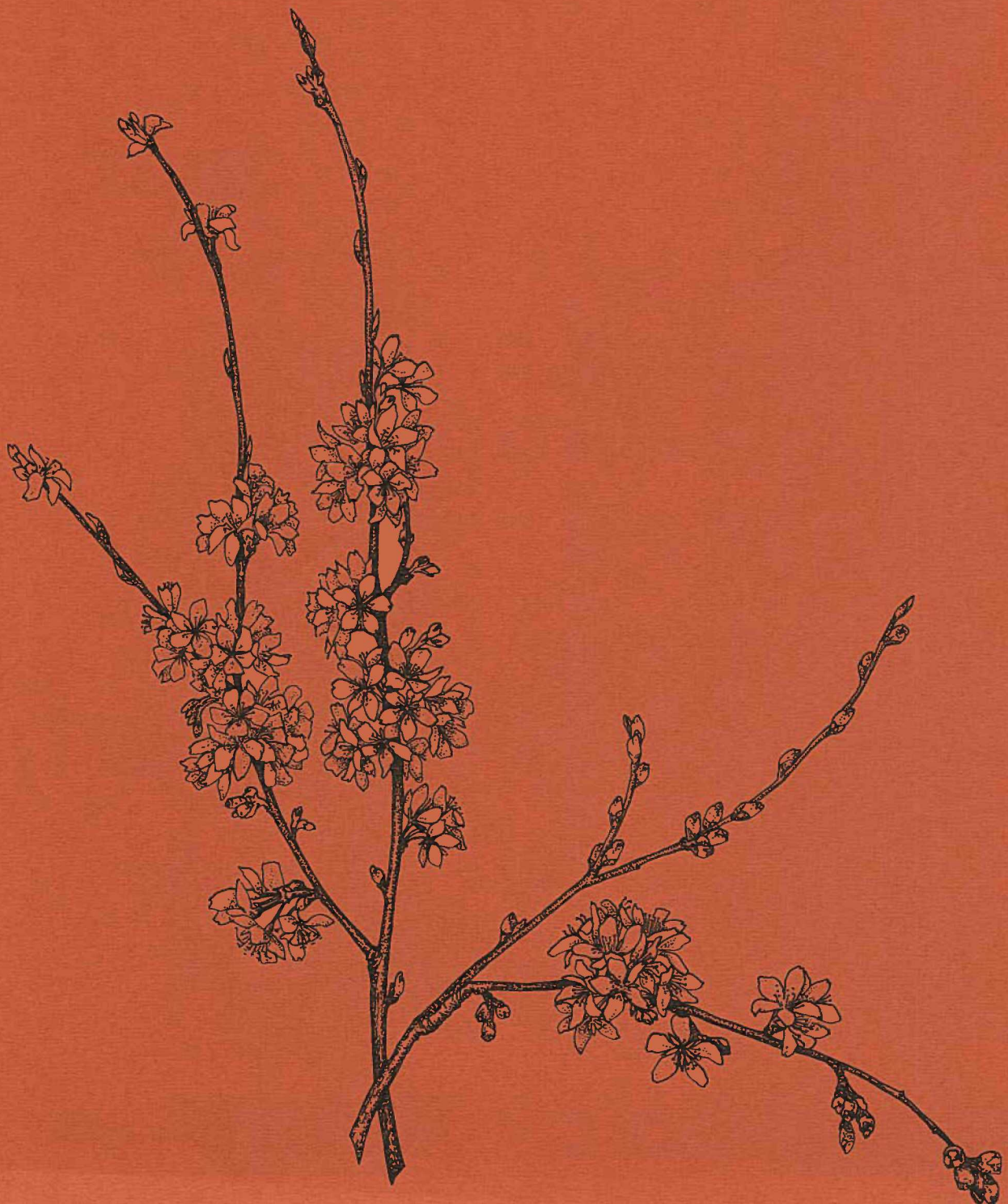
DAVIDSONIA

VOLUME 2 NUMBER 1 *Spring 1971*



Cover

Spring flowering condition of *Prunus serrulata*, a small tree commonly used for street planting in the Vancouver area.

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Acknowledgements

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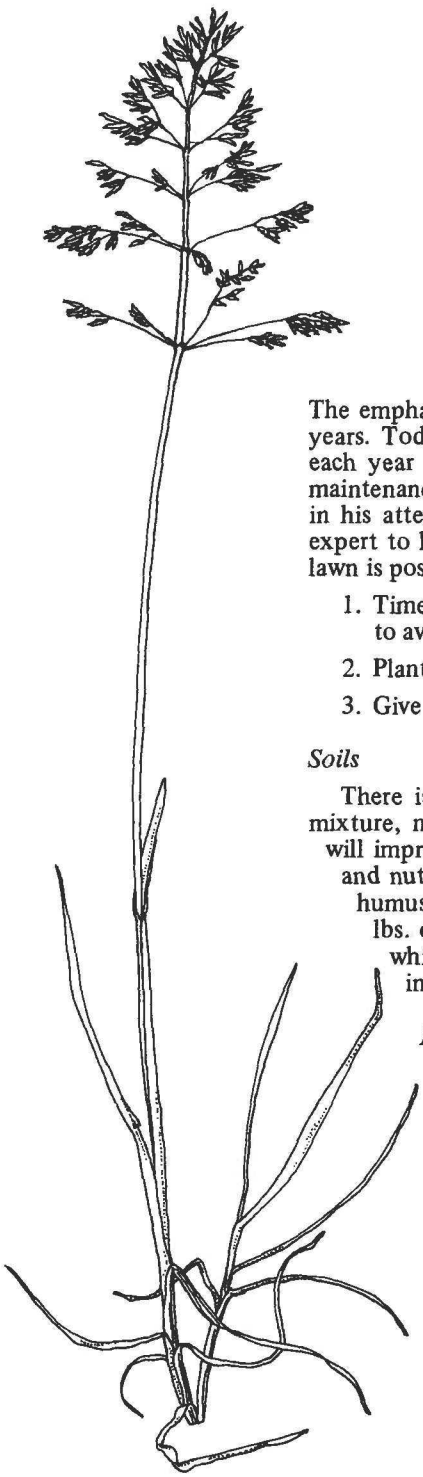


Lawns

KEN WILSON

The emphasis on lawns and lawn maintenance has increased greatly in the last twenty years. Today lawns are better kept than ever before. Large sums of money are spent each year on research and sales promotion of grasses, fertilizers, pesticides and lawn maintenance equipment. It is little wonder the homeowner is bewildered and confused in his attempts to have the perfect lawn. One does not, however, have to be a turf expert to have a good lawn about one's house. By following three basic rules a good lawn is possible for every homeowner.

1. Time and effort spent in preparing the soil prior to seeding or sodding will help to avoid many problems which occur at a later time.
2. Plant high quality seed or sod of a type suitable for your garden.
3. Give the care needed for the kind of grass you grow.

Soils

There is no standard mixture. Seldom does one have the ideal soil – a crumbly mixture, not sticky, yet retentive of moisture and nutrients. The addition of humus will improve the structure of all soils. It makes sandy soils more retentive of moisture and nutrients. It loosens clay soils to a workable consistency. A one inch layer of humus worked into the top four to six inches together with an application of 20 lbs. of 20% superphosphate per 1000 sq. ft. will provide an adequate medium in which to start a lawn. Lime is not required unless a laboratory pH test so indicates.

Lawn Grasses

Lawn grasses can generally be divided into two types. (1) Those which withstand hard wear such as Kentucky bluegrass and Creeping red fescue and (2) the bent grasses which produce a fine velvety lawn but which require considerable time and effort to maintain them in prime condition. For the average lawn in open or light shaded locations a mixture of Merion Kentucky, Commercial Kentucky bluegrass and Creeping red fescue in equal proportions will provide a fine durable turf. Mixtures of the above which include bent grasses should be avoided as their maintenance requirements are different. So called 'nurse' grasses such as Timothy, Orchardgrass and Alsike should not be included in lawn mixtures.

Mowing

For the average lawn, mowing at a height of one and one-half inches is satisfactory. At this height root growth is usually greater, weeds are discouraged and less care is needed to maintain the lawn. Keep the mower sharp. Uniformity of mowing governs attractiveness. Reel mowers give a better finish than rotary ones, but the latter are easier to adjust and maintain.

Fertilizing

Lawns are grown for their green foliage. Therefore, the fertilizer must have a high proportion of nitrogen, the nitrogen being primarily responsible for the deep green colour. Formulas such as 10-6-4 or 12-6-6 preferably with a percentage of the nitrogen in a slow release form are most suitable for lawns. Follow the instructions on the bag for the rate of application. These may vary depending on the source of nitrogen used in the mixture. Liquid and instant soluble fertilizers are useful as immediate stimulants but the cost is higher than dry fertilizers. A thorough watering should be given immediately after application unless rain is imminent.

Moss in a lawn usually indicates low fertility. Poor drainage, compacted soil and shade also favour the growth of moss.

Watering

Newly seeded and sodded lawns must be kept moist until growth is well started. Established lawns can withstand considerable drought. It may turn brown but will quickly recover in rainy weather. To maintain a green lawn sufficient water should be given to wet the soil to a depth of at least four inches. The lawn should then be allowed to dry out before being given more water. This helps the grass develop a deep root system. Frequent light sprinklings encourage shallow rooting and possible injury to the roots during hot dry weather. Watering when the sun is shining does not cause injury although some moisture is wasted through evaporation in the sun.

Weed Control

In a healthy, well maintained lawn, weeds are rarely a problem. If many weeds are present, weed control and fertilizing should go hand in hand. Apply sufficient fertilizer and water followed a day or two later by an application of a herbicide to control the specific weeds. Numerous spray and dry formulations are available to control most lawn weeds without harmful effects to the grass. Strict adherence to the directions for their application is imperative and extreme care is necessary when applying these chemicals in the proximity of other plant materials.

Pest Control

Insect and disease pests are not commonly a problem in lawns, although infestations do cause considerable damage in some years in localized areas of the country. The lawn moths, leatherjackets and white grubs are the main causes of insect damage in lawns of the Pacific Northwest. Leaf spot and rust occasionally cause some damage but this frequently goes unnoticed by the homeowner. If brown patches should appear in the lawn when the grass is generally growing well a close check should be made to determine the cause. Powdery mildew is occasionally conspicuous on Merion bluegrass during damp weather and in shaded areas, but dry weather will usually clear up the problem. Fairy rings are unsightly but cause little damage to the lawn. Control is difficult. Spiking the areas helps to loosen the soil allowing increased water penetration which may inhibit the fungus.

The following publications are recommended for the homeowner who wishes to have a handy reference in the preparation and maintenance of lawns.

REFERENCES

Lawns. Canada Department of Agriculture. Publication 1163. Available free of charge from the Queen's Printer.

Insect, Disease and Weed Control for the Home Gardener. British Columbia Department of Agriculture.

Several books are also available on the subject including:

The Lawn Book by Robert W. Schery, published by The Macmillan Co., New York.

Lawns for Coastal British Columbia. Canada Department of Agriculture. Publication 1306. Available from the Queen's Printer free of charge.

Lawns – Amateur Gardening Picture Book. No. 13, by A. Bonar, B.Sc.(Hort.) published by W.H.&L. Collingridge Ltd., London.

1970 In The Nitobe Memorial Garden

The past year in the Nitobe Memorial Garden saw not only the tenth anniversary celebrations of the Garden but also a very active participation of the public in the Garden. Some 88,351 people visited the Garden in 1970. Of this total more than 13,000 were members of the staff at the University indicating that it is a popular place for University personnel to visit. The Vancouver Ikebana Association continue to provide weekly floral displays in the tea house.

In spite of the heavy traffic on particularly pleasant weekends the Garden is continuing to develop in maturity and Mr. Roy Sumi and Mr. Sam Oyama, our two gardeners, have been instrumental in maintaining the Garden in excellent condition.

During the year limited vandalism occurred in the Garden and as the Garden matures we are hopeful that less of this will occur.

It is particularly pleasing to see the large number of school children who visit the Garden each year. The Nitobe Garden gives a unique opportunity to students to see a traditional example of Japanese landscape architecture. We have had many interesting comments from students regarding their visits to the Garden. I think the following letter from a student of an elementary school in Coquitlam probably best sums up many people's impression of the Garden. In addition to a series of letters received from this school a number of drawings of the Garden from a child's point of view were received and one pictorial representation is shown.

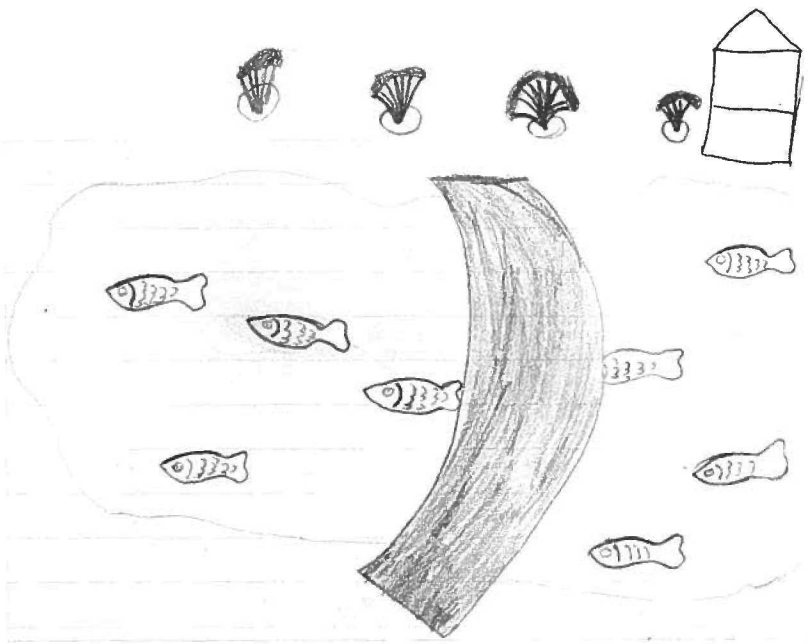
We hope that schools will continue to use the Garden and we welcome the candid comments of children who come to U.B.C.

Burquitlam School,
550 Thompson Ave.,
Coquitlam, B.C.
May 13th, 1971.

Manager,
Nitoba Memorial Gardens
University of B.C.
Vancouver, B.C.
Dear Sir:

Thank you for letting us come. We all liked the garden very much. This is what I liked. I liked the fish in the pond and the caterpilers. To tell the trouth I liked all of it.

Sincerely yours,
Janice Krutow.



Picture by Ingrid Moe.

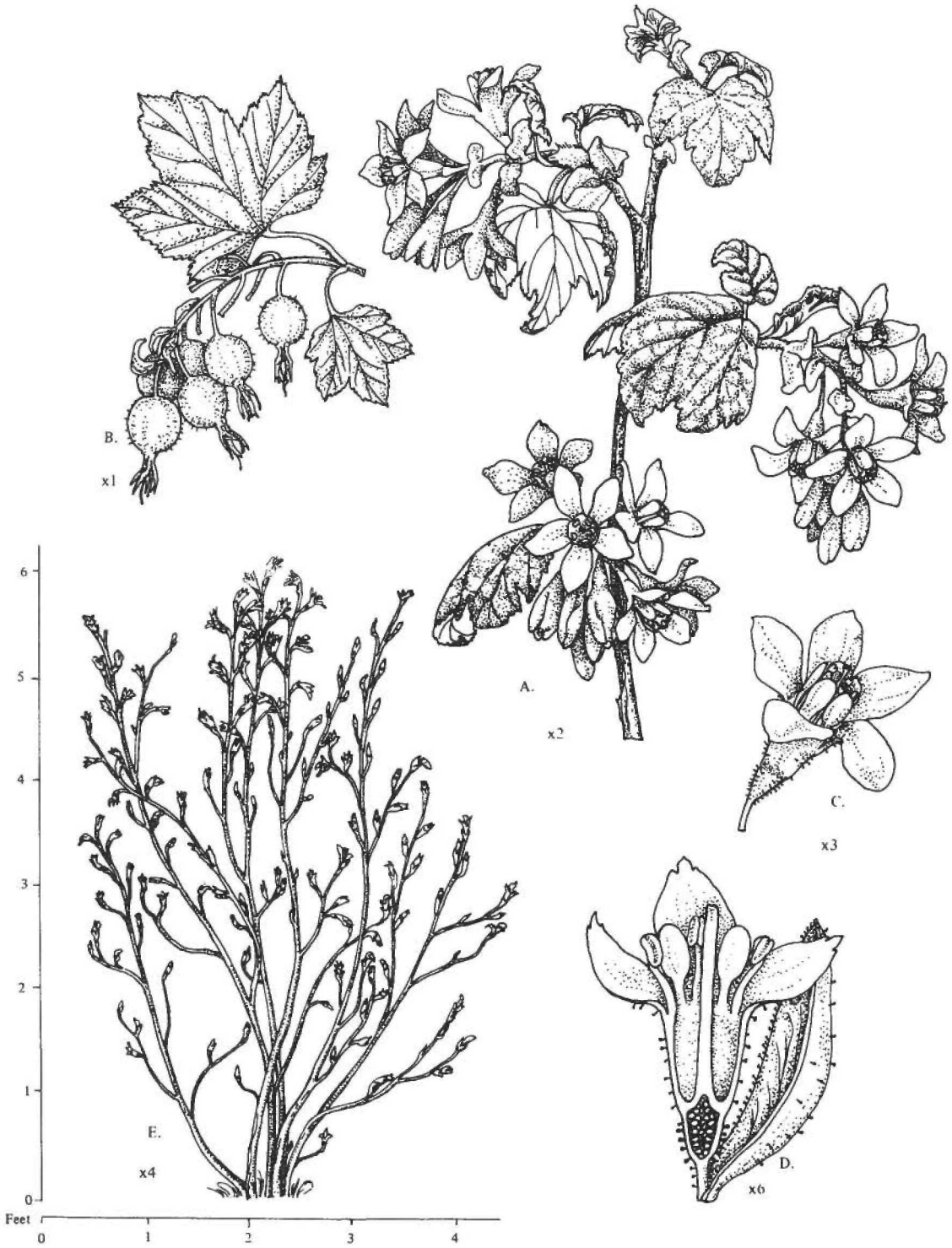


Figure 1. *Ribes sanguineum* A. floral racemes. B. cluster of fruits and detail of leaf venation. C. single flower. D. longitudinal section through one flower. E. typical habit of shrub.

Ribes sanguineum Pursh

'RED FLOWERING CURRANT' *or* 'OREGON CURRANT'
Member of the Family Grossulariaceae

Natural Distribution

Ribes sanguineum occurs from western British Columbia to the Coast Range of California south of San Francisco and east to the eastern slopes of the Cascades in Washington and north Oregon, but only west of the crest southward. In British Columbia it is typically a coast species, but is also found at New Denver and on the Arrow Lakes in the interior.

Habitat

The habitat is characterised as the Humid Transition Zone. Within this zone *Ribes sanguineum* is found in open to wooded, moist to rather dry valleys and lower mountain slopes. *Ribes sanguineum* occurs up to about 6,000 feet in Yellow Pine and Fir forests. In British Columbia Red Flowering Currant usually grows in fairly dry soils.

Description

An erect, unarmed loosely branched deciduous shrub, 1 - 3 (- 4)m high. It usually has a bushy appearance.

The root system is fibrous and shallow when young, becoming widespreading with age.

The bark is reddish-brown becoming grey to almost black with age and is shredded.

Twigs are puberulent and glandular when young. The branchlets are more or less aromatic, especially after rain. The older twigs tend to become hollow inside.

Buds are ovoid, grey-puberulent, solitary, sessile when young but become very short-stalked in maturity and are covered with about six rather loose scales.

The leaves are (2-) 3 - 6(-8) cm broad, ovate to circular, 3 - 5 lobed with the lobes obtuse, more or less serrulate or dentate, palmately veined and alternate. The leaf base is cordate or nearly truncate. They are dark green and puberulent on the upper surface, much paler and pubescent to tomentulose with short dense hairs beneath. The stipules are glandular-bristly. The leaves are plicate (plaited) in the bud. The petiole is about as long as the leaf blade, puberulent and glandular.

Flowers are produced from March to June depending on the elevation. The inflorescence is a many-flowered raceme on a short lateral branch. It is erect or stiffly ascending at first then drooping, 3 - 10 cm long, pubescent-glandular. The bracts are narrowly ovate, 6 - 8 mm long, red or purplish and irregularly toothed. The pedicels are jointed and about as long as the bracts (5 - 10 mm). Flowers are about 12 mm long. The hypanthium is 3 - 5 mm long and scarcely as broad, red, tubular to slightly campanulate and pubescent. The lobes are ovate-elliptic to oblong or oblanceolate, subequal to the hypanthium, and spreading. The calyx is pale to deep-rose, more or less stipitate glandular and finely pubescent. Petals 5,

white to light rose, obovate-spatulate, entire or slightly erose, 2.5 - 3.5 mm long. Stamens 5, about equal to the petals, filaments pinkish and glabrous, anther lobes less than 1 mm long, oval. Styles 2, glabrous, connate almost to the stigmas. The ovary is inferior, covered with short stipitate glands, and contains many ovules.

Fruit a berry, blue-black with a whitish bloom, slightly glandular because of the presence of stipitate glands, smooth, 7 - 9 (-12) mm long. Many seeded. Floral parts persistent at the crown. Unpalatable.

Propagation

Seeds germinate readily, but fruits not always formed.

Cuttings may be taken from hardwood in late September or in October. Cuttings of the current year's growth and about 8" long and of the thickness of a pencil should be used. Alternatively, 4" cuttings of the greenwood in July or August may be used and placed in sandy soil in a warm sheltered frame under glass.

Budding and grafting are used if quick propagation of rare varieties is required.

In general, however, best propagative results have been from hardwood cuttings.

Transplantation

Ribes sanguineum is easy to transplant in spring and fall when young, but it is more difficult with large established shrubs.

Conditions for cultivation

Shrubs are relatively fast growing when young (2' - 3' per year), slowing to about 6" with age.

The recommended hardiness zone for *Ribes sanguineum* in Canada is 7 (Sherk and Buckley 1968). The shrub will grow in ordinary garden soil but prefers a moderately good loamy soil, pH 5.0 - 6.0, with some humidity, although it will grow in moist to dry conditions if the soil is right. Shrubs are tolerant of sun and light shade but may become very straggly (up to 5 m high) with poor flowering in deep shade. Each shrub should be planted initially in an area 4' to 8' square to allow room for development. Pruning is necessary only if shrubs are being used as a hedge, when plants should be sheared. If the shrub outgrows its allotted space then it may be cut back drastically after flowering – it is better to remove whole branches rather than small parts. Old straggly, but healthy bushes can be quickly rejuvenated in this way.

Landscape Value

Ribes sanguineum is one of the most beautiful native ornamentals (Hitchcock et al. 1961) and as such is an attractive ornamental shrub in the garden. The shrub may also be used in borders and shrubberies, preferably as a background filler, or planted as a hedge. In Europe, shrubs are sometimes trained on walls. Shrubs provide moderate shade and are quite resistant to wind and snow, although the joints of older branches are brittle and easily snapped by hand.

Availability

Only moderately available from local nurseries and then as one of the horticultural varieties.

Ornamental Cultivars

The colour of the flowers in the native state varies from very dark red to very pale pink, with occasional white specimens. Several of the colour phases have been propagated and sold commercially under descriptive horticultural names e.g. 'albescens' (syn. 'albidum') which has white flowers tinged with pink; 'King Edward VII' with flowers of a deeper crimson than the type and dwarfer growing; 'Pulborough Scarlet' with large clusters of bright crimson red flowers; 'Splendens' with rosy-crimson flowers in extra

long racemes. There is also at least one double-flowered variety – 'flore-pleno' with double red flowers. In addition, plants along the coast of California in Marin County tend to have somewhat less hairy leaves with broader and shorter lobes and a drooping raceme and have been called *R. sanguineum* var *glutinosum* (Benth.) Loud.

Diseases and Problems of Cultivation

Ribes sanguineum is one of only four species of *Ribes* recommended for planting in Canada. The other species serve as alternate hosts of white pine blister rust and are prohibited in certain regions.

The following insects and diseases have been reported on *Ribes sanguineum:*

1) *Capitophorus ribis* – 'Currant Aphid'. The leaves become curled, crinkled or humped up by the pinkish, yellowish or dark green aphid. The curled areas turn red.

2) *Nematus ribesii* – 'Currant worm'. A dark green caterpillar with black spots which eats small holes in the leaves.

3) *Cecidophyes ribis* – 'Currant bud mite' or 'gall mite'. Buds are swollen and do not open. The mites emerge in May or June. Cut out and burn all infested buds or shoots.

4) Seven species of scale insects are known to infest *Ribes.*

5) *Pseudopeziza ribis* – 'Anthracnose'. Leaves turn yellow, with circular brown or black spots and gradually fall. The lower leaves appear to become infested first. Collect and burn all fallen leaves.

6) *Cronartium ribicola* – 'Rust'. Known to occur on the British Columbia coast (H.N.W. Toms. C.D.A. 1964) but probably not very important. The underside of the leaves become covered with dusty brown pustules, and older leaves are more susceptible. The alternate host is white pine, therefore it is not found when either the pine or the currant is absent.

The generic name *Ribes* is probably derived from 'ribas' the old Arabic name for *Rheum ribes*, although some authorities suppose it to be the Latinized form of 'riebs', an old German word for currant. A. de Candolle, according to Fernald (Gray's Manual of Botany), said that *Ribes* came from the old Danish colloquial 'ribs' for the red currant.

The type locality for *Ribes sanguineum* is on the Columbia River.

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Botanical Garden News and Notes

Nursery – The new nursery has now come into operation. A small work building and attached propagation house has been completed. The installation of a fibreglass covered greenhouse for propagation and research work is nearing completion. Cold frames are being installed and the complete tiling and drainage of the nursery will be a summer/fall project for the Garden.

Main Garden – During the spring, clearing of the main garden site was initiated. Special attention has been devoted to retention of good native tree specimens to provide an established environment for the collection of native British Columbian plants. The architectural and landscape plans for the main garden are scheduled to be completed in January/February 1972.

International Alpine Garden Plant Conference – Three members of the Botanical Garden staff, Dr. Roy L. Taylor, Mr. K. Wilson and Dr. C.J. Marchant attended the 4th International Conference held in April at Harrogate in England.

Many of the major gardens in England and Scotland were visited. Particular attention was directed to the study of the development and operation of specialized collections in gardens and the use of gardens by university personnel and the public. It was obvious that the problems of dissemination of information and orientation of visitors to gardens has not been adequately resolved in many gardens. The new Plant Exhibition Hall at the Royal Botanic Gardens, Edinburgh, is a major step forward in presenting to the visitor to the garden the basic concepts of plants and their relation to man. There is an increasing demand by the public for facilities to provide such information and it is something which gardens must emphasize more strongly in their future developments.

New Appointments

Dr. John W. Neill – The Botanical Garden is pleased to announce the appointment of Dr. Neill as a Research Scientist (Horticulture) to the staff. Dr. Neill has played a continuing role of providing expertise for the development of landscape elements for the University. He is nationally recognized as an authority on horticultural material and has been active in the development of the B.C. Society of Landscape Architects. Dr. Neill is an Associate Professor in the Department of Plant Science in the Faculty of Agricultural Sciences.

Mrs. Marilyn G. Hirsekorn – Mrs. Hirsekorn joined the staff as research assistant to Dr. C.J. Marchant.

Plant Accession System – Continuing progress has been made on the development of a computer based plant accession system for the Botanical Garden. Mr. Stephen Sziklai is continuing to work with the Botanical Garden staff on the development of programs for this system. The program has now been completed and is operational and the first complete run of material in the Botanical Garden has been produced.

CLIMATOLOGICAL SUMMARY *

Data *1971*	*January*	*February*	*March*
Mean temperature	36.40°F	39.95°F	39.5°F
Highest temperature	52°F	50°F	55°F
Lowest temperature	13°F	24°F	13°F
Grass minimum temperature	12°F	15°F	7°F
Total rainfall/No. days with rainfall	6.22/18	4.58/16	6.66/20
Total snowfall/No. days with snowfall	40.15/6	15.8/5	8.8/4
Total hours bright sunshine/possible	39.3/265.39	86.2/278.24	141.3/361.16
Mean mileage of wind at 3′	82.2	81.8	99.5
Mean mileage of wind at 40′	120.9	122.4	142.3

** Site: The University of British Columbia, Vancouver, B.C., Canada.*
Position: lat. 49° 15′29″N; long. 123° 14′58″W. Elevation: 342.6′

Botanical Garden Staff

Director
Dr. Roy L. Taylor

Supervisor of Operations
Mr. Kenneth Wilson

Research Scientist (Cytogenetics)
Dr. Christopher J. Marchant

Research Scientist (Horticulture)
Dr. John W. Neill

Research Assistants
Mrs. Marilyn G. Hirsekorn
Mrs. Sylvia Taylor

Secretary to the Office
Mrs. Morag L. Brown

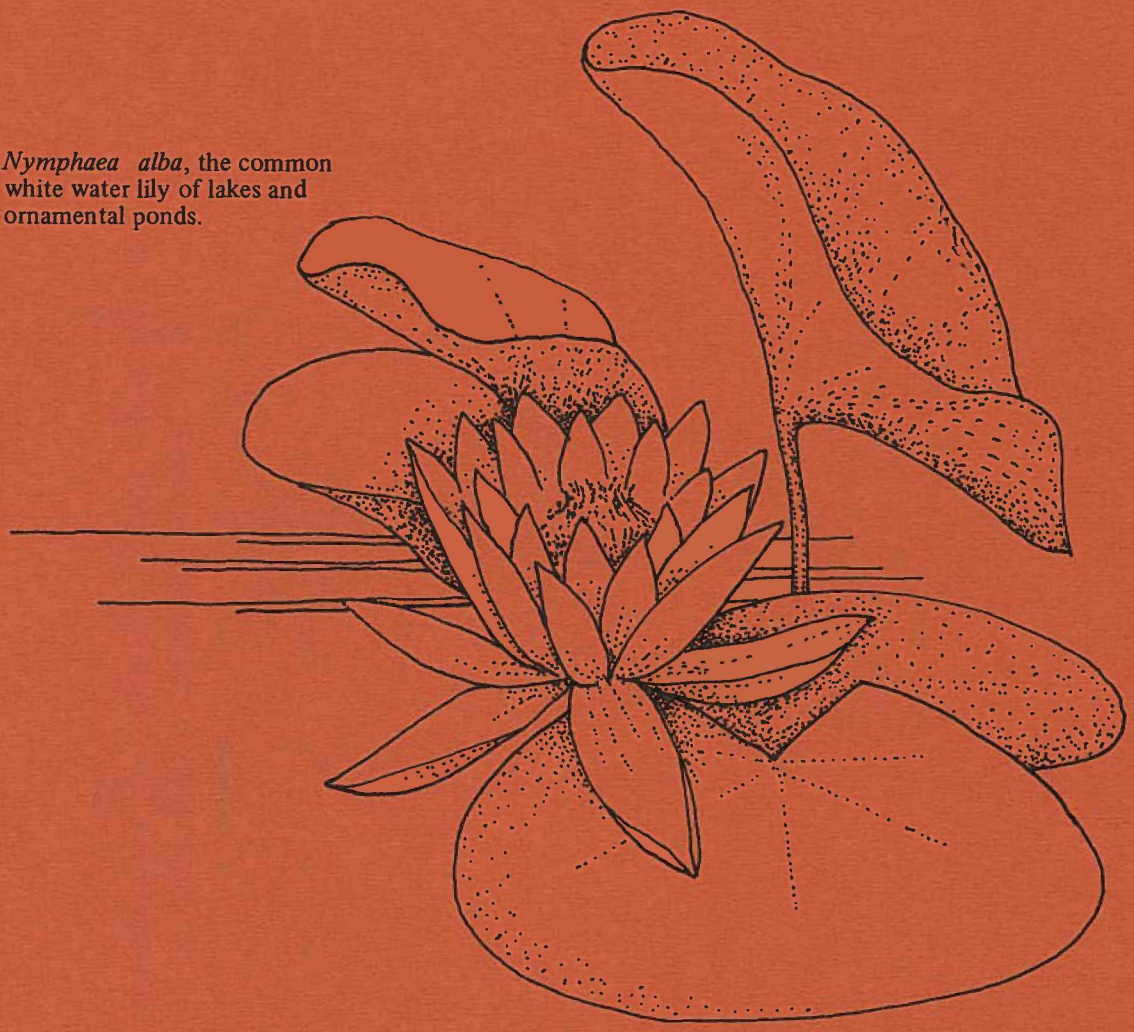
Seed Exchange Program
Miss Evelyn Jack

Plant Accession System
Mrs. Annie Y.M. Cheng

Senior Gardener
Mr. James O'Friel

Gardeners
Mr. Leonard Gibbs
Mr. Sam Oyama
Mr. Tomomichi Sumi
Mr. David Tarrant
Mr. Isao Watanabe

Lithophragma parviflorum, the 'Star of Bethlehem', an attractive early spring flowering perennial found in southern B.C.



Nymphaea alba, the common white water lily of lakes and ornamental ponds.

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Volume 2 Number 1 *Spring* 1971

Contents

Lawns 1
1970 In The Nitobe Memorial Garden 3
Ribes sanguineum 5
Botanical Garden News and Notes 8
Climatological Summary 8

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