

handled in conjunction with planned explorations under this cooperative program. Recommendations should be directed to the Plant Introduction Section, New Crops Research Branch, Plant Industry Station, Beltsville, Maryland. Consideration can then be given by those concerned with planning these explorations. Additional explorations are already being scheduled. One to West Europe will be conducted in 1959, one to northern Japan in 1960, while a Madagascar exploration is tentatively planned for 1961. If you have particular ornamental items of interest from these areas, requests should be directed to the address just mentioned.

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MODERATOR BUCKLEY: I have been most inspired. I had no idea how far the United States was going in introducing new plant materials. The problem is going to be, of course, getting these plants established in other countries.

Now we have a moment or two for questions from the floor.

MR. DAVID LEACH (Brooksville, Pennsylvania): I would like to know if you found any rhododendrons growing in the Auckland area?

DR. HODGE: We didn't get to Auckland. We hope to arrange a plant exploration to New Zealand for I understand the rhododendrons in this area are beautiful to behold. I would say one of the things we were particularly looking for were some of the select rhododendrons which have been in special collections, such as the Javanese rhododendrons. These would be of no use outdoors except in the tropics, although there were some native ones in Northern Australia. Some forms of these will be selected through cooperation with some of the botanical gardens in Brisbane.

MR. HOOGENDOORN: Two years ago in July when I went to the Canadian Rockies I noticed what I thought were rhododendrons in bloom. Do you know what variety this might be?

DR. HODGE: I have no idea, but I think maybe Francis de Vos might be able to help.

MR. de VOS: It could very well have been *Rhododendron albiflorum*. It is a very unusual species.

MODERATOR BUCKLEY: I purposely left my talk until the last so we can get this session over on time. I don't intend to be too elaborate about my own paper.

Moderator Buckley then presented his paper on the "Dominion Arboretum" and "Noteworthy Woody Ornamentals." (Applause)

THE DOMINION ARBORETUM

A. R. BUCKLEY

Dominion Arboretum and Botanic Garden

Ottawa, Canada

In 1886 when plans were being made to establish the Central Experimental Farm at Ottawa, a piece of land 65 acres in extent was set aside for the development of an Arboretum and Botanic Garden. It was felt that such a garden would play a very important part in agri-

culture and all its branches by the introduction of plants from all parts of the world, in order to test their hardiness and usefulness, as well as to exhibit to the general public a representative collection of exotic and native plants

Work started on the garden in 1887 under the direction of Dr. James Fletcher, botanist and entomologist of the Dominion Experimental Farms who, two years later, planted the first trees and shrubs. During the initial year of planting, about 200 species were set out, two specimens of each, placed in their individual generic groups. Quite a number of these first trees are still to be seen in the Arboretum in good state of health. Among these were the Black Walnut (*Juglans nigra*) Siebold's Walnut (*Juglans sieboldiana*), White Ash (*Fraxinus americana*) Maidenhair Tree (*Ginkgo biloba*) and some splendid stately oaks.

In 1898 the Arboretum and Botanic Garden was placed in charge of Dr. W. T. Macoun, later appointed as Dominion Horticulturist and Curator of the Arboretum. Under Dr. Macoun and with the assistance of the director of Experimental Farms, Dr. W. T. Saunders the Arboretum made good headway.

It was during this period in the year 1899, that one of the most outstanding contributions from the Arboretum was forthcoming. This was the publication of a catalogue of trees and shrubs tested in the Arboretum up to that time with notations as to their hardiness and suitability for this climate.

This list contained names of 3,071 species of trees and shrubs. Of these 1,465 were proven hardy, the rest either tender or half hardy, some had not been planted long enough to determine their hardiness.

During these early days institutions such as the Royal Botanic Gardens, Kew and the Arnold Arboretum, made most valuable contributions of seeds and plants. Large collections were also secured from nurseries such as Spaeth in Germany and Ellwanger and Barry in the United States.

After the death of Dr. W. T. Macoun the Arboretum was transferred to the Division of Botany and placed under the Chief of this Division who was then Dr. H. T. Gussow, the Dominion Botanist. Steady progress was made in increasing the collections and many early plant introductions were made through the medium of the Arboretum. At that time special attention was given to securing trees and shrubs suitable for western Canada. Thousands of Siberian Pea trees (*Caragana arborescens*) grown as windbreaks and hedges in the west have had their origin in seeds from the plants in the Dominion Arboretum. In 1911 seeds of the plants of the Arboretum were collected and a seed exchange initiated with foreign institutions.

In 1938 the Dominion Department of Agriculture was re-organized and the Division of Botany and Plant Pathology (including the Dominion Arboretum) was transferred from the Experimental Farm Branch to the newly created Science Service, a branch of the Department of which Dr. J. M. Swaine was director.

The Dominion Arboretum was originally located to the south of Ottawa between the Prince of Wales Highway (Route 16) and the

Rideau Canal. It is still bounded by these two points but is now almost in the centre of the city

The climate at Ottawa is a particularly tough one for trees and shrubs, although not as tough as some of the Prairie Provinces. For example, the average temperature for January is 12 degrees F. with a record low of 35 degrees below in 1935. The average July temperature is 68.6 degrees F. with an all time high of 102 degrees F. Annual rainfall is 34.89 and the annual average snowfall is 80.5 inches. The average January temperature of 12 degrees F. is similar to that of Moscow U.S.S.R.

The worst winter on record corresponds to the worst winter of many places in North America, that of 1933-34. In Ottawa that year not much snow had fallen and the temperatures remained at 20-30 below for a consistently long period. At that time a major part of the Apple Orchard at the Experimental Farm was killed and the *Malus-Pyrus-Sorbus* collection at the Arboretum almost wiped out. It is remarkable, however, that so many trees survived, since younger trees of many of the species would never withstand such temperatures. It would seem that individual trees build up a resistance against severe cold temperatures and the older they get the more resistant they become — to a point. Some trees during this period were killed back to ground level, however, and sent up new twigs that developed into trunks.

Work for the first forty years of the Arboretum's existence was centered mainly upon the plantings of new species and varieties and taking notes on hardiness, these included several thousand species and varieties of herbaceous perennials as well as tree and shrubs. In 1938 a complete re-assessment was given the entire planting, and a mapping program carried out. The whole Arboretum was divided in 200 ft squares and all the plants correctly mapped in the squares. The old system of enumeration was abandoned and a new system which showed at a glance the year of planting, origin and reference of each plant, was introduced.

It soon became apparent that if any publication was to be forthcoming a thorough taxonomic survey would have to be made for it was perfectly obvious that many plants were wrongly labelled. Even today this work is not finished although completion is very near at hand as far as the older trees are concerned.

Embossed labels have now replaced the old zinc type — 2 identification labels are placed on every plant and each specimen correctly identified is given a display label approximately 5 x 3 inches on which is engraved the name, common name, location and accession number. Labelling is still quite a problem as it is in most public places.

Today the Arboretum collection serves as a source of supply for correctly named material for research in forestry, forest tree breeding and many phases of horticulture. Programs of research include hardiness investigations, propagation, ground covers, mulches and cultivation problems.

The Arboretum also offers to the general public a retreat from the whirl of city life. Large swards of lawn, a thousand large shady trees, lovely panoramas of the Ottawa valley from its lookouts, await those who are in search of a place in which to rest or picnic.

Last year through the sponsorship of a local newspaper Hi Fi was introduced to the Arboretum. Four large units, each containing six loudspeakers were hidden in the trees and on Sunday afternoons a program of music descended upon the throngs who sat on the grass, branches, or on their own lawn chairs brought for the purpose. This program was so popular that it will most likely be continued.

The value of some such gimmick to Arboretums in general, is perhaps incalculable, but there is no doubt in my mind that we were almost swamped with phone calls about trees and shrubs every Monday morning by visitors who would never have otherwise stepped out of their cars.

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(*Editor's Note.* Mr. Buckley distributed a descriptive list of select trees and shrubs growing at the Dominion Arboretum.)

MODERATOR BUCKLEY: Are there any questions?

MR. JAMES WELLS: I am interested in *Daphne houtteana*. I have the plant, which I obtained from Canada. I would like to know its origin.

MODERATOR BUCKLEY: It was developed at a nursery in British Columbia. I have forgotten the natural habitat, but I can tell you later since I have it in my notes.

MR. WELLS: Is it hardy?

MODERATOR BUCKLEY: It has about the same hardiness as *Daphne odora*.

MR. K. B. FISHER: I would like to ask how long you have had *Daphne burkwoodi* in Ottawa?

MODERATOR BUCKLEY: I would say not more than three or four years.

If there are no further questions, I will turn the meeting over to Hugh Mr. President.

PRESIDENT STEAVENSON: Thank you, Mr. Buckley, for that very excellent dissertation and for your fine panel. As you all know we have our question box program scheduled for this evening at eight o'clock.

Are there any announcements before we adjourn? If not, we will stand adjourned until eight o'clock.

(The meeting recessed at four-fifty o'clock.)