



Annual Report 1946-1947

TO THE PRESIDENT OF THE UNIVERSITY:

SIR,

During the past year many changes have occurred at the Arnold Arboretum. [Dr. Merrill](#) retired as director on reaching the age of 70, but remains as Arnold Professor of Botany. [Mr. E. J. Palmer](#) retired at the age of 73, but will remain another year for a special part-time project. Dr. Leon Croizat and Mr. Vladimir Asmous resigned during the year. Dr. Charlotte G. Nast, Curator of the Wood Collections resigned to accept a teaching position. None of the resulting vacancies has been filled. We have, however, appointed Mr. Richard Fillmore to succeed the late [Mr. Judd](#) as Propagator, and Mrs. Beatrix Farrand continues to serve as Consulting Landscape Gardener.

The major project during the year has been the removal of duplicate and overcrowded plants. Some of the extra shrubs were moved to nursery rows at the Case Estate in Weston. The larger trees removed in the thinning operations were cut up for firewood, the sale of which will pay part of the costs of removing.

Some new plantings have been made around the Administration Building where we plan to feature the introductions and new hybrids developed by the Arnold Arboretum. A planting of species especially suitable as ground-covers along the road will be extended along the meadow as funds permit.

The opening of vistas and thinning of overcrowded areas, as well as the new plantings, has been done in accord with the suggestions of our consulting landscape gardener, Mrs. Beatrix Farrand.

During the current year 155 species and varieties of plants were propagated. We received 267 species or varieties from other institutions and distributed 283.

Photographs in natural color are made for records and for display. There is an increasing need also for black-and-white prints for use in publications and, since we have few good pictures for such purposes, we plan to expand our collection during the coming year.

The National Shade Tree Conference, attended by over 500 delegates, held its field demonstration in the Arnold Arboretum last summer.

The Case Estate in Weston has proved to be a valuable adjunct to the Arboretum. Miss Louisa Case died in the fall of 1946 and left additional land and buildings to the Arboretum, together with farm equipment and a substantial endowment. Approximately 46 acres of land were sold to the town of Weston at a nominal price for school purposes, but 145 acres remain in the Case Estates. Much of this land is suitable for experimental work.

Semi-permanent plantings of Ribes and Berberis have been started at the Case Estate, together with other species which should not be given valuable and all too limited display space at the Arnold Arboretum proper. Various types of experimental work has been started on cultural practices and fertilizers. Some experimental work of the [Bussey Institution](#) and Cabot Foundation is also now being done at Weston. The Department of Landscape Architecture of Harvard University has been given the use of an area for demonstration work.

Both at the Arnold Arboretum and at the Case Estates in Weston we are using more and more mechanized equipment. Power mowers, cultivators, and saws permit more work to be accomplished with fewer men. Weed-killing sprays, flame throwers, and a mulch of spent hops are used to control weeds with a minimum of hand labor.

The plant breeding program is beginning to pay dividends in new varieties of ornamental plants. Last spring two new Forsythias, Arnold Giant and Arnold Dwarf were released to cooperating nurserymen. Arnold Giant is a tetraploid form of Forsythia intermedia produced by colchicine treatment. Arnold Dwarf is a delicate dwarf Forsythia produced by species hybridization. Next spring we shall distribute propagating stock of a new dwarf flowering cherry of exceptional merit.

Cytogenetic studies of Sorbus-Aronia hybrids have aided in determining the relationships of these genera. Grafting experiments in the *Pomoideae* and in Prunus have proved to be of theoretical interest and of possible economic value. The common lilacs budded on tree lilacs continue to make good growth.

Professor Bailey has continued his investigations of the comparative morphology of various dicotyledonous families, with special emphasis upon salient trends of structural specialization in carpels. Dr. B. G. L. Swamy, a Government of India Fellow, is making a comprehensive study of the Saxifragaceae and related families; Mr. James E. Canright, one of the *Magnoliaceae*; and Mr. R. W. Vander Wyk, of the *Annonaceae*. Mr. William Spackman, Jr., is continuing his investigations of dicotyledonous woods, with special reference to problems of identifying Mesozoic and Tertiary fossils. The work in comparative morphology has been seriously handicapped during the year by the loss of Dr. Charlotte G. Nast, Curator of the Wood Collections, who has accepted a position at the Nebraska State Teachers College at a much higher salary.

[Dr. Merrill](#) has continued his taxonomic and bibliographic work and completed his *Index Rafinesquianus*. His extensive *Botanical Bibliography of the Islands of the Pacific* was published by the Smithsonian Institution early in 1947. During the year he was honored by election to

foreign membership in the Royal Society of Edinburgh, the Royal Swedish Academy of Sciences, and was appointed as honorary collaborator of the Botanical Garden, Buitenzorg, Java. He also received the George Robert White Medal of Honor from the Massachusetts Horticultural Society in appreciation of his services to horticulture.

During the past year [Professor Rehder](#) completed his bibliography of cultivated trees and shrubs, and part of this work is now in proof. The catalogue begun by Professor Rehder, containing all available references in the periodical literature useful in the classification and identification of woody plants, now contains 144,551 cards--an increase of 3,526 during the past year.

Professor Johnston has worked on the flora of Panama, and has completed a study of the plants of San Jose Island. [Professor Raup](#)'s "Botany of the Southwestern Mackenzie" has been published in *Sargentia*. Dr. Smith completed a study of *Illicium*, *Schisandra*, and *Kadsura*, before he left in late February for a year of field work in Fiji. Dr. Kobuski has been occupied with editorial and curatorial duties, but is continuing his work on the Theaceae. [Mr. Palmer](#) is working on the taxonomy of *Crataegus* and *Quercus*. Dr. Perry is studying the Papuan collections made during the Richard Archbold Expeditions, while Dr. Allen is continuing work on South American *Lauraceae*. Dr. Frans Verdoorn is working on his *Index Botanicorum*, to which more than 120,000 references were added during the year.

The herbarium now contains 626,999 specimens. A total of 35,898 specimens were received by exchange, purchase or for identification. The Arboretum sent 13,046 specimens to other institutions.

At the end of the fiscal year the library contained 46,520 bound volumes, 200 unbound volumes, and about 4,000 pamphlets. Through the Interlibrary Loan System we loaned 137 volumes in addition to 435 volumes to other Harvard libraries. We borrowed 188 volumes from other libraries, including those of Harvard. Several exhibits of our rare books were on display for the Visiting Committee, various Garden Clubs and the Massachusetts Horticultural Society visitors. With the end of the war the flow of visitors and students has increased greatly. Among our outstanding gifts were a Gazetteer of Chinese Place Names from the Army Map Service, and six volumes of *Backer's Flora of Java*--a gift from Dr. Verdoorn.

Endowment funds received last year included \$55,464.91 from the Marion Roby Case Estate, \$10,350.00 from the James B. Case Fund, by sale of property to the Town of Weston, \$150,000.00 from the Katherine T. Balch bequest, and contributions to the William H. Judd Memorial Fund amounting to \$2,862.50--a total of \$218,577.41 for the fiscal year. In addition gifts for current use totalled \$4,970.25, including \$2,320.00 for cultural purposes, a grant of \$500.00 from the Bache Fund of the National Academy for [Dr. Merrill](#)'s work, and a grant of \$600.00 from the same fund to Dr. A. C. Smith. Harrison W. Smith contributed \$1,500.00 for Chinese exploration work, and the publication fund was increased by \$50.25.

The total income for the year was \$152,409.43, while expenses amounted to \$170,914.89, leaving an apparent deficit of \$18,505.46. The deficit was covered by drawing on a credit balance built up during the war years, and by drawing on contributions for cultural purposes which had also accumulated during the war years.

KARL SAX, Director