



Annual Report 1950-1951

TO THE PROVOST OF THE UNIVERSITY:

SIR,

The Arboretum grounds have been well cared for during the past year, and in spite of several dry summers most of the collections are in excellent condition. Chemical weed killers have been used to control Poison Ivy and other weed plants. The continued use of the "blitzer" has kept the grass under control and has greatly improved the appearance of the grounds. The mist blower has permitted better control of insect pests and plant diseases, although "fire blight" was prevalent in some of the apples and pears for the first time in many years.

During the year we received 640 species and varieties of trees and shrubs including about two hundred requested from American nurserymen. These new acquisitions are tested in nurseries at the Case Estate and the better ones moved to the Arboretum. One hundred and fifty different kinds of trees and shrubs were added to the Arboretum collections. [Dr. Wyman](#) spent three months in Europe during the spring of 1951, visiting nurseries, estates, and botanical gardens. He found over 600 varieties of woody plants not readily obtained in this country. These will be tested for hardiness next year in our nurseries. Every attempt is being made to make our collection as complete as possible. More of the propagating work is being done at the Case estates. More than 800 hybrid seedlings were planted in the nurseries for final testing. Much of the experimental work of the Bussey Institute, the Cabot Foundation, and the Division of Landscape Architecture is being carried on at the Case estate.

The photographic records were continued on a large scale, using both black and white pictures and color transparencies. Dr. Wyman took 866 kodachromes and 750 black and white photographs while in Europe. The usual number of *Arnoldia* has been published, and some of them have been reprinted in other journals. Other popular articles have been published by various members of the staff. The spring Field Class was attended by forty people, and the annual Horticultural Field Day attracted a hundred and twenty-five horticulturists. We have had many visitors, many of them from abroad, during the spring and summer months.

BOTANICAL ACTIVITIES AT HARVARD

Mr. Fillmore has sent 264 shipments of plant material, including 948 species and varieties, to cooperating institutions in twenty countries. A total of 13,108 plants were propagated. At the suggestion of [Mr. Fordham](#), the accession records have been simplified and revised.

During the year Mr. Roger Coggeshall joined the staff as Assistant Propagator. Mr. Fillmore is continuing his experimental work on propagation. Mr. Lipp for many years was able to obtain good germination of seeds which normally germinate with difficulty by exposing them to sunlight - a method recently confirmed by a Finnish forester.

The tetraploid Forsythia produced at the Arboretum was awarded the Lindley Silver Medal of the Royal Horticultural Society. The triploids recently developed are even better than the tetraploid. Triploid apples obtained by crossing tetraploid *Malus Sargentii* with various diploid ornamental crabs have resulted in some very attractive new hybrids. A tetraploid Magnolia produced nearly ten years ago has unusually large flowers and leaves, and one of the hybrid magnolias has attracted considerable attention. The use of tree lilacs for rootstocks of common lilacs and the use of *Prunus tomentosa* as a rootstock for *Prunus triloba* have now been tested for five years and appear to be entirely compatible. The tree forms produced by these rootstocks are most attractive.

Professor Bailey has continued his investigations of the comparative morphology of the dicotyledons, devoting particular attention to the vasculature of seedlings and of leaves. Methods have been developed for clearing entire seedlings and young vegetative shoots which clearly reveal successive stages in the development of the tracheary tissue. Much time and effort has been devoted during the year to improving the condition of the wood and slide collections. The cataloguing of accessions has been completed. During the year 9,418 mounted specimens were added to the herbarium, which now numbers 663,972 sheets. A total of 16,255 specimens were received, of which 233 were sent for identification, 5,072 were obtained by purchase or subsidy, and 8,498 came as exchange. Of this total only 1,108 were American, 432 were European, and 351 were African plants. Most of the specimens received represent the flora of Asia (8304) and that of Australia and the Pacific Islands (6030).

Among the accessions of particular interest may be mentioned 2,713 specimens from the East Indies received from the Herbarium Bogoriense, Java, 2,314 plants of Central Asia and Siberia from the Komarov Botanical Institute, Leningrad, 2,350 specimens from the rain forests of southern Bombay State, India, from Father H. Santapau, and 983 specimens from northern Japan sent by Prof. H. Hara, Tokyo.

A total of 3,317 specimens were sent out during the year. Of these 1,677 were transferred to the Gray Herbarium and 462 (all orchids) to the Ames Orchid Herbarium. In exchange 1,178 sheets were sent out, these mainly to foreign institutions. From fourteen different institutions the Arboretum had twenty-six requests for the loan of its herbarium material. The total specimens involved numbered 2,513, of which 2,068 went to twelve

American and 445 to two foreign institutions. For the use of our staff forty-six lots, totaling 2,116 herbarium specimens, were borrowed. These consisted of 1338 specimens borrowed from nine American and 778 from five foreign herbaria. As a president of the Section on Nomenclature, [Dr. Merrill](#) represented the Arboretum at the International Botanical Congress in Stockholm during July, 1950. Later he worked in herbaria in Holland and England. The research of Dr. Johnston was concerned with Asiatic Boraginaceae and that of Dr. Kobuski chiefly with Asiatic *Theaceae*. Dr. Perry studied South Pacific Myrtaceae and Urticaceae. Dr. Hu began monographic work on Philadelphus. Dr. Albert Steward, first as part-time staff member and later as a Guggenheim Fellow, used the herbarium and library in the preparation of a Flora of the Lower Yangtse Valley, China. Dr. Verdoorn took an active part in the Botanical Congress in Stockholm. He is working on a revised edition of his World List of Plant Science Institutions and Societies.

During the fiscal year ended June 30, 1951, there were 385 volumes added to the library; these were acquired through purchase, exchange, gifts, or binding. The total number of bound volumes on the shelves of the library is 47,728. Two hundred twenty five pamphlets were filed, making a total of 14,867 pamphlets on file. Six hundred fifty three cards were added to the main catalogue and 5,134 to the Gray Herbarium species cards. It is evident that some restrictions may have to be put upon loans to libraries not in the vicinity of the Arnold Arboretum. Most of the interlibrary loans are out-going, since we seldom need any books which are not available in some of the other Harvard libraries. [Our printed catalogue](#) makes it easy for others to merely write to the Librarian at the Arnold Arboretum for a wanted volume, even though it might be found in a library nearer home. Six hundred fifteen volumes were borrowed or loaned. Many of the books in the main reading room, those representing the floras of the world, have been re-classified and numbered; more rearranging was done to relieve the overcrowding of the shelves – some of the seldom used books being shifted to the upper library. The Friends of the Arnold Arboretum contributed \$8,546.00 for special planting projects and the care of these collections.

KARL SAX, Director