

**LIST OF HERBACEOUS PERENNIALS;
TESTED IN THE ARBORETUM AND BOTANIC
GARDEN; CENTRAL EXPERIMENTAL
FARM, OTTAWA, CANADA, WITH
DESCRIPTIONS OF FLOWERS, AND OTHER
NOTES; BULLETIN NO. 5, SECOND SERIES**

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List of Herbaceous Perennials; Tested in the Arboretum and Botanic Garden; Central Experimental Farm, Ottawa, Canada, with Descriptions of Flowers, and Other Notes; Bulletin No. 5, Second Series by W. T. Macoun

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W. T. MACOUN

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LIST
OF
HERBACEOUS PERENNIALS

TESTED IN THE

ARBORETUM AND BOTANIC GARDEN

Canada
" CENTRAL EXPERIMENTAL FARM

OTTAWA, CANADA

WITH DESCRIPTIONS OF FLOWERS, AND OTHER NOTES

BY

W. T. MACOUN

Horticulturist, and Curator of the Arboretum
and Botanic Garden

BULLETIN No. 5, SECOND SERIES

Bulletins of the Second Series treat of such subjects as are of interest to a limited class of readers, and will be mailed only to those to whom the information is likely to be useful. Copies may, however, be obtained by any one desiring them on application to the Director of Experimental Farms.

Published by direction of the Hon. SYDNEY A. FISHER, Minister of Agriculture, Ottawa, Ont.

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U.S. Agric. Dept.

To the Honourable
The Minister of Agriculture.

SIR,—I have the pleasure herewith of submitting for your approval Bulletin No. 5 of the Second Series, containing a list of the Herbaceous Plants which have been tested in the Arboretum and Botanic Garden at the Central Experimental Farm, during the past twenty years. This list has been prepared at my request by Mr. W. T. Macoun, Horticulturist of the Central Farm and Curator of the Arboretum and Botanic Garden.

In this list the species and varieties have been arranged alphabetically under their scientific names, and in all cases where common names could be found, these have also been given, together with the name of the country from whence the different species and varieties have been obtained.

This list of Perennial Plants is the result of much labour and painstaking effort on the part of the author. He has given, in addition to the botanical names of the species, the year when planted, the height to which the plant grows, the time of blooming and the colour of the flowers; also whether the plant is hardy or tender. In the introduction to the bulletin some very useful information is given, including brief notes on the planting and care of Herbaceous Perennial Plants.

It is hoped that the information presented in this bulletin will be helpful to all lovers of perennial plants and flowers, and that it will assist in the correct naming of varieties and be the means of bringing such useful and hardy species as are deserving of general cultivation, into greater prominence.

I have the honour to be

Your obedient servant,

WM. SAUNDERS,
Director of Experimental Farms.

INTRODUCTION.

There is a rapidly growing interest in flowers in Canada, and the increased demand for information regarding them during recent years is very marked. Children are being taught to care for flowers in the public schools, and many horticultural societies in the cities, towns and villages are awakening a greater interest in horticulture. There have also been lecturers sent to different parts of Canada to interest the people, who have spread much useful information. Much horticultural literature has been available in recent years in attractive books, and in the reports and bulletins issued free by the public institutions to whoever asked for them. These have all had their influence, and the result has been a growing desire on the part of Canadians to beautify their home surroundings by the planting of trees, shrubs and herbaceous plants.

The Central Experimental Farm has, for more than twenty years, been a bureau of information to those who sought for greater knowledge in growing plants, and in order that the information should be of the most practical and reliable character, experiments were begun in 1887 to determine the kinds of plants most desirable to grow.

A botanic garden comprising sixty-five acres of land was established in 1887, in which it was planned to test as many species and varieties of trees, shrubs and herbaceous plants as could be brought together there. In 1899 a list was published of the trees and shrubs which had been tested up to that time, with notes on their hardiness. The rapidly growing interest in herbaceous perennials has made it seem necessary to now publish a list of these plants, and in this bulletin 2,116 species and varieties representing 280 genera tested in the Arboretum and Botanic garden are recorded. This large collection has been obtained from botanic gardens, nurserymen, seedsmen and private individuals in many parts of the world, and while there is a large number of kinds yet to be obtained the collection is a very representative one. In the list which is here published it is probable that there are a few synonyms or duplicates, but as far as possible these have been eliminated. Some bulbs have been tested in the botanic garden and these are included in this list. These are for the most part botanical species, not many horticultural varieties having been tested in the perennial border.

The herbaceous perennial border in the botanic garden at Ottawa is about half a mile long and twelve feet wide. It has a southern and southeastern exposure, with a fine hedge of American arbor vitae, *Thuja occidentalis*, for a background. The soil varies from a clay loam to sandy loam, with a moist cool subsoil in most places, but the evergreen background reflects the heat in summer, and it is very hot, especially where the exposure is southern, which makes the plants sometime suffer from the heat in a dry time. On the other hand this hedge holds the snow in winter, and makes better protection for the plants than they would have without it. No special conditions are made for plants which might do better with them, all being treated alike. This fact should be borne in mind when consulting this bulletin, as it is probable that some plants would succeed in rockeries for instance that do not do well in the border. The border is laid

out in rows three feet apart, with the plants three feet apart in the rows, and from one to three plants of each kind are grown. The surface soil is kept loose throughout the summer with the hoe and rake to conserve moisture and destroy weeds, and the plants are staked when necessary to keep them from breaking down. On a few occasions it has been necessary to water part of the border, but generally speaking no artificial watering is done. Late in the autumn the plants, after the dead stalks are cut off, are mulched with about four inches of strawy manure or leaves for protection in winter, part of which is dug in in the spring. The plants in the border have not yet been arranged in botanical sequence, as the collection has been growing so rapidly that it would have been difficult to apportion the space required for each genus. As far as possible, however, the species and varieties of each genus are kept near together. The plants are well labelled with zinc labels, so that any one who is interested may learn the name of a plant. A record has been kept of the hardiness, growth and height of the plants, also the dates when the plants begin to bloom, and when the blooming season is over. Descriptions of the flowers have also been taken. With this information available it was felt that as much as possible of it should be included in this bulletin. The nomenclature used in this bulletin is that adopted by the Royal Gardens, Kew, in the Kew Guide and the Index Kewensis.

As far as possible the spelling of the names of horticultural varieties has been obtained from reliable sources, but it has not always been possible to trace up a variety. The common names employed are for the most part those found in the Kew Guide and *Encyclopædia of American Horticulture*. It has not been possible to identify all the plants in the border, hence it is probable that there are some errors in taking it for granted that a plant may be true to name when it is not. All available literature has been used to identify as many species and varieties as possible. It is hoped that any errors noticed by readers of this bulletin will be reported to the author so that they may be known. Plants mentioned in this bulletin are called 'hardy' if they live three seasons and more in the border at the Central Experimental Farm. There are a few exceptions to this rule. For instance a plant may be called hardy if it were only planted in the border in the botanic garden in 1908, should it be known that elsewhere on the Farm under almost similar conditions it has proved hardy. Plants are called 'half hardy' if they last for two seasons only. Sometimes, however, even if they have lasted longer than two seasons they are called half hardy if it is known that they have had special conditions in the border, such as greater protection from snow, than they would have under less favourable conditions. Plants are called 'tender' if they are killed out the first winter after planting. The height of the plant has, in most cases, been determined by actual measurement in the border, and the figures given usually represent the average of several years. In a few cases it has been necessary to obtain the height of a plant from some other source. The colours of the flowers are in most cases from descriptions made by the writer from the plants growing in the botanic garden. In recording the colours the 'Repertoire de Couleurs' and 'A chart of Correct Colours of Flowers' have been used for guidance. As the descriptions of the species and varieties of flowers in this bulletin are, however, not the original descriptions of them, it has not been thought desirable to adopt, in all cases, the terms used in the 'Repertoire de Couleurs,' which describe fine variations in colour, but, rather, to use more familiar terms that would be easily understood by the general public. The dates of blooming have been taken from several years' records. The first date represents the earliest date when a species or variety began to bloom in

the border at Ottawa, and the last date represents the close of the blooming season. These dates are not necessarily taken from the same year; in most cases they are not. The object is to give the range of blooming season. Years, when there was an extraordinarily early or late spring or a very long drought which affected the blooming season, were not taken into consideration.

In order to avoid the use of adjectives to describe the merits of the different plants, asterisks or stars have been used instead. The plants with three asterisks before the name are considered by the author to be the best for cultivation in the perennial border; those with two asterisks, the second best; those with one asterisk, third, and those without an asterisk are either considered not worthy of cultivation or of being of interest to botanists only, or have not been tested long enough to judge of their merits. In addition to these marks of merit, a list of one hundred of the best plants is given at the end of the bulletin, a list of the best fifty, and a list of the best twenty-five. There are also lists of the twelve best varieties of German iris; the twelve best varieties of pæonies, and a list of the twelve best varieties of perennial phlox, *Phlox paniculata (decussata)*. There are so many fine varieties of iris, pæonies and phlox that a list of the best twelve given by one person may not be the same as the list of another, as much depends on individual taste.

The author desires to acknowledge, and to express his appreciation of, the assistance given by Mr. Frank T. Shutt, Chemist, in illustrating this bulletin. All the photographs were taken by Mr. Shutt, and are of plants growing at the Central Experimental Farm. We wish also to acknowledge the services rendered by Mr. Frank Horn, foreman in the botanic garden, who has charge of the perennial border, and who for several years has kept the records of dates of blooming and height of the plants, and has also assisted in compiling the records used in this bulletin.

THE PLANTING AND CARE OF HARDY HERBACEOUS PERENNIALS.

As many of the persons who receive this bulletin may not have had much experience in gardening, and as the descriptions and illustrations of the flowers may lead some persons to grow herbaceous perennials who have not done so before, a few words in regard to the planting and care of them should prove useful.

No flower garden is complete without perennials. Even though the plot of ground be small, some of the space should be devoted to this useful and varied class of plants. Few flowers require as little care as hardy herbaceous perennials if given the proper conditions to start with. The soil should be a good loam which will not bake, and well drained, for thorough drainage is very essential. When planted, most perennials should be left undisturbed for a long time, hence the soil should be well prepared in the beginning by trenching and digging under a liberal supply of well rotted stable manure. Most perennials thrive best in full sunlight, and, where possible, they should be planted where they will get the most favoured conditions. A southern aspect is the most suitable, and where there is protection from the cold winds the plants do best. Planting may be done either in spring or autumn, but the month of September is the best month to plant most kinds of perennials. In making and planting a border it is most important to plant those kinds which will give a continuity of bloom from early in the spring until late in the autumn, and to arrange them so that they will be most effective. The dates of blooming, heights of the plants and colours of the flowers given in this bulletin will be a great aid to those who desire to make the most of the material they have or may get. In large borders the best effects are obtained by massing several plants of one colour or several varieties of one species, and also arranging for a continuity of bloom, but in smaller borders and where the number of plants is limited it is often not thought possible to get this, and sometimes one part of the border will be without bloom.

There are a number of good perennials which can be grown readily from seed, such as Iceland and Oriental Poppies; varieties of Columbine, *Coreopsis*, *Gaillardia*, *Campanula*, *Platycodon*, *Delphinium*, &c., and at a comparatively small outlay, and in two seasons many hundred plants may be grown from seed, which will furnish bloom from early in the spring until late in the autumn. The planting of small clumps of bulbs between the later blooming perennials also furnish bloom in the spring when flowers are most desired. A seed bed four feet wide and as long as desirable of good loamy soil which will not bake, and enclosed with six-inch boards, will be found a very suitable place for raising young plants. Seed should be sown in rows about six inches apart across the bed. Autumn is the best time to sow the seed, as it will be softened by the moisture then in the soil and cracked by frost before spring, and will then germinate readily, whereas if it were sown in the spring it may lie a whole year without germinating. The depth of sowing will depend on the seed. Very small seed merely needs enough soil to prevent its blowing away, while the larger seed may be sown half an inch deep. If sown much deeper most seed will not germinate. The young plants at the end or in the middle of the first season's growth may be either transplanted direct from the seed bed to the border or be pricked out about six inches apart into another bed and left growing for the remainder of the season or another year, by which time there will be fine strong plants. During the growing season the surface soil should be kept loose and free from weeds, and in the summer the taller growing plants will need staking, as fine specimens are liable to be broken by storms if this is neglected. When the plants have ceased blooming the old stalks should be cut off near to the ground. Just before permanent frost sets in, the border or bed should be given a dressing of about four inches of strawy manure or leaves. This will form a good mulch for the protection of the plants in winter and at the same time enrich the soil. The mulch ought not to be removed too soon in the spring, as often most of the damage done to perennials is at that season of the year when so much thawing and freezing takes place. After raking off the coarse material in the spring the shorter manure may be dug in to enrich the soil.

LIST
OF
HERBACEOUS PERENNIALS

TESTED IN THE
ARBORETUM AND BOTANIC GARDEN
CENTRAL EXPERIMENTAL FARM
OTTAWA

WITH
DESCRIPTIONS OF FLOWERS AND OTHER NOTES

ABBREVIATIONS USED.—Pl., planted. Ht., height. Fl., flower. Fol., foliage. In., inch or inches. Ft., foot or feet. Syn., synonym. *, desirable. **, more desirable. ***, most desirable.

ACHILLEA, L. MILFOIL, YARROW.

(*Compositae.*)

A. argentea, Law. = *Tanacetum argenteum*.

A. Clavenng., L. Europe.
Pl., 1898. Tender.

A. grandiflora, Bieb. Asia Minor.
Pl., 1907.

A. filipendulina, Lam. Orient.
Pl., 1897. Tender.

A. lanata, Spreng. Hab?
Pl., 1896. Hardy. Ht. 3 to 4 ft.
Fl. dull white; July 4 to Oct. 7.

A. magna, L. GREAT MILFOIL. Europe.
Pl., 1896. Hardy. Ht. 2 ft. Fl.
white; June 21 to Aug. 15.

A. micrantha, Willd. Orient, &c.
Syn. A. pubescens, Sibth.
Pl., 1896. Hardy. Ht. 2½ ft. Fl.
white; June 27 to Sept. 18.

***A. Millefolium rubra.**
Pl., 1895. Hardy. Ht. 2½ ft. Fl.
crimson; June 17 to Oct. 20.

A. mongolica, Fisch. = *A. sibirica*,
Ledeb.

ACHILLEA—Con.

A. nobilis, L. Europe, &c.
Pl., 1896. Hardy. Ht. 1½ to 2½ ft.
Fl. white; June 20 to Oct. 22.

***A. Ptarmica**, L. SNERZEWORT. North-
ern Hemisphere.
Pl., 1899. Hardy. Ht. 1½ ft. Fl.
white; June 20 to Sept. 19.

****A. Ptarmica flore pleno.**
Pl., 1894. Hardy. Ht. 2 to 2½ ft.
Fl. white, double; June 20 to
Oct. 3.

*****A. Ptarmica flore pleno The Pearl.**
Pl., 1895. Hardy. Ht. 2½ to 3 ft.
Fl. white, double; June 24 to
Oct. 3.

A. pubescens, Sibth. = *A. micrantha*.

****A. serrata plena.**
Pl., 1903. Hardy. Ht. 2½ ft. Fl.
white, double; June 16 to Aug.
21.

A. setacea, Waldst & Kit. Europe.
Pl., 1902. Hardy. Ht. 2 ft. Fl.
white; June 30 to Oct. 27.