



Annual Report 1953-1954

TO THE PROVOST OF THE UNIVERSITY:

SIR,

The fiscal year of 1953-54 was a momentous one for the Arnold Arboretum, marking as it did the solution of longstanding problems of space, housing and care of collections which have for over a decade hindered the work of the Arnold Arboretum.

On January 9, 1953, the President and Fellows of Harvard College (the trustee of the Arnold Arboretum), in a detailed and careful vote, stated that "In the exercise of its duties as trustee of the endowment funds held in trust for the purposes of the Arnold Arboretum, the Corporation determines that it is in the best interests of the Arboretum and will promote the purposes of its endowment to remove to a central building in Cambridge the main body of the library and herbarium of the Arboretum related to research, and to retain in Jamaica Plain such books and specimens as may be required to provide there a working library and herbarium."

[This proposal](#) had long been advocated as a solution to the problems of the Arboretum which previous directors have stated in their annual reports. The Administration Building in the Arboretum had become overcrowded. Floor space was no longer available for the addition of steel cases, and as temporary expedients, display cases and cardboard herbarium boxes were used to store approximately 200% of the mounted herbarium and all of the material awaiting determination and mounting. The library was equally crowded to the point where it was becoming difficult to care for the valuable books properly. This latter condition had been alleviated by transferring, for use and storage, many of the Arboretum books to the Harvard Forest and to Cambridge. However, even with these measures, additional shelf space could not be found in the Administration Building. Working space for staff members had become restricted by the growth of the collections and the library. To solve these and other problems, the Corporation vote was welcomed by a majority of the staff of the Arboretum. The vote of the Harvard Corporation called for the appointment of an Arnold Professor, a post unoccupied since the retirement in 1946 of [Dr. E.D. Merrill](#).

In October the Corporation, with the approval of the Board of Overseers, appointed Richard Alden Howard as Arnold Professor and Director of the Arboretum. Dr. Howard was also appointed Professor of Dendrology within Harvard College. All appointments were effective February 1, 1954.

The Harvard Corporation had voted that a portion of the Herbarium and library was to be moved to a new building in Cambridge known as the Harvard University Herbarium Building. One million dollars was assigned from unrestricted funds of the University for the construction and equipping of this building. The Arboretum collections and library would thereby receive adequate housing and the staff working equipment at no capital cost to the Arnold Arboretum endowment. Construction of the building was completed in February 1954. The Arnold Professor, by vote of the Corporation, was to implement the move.

Serious consideration was then given by the director and the staff of the Arboretum to the selection of books and herbarium specimens to be retained in Jamaica Plain.

When tentative plans were formulated, Dr. Howard, in accordance with the vote of the Corporation, consulted with Dr. William J. Robbins, Director of the New York Botanical Garden, regarding what specimens were to be left in Jamaica Plain as a working herbarium. He also consulted with Dr. Keyes Metcalf, Director of the Harvard University Libraries, regarding what books were to be retained in Jamaica Plain. Each of these conferences produced a final plan which determined the nature of the Arboretum's collections of specimens and books in each of the two locations. Dr. Robbins and Dr. Howard determined that the vote of the Harvard Corporation could be best implemented by establishing in Jamaica Plain a working herbarium devoted to the study and advancement of knowledge of horticultural plants. To that end they made seven recommendations as follows:

- 1. That all cultivated specimens in the herbarium of the Arnold Arboretum representing taxa now under cultivation in the Arboretum and elsewhere be retained in Jamaica Plain.*
- 2. That sufficient additional specimens of taxa related to a given cultivated group be retained to insure working control of that group.*
- 3. That spontaneous or native specimens be used to supplement poorly represented cultivated taxa.*
- 4. That representative specimens of all taxa of certain major cultivated groups be retained. For example, it is proposed to have in Jamaica Plain all material of the difficult genus *Crataegus*, and to have representatives of all taxa of the *Conifers*, *Rosa*, *Rhododendron*, *Cotoneaster*, *Quercus*, *Syringa*, *Viburnum*, *Lonicera*, *Fraxinus* and *Ulmus*.*
- 5. That additional specimens be returned to the herbarium at Jamaica Plain as their need becomes known; i.e., new introductions, new cultigens, or additional material found necessary for determination.*
- 6. That this herbarium be maintained as an active herbarium and that additional cultivated material, e.g. herbaceous specimens, be added in future years to make the herbarium at Jamaica Plain a complete working herbarium for determination and study of all groups of cultivated plants.*

7. That all type specimens of cultivated taxa remain in the Jamaica Plain herbarium and be clearly marked and properly housed. The specimens to be retained in Jamaica Plain number approximately 100,000 specimens and are housed in 96 steel herbarium cases, creating in itself one of the outstanding horticultural herbaria of the world.

A similar set of proposals was worked out by Dr. Metcalf and Dr. Howard regarding the library books to be retained in Jamaica Plain. Again, in accordance with the vote of the Harvard Corporation and for the best interests of the Arboretum, Dr. Metcalf and Professor Howard recommended the establishment of a working library devoted to the study and advancement of knowledge of horticultural plants. To that end they recommended to the Corporation the following proposals:

- 1. That the library in Jamaica Plain retain a complete set of all publications of the Arnold Arboretum; i.e., the serial publications Arnoldia, the Journal of the Arnold Arboretum and Sargentia, as well as the complete sets of publications by staff members. All Sargent, Wilson and Rehder publications will be kept in Jamaica Plain.*
- 2. That reference books for horticultural study and research are to be retained. These will include basic textbooks, floras, garden dictionaries, horticultural encyclopedias, and all books which normally fall in the library classification of horticulture, botanic gardens, etc.*
- 3. That a selection of books on dendrology, ecology, physiology, pathology, economic botany, entomology, biography and natural history, as well as books on color will remain in Jamaica Plain.*
- 4. To coordinate the interests of the herbarium with those of the library, there will be in Jamaica Plain all books dealing with roses, rhododendrons, lilacs, and similar groups, as well as monographs of Crataegus, Quercus, and the Conifers, and other horticultural books and monographs which will strengthen the value of the horticultural herbarium.*
- 5. Additional periodicals of particular value to horticultural research and reference, such as Curtis's Botanical Magazine, Horticulture, Gartenschnheit, La Belgique Horticole, Revue Horticole, Gardener's Chronicle, Journal Royal Horticultural Society, etc., will be retained.*
- 6. Folio volumes useful to horticulture are to be left in Jamaica Plain.*
- 7. The large collection of Wilson photographs, photos of botanical gardens, cultivated plants, etc., are to be considered library material and retained in Jamaica Plain. The Rehder card catalogue considered essential in the use of the cultivated plants in the herbarium also will remain in Jamaica Plain.*

8. All books, manuscripts and comparable reference material are to be catalogued on cards available in Jamaica Plain, and suitable designation of the location of these books is to be made in the Union Catalogue at Widener Library.

9. Additional books or similar reference material that maybe found necessary in Jamaica Plain will be returned for permanent deposit in the library of the Administration Building.

10. The library of the Arnold Arboretum in Jamaica Plain and in Cambridge is to be considered in the future, as it is now, a reference and non-circulating library. These proposals for a library dealing with cultivated plants consider approximately 7,000 volumes of the total Arboretum library, including 1,800 periodicals and 100 folio volumes. Further consideration was taken by the staff as to the proper housing and location of books and specimens in the Administration Building in Jamaica Plain. Tentative plans were drawn for a redesigning of the interior of the Administration Building for horticultural activities. It was proposed to house the library, offices, and herbarium on the first floor of the building. With the additional space available, a lecture-demonstration room will be possible, also on the first floor. Adequate storage and expansion for both the library and herbarium and sufficient working space for the staff is again possible in the building. After all aspects of the proposals and plans were reviewed by the staff of the Arboretum, Dr. Howard submitted a report to the Corporation stating his recommendations for the implementation of the Corporation vote of January 19, 1953. The Corporation at their meeting on May 17, 1954, invited Dr. Howard to appear and to describe the procedures followed in preparing his recommendations. Later in the same meeting, the Corporation voted that the several recommendations presented by the Arnold Professor and Director of the Arnold Arboretum were in accordance with the statement of policy in the resolution of the Corporation of January 19th. The Corporation accepted Dr. Howard's recommendations and authorized him to proceed in accordance with those recommendations to carry out plans for the removal from the Administration Building in Jamaica Plain the herbarium specimens and books selected for location in the University Herbarium in Cambridge. With this authorization the move began on June 7th and was in progress at the end of the fiscal year. The herbarium staff proceeded to draw out the herbarium specimens to be retained in the cultivated herbarium and to arrange these in the steel cases on the first floor of the Administration Building. The librarian, with additional assistance, selected the books to be retained in Jamaica Plain and these were arranged temporarily in the library reading room on the second floor until their permanent quarters on the first floor have been completed. The shifting of both the herbarium and the library was coordinated in such a way that there was no interruption of horticultural work or of service determinations. By July 1st the herbarium of cultivated plants in the Administration Building was completely organized and in use. Casey and Hayes Company, the movers, were charged with the task of moving the herbarium cases with the specimens intact to the new building. The library to be moved was so organized that

the books were taken from shelves in Jamaica Plain and placed on previously designated shelves in the new library in such a fashion that the books were always in order. All cases are to be checked and new felts applied where necessary to assure that the old cases in their new location will be bug-proof. A large number of herbarium specimens had to be transported from Jamaica Plain to Cambridge in the cardboard herbarium boxes which had been their location for a decade. Eventually these specimens will be arranged in proper sequence in the regular herbarium and all will be stored in steel cases. The appropriation by the Corporation from University funds allowed the purchase of 430 additional steel herbarium cases. The majority of these will be used to house the Arboretum's collections. Within the next year the Arboretum specimens for the first time in many years will all be housed properly in steel cases. The Director can only speak with praise of the yeoman's service rendered by the Curator, the Librarian and many members of the staff who worked so hard to implement this move. A major goal in the care of the Arboretum's collections is near attainment, and while many months of hard work remain, the best interests of the Arnold Arboretum have been fully considered in the activities of the past year involving the move.

HORTICULTURE

Living collections of plants such as those that comprise the Arboretum's collection require constant care. The excellent condition of the grounds throughout the year and the outstanding floral display of the spring of 1954 are indicative of the activities of the horticultural staff. During the past year approximately 150 species and varieties of new plants were added to the collections in Jamaica Plain. Many others were received either as seeds or living plants. These have been grown or propagated and are now being tested in our nurseries. A total of 152 shipments including 790 species and varieties was received. Most of these came from arboreta, gardens and nurseries in the United States and Japan, but shipments originated also in eight other countries. Over 50 species and varieties of Post Entry Quarantine plants were released by the U. S. Department of Agriculture, Bureau of Plant Quarantine, and these are being propagated for distribution as they show ornamental value. The propagation department prepared 7,396 plants for our collections or for exchange or other distribution. During the past year 144 shipments of plant materials were sent to cooperating institutions in eleven countries.

Several large yews and other shrubs were given to the Department of Buildings and Grounds of Harvard University for planting about the University Herbarium Building and other college buildings. Pruning, fertilizing, spraying and planting operations continue throughout most of the year at the Arboretum. In the past year the base of Hemlock Hill was cleaned of weed growth, opening an area for a new hemlock planting at some future date. Many weed plants were pulled from the azalea bank on South Street and in the Kalmia collection on Hemlock Hill.

The *Taxus* collection and the large pines along Walter Street were given a much-needed thinning, as were the azaleas on Bussey Hill. Thirty-one cords of manure were spread on

collections needing fertilizer. These collections included the plantings of *Carpinus*, *Juniperus*, *Chamaecyparis*, *Viburnum*, *Rhododendron* and some of the *Rhododendron obtusum kaempferi* in the woods near the ponds. The *Rhododendron* collection had a splendid display of bloom this year as a result of repeated fertilizer applications of past years. Castor pumice has been used extensively on these plantings. Summer watering has also improved the condition of these plants. The bank along the railroad tracks was sown to grass in the fall and several groups of conspicuous blooming trees were planted there this spring. Within a few years we hope to develop this bank into a colorful display, primarily for the benefit of the commuters on the Dedham branch of the New York, New Haven and Hartford Railroad.

A new "Bean" 400-gallon hydraulic sprayer was purchased to be drawn by tractor. It has become increasingly evident that control of all insects and diseases in the Arboretum merely by mist spraying is impossible. Both mist and hydraulic spraying are used now with better coverage and control than was formerly possible. Spray equipment was used on 24 different days last year. Particular attention to sprays and techniques of spraying for use in arboreta and parks is being given under the direction of the Superintendent and his staff. Fire blight, which in the past few years has become a serious threat to the large crab apple collection, was apparently held in check this year by the experimental use of "Agrimycin," one of the new antibiotics. A supply of this material for testing was donated by the Chas. Pfizer Company of New York. Weed control by the use of chemicals on a rigid spraying schedule has made poison ivy much less evident this year than before. The plant still grows in the Arboretum, however. The locations of all cultivated plants on the 265 acres of the Arboretum are recorded on 74 standard maps scaled at 20 feet to the inch and 34 additional enlargements covering the congested areas. Of these 108 maps, approximately one-third are carefully field-checked each year. The condition of the plant is noted so that it can be propagated, fertilized, sprayed, labeled or given any treatment deemed necessary. Each year it is necessary to replace from 1500 to 2000 display labels which have disappeared or are illegible. At the same time identifications are checked and kept up to date with current taxonomic revisions. Last spring all the lilac collection was checked during the flowering period. A few plants were discarded as not being true to color and the remainder are now considered correct according to the most recent survey of "Lilacs for America," published by the Lilac Survey Committee of the American Association of Botanical Gardens and Arboretums. To further enhance the value of this collection to the public, selected plants were labeled "best of the variety" during the flowering season. The collection of photographs owned by the Arboretum is used constantly for reference by the staff. Prints of these photographs are used by the staff to illustrate articles for publication. Photographs from our files were also used in several national garden magazines and in newspapers.

In recent years a collection of 35 mm. Kodachrome slides and 5 X 7 Ektachromes has been built up. These are used to illustrate lectures and publications. This collection is increased yearly and its use grows. Many of the photographs in these collections are made in private gardens in the vicinity of Greater Boston. The splendid cooperation of home owners who have

unusual or interesting plant materials being used to advantage and who have given Arboretum staff members permission to photograph them is greatly appreciated. Within the past year postcards have been made from some of the kodachromes taken in the Arboretum. These are on sale at the Administration Building and in Boston and have proved popular among visitors.

The staff of the Arboretum remains active in the field of plant propagation. The use and effect of various plastic films in vegetative propagation is receiving considerable attention. Species of *Magnolia*, *Ilex* and *Acer* which are normally difficult to root are being tried under polyethylene plastic. The effect of polyethylene plastic as a tie material over graft unions is being tested on species of *Picea*, *Pinus* and *Abies*.

A polyethylene grafting case has been used in propagation of species of *Ulmus*, *Quercus* and *Betula*. The same plastic film is being tested as a means of preventing the drying of seeds during stratification. *Acer griseum*, one of the unusual maples in the Arboretum collection, is being tested for the effect of different rootstocks on comparability. Various concentrations of hormones on the rooting of *Rhododendron* species and varieties is being undertaken. Artificial pretreatment of seeds requiring a high temperature period followed by a low temperature is being applied to species of *Viburnum*, *Cotoneaster* and *Acer*. Reports will be published on the results of these experimental projects as the work progresses.

The horticultural staff has also demonstrated the popularity of the Arboretum collections through a program of adult education. Informal classes were held in the greenhouses, and the Fall and Spring Field Classes conducted by [Dr. Wyman](#) have attracted a record attendance in the past year. Conducted tours of the grounds are available to large groups requesting such service in advance. Many garden clubs took advantage of this service during the past year. The Massachusetts Horticultural Society had its regular field day at the Arboretum on May 15th, and four busloads of visitors attending the National Convention of the American Society of Landscape Architects were conducted through the grounds by members of the staff. The ground cover and small tree display plots at the Case Estates in Weston are proving to be of increasing interest to visitors. Classes from four different colleges in New England made trips to Weston to study these collections. An experiment in the use of maleic hydracide and Crag herbicide is under way at the Case Estates. Preliminary results indicate that these materials may be valuable in reducing the hand labor required in the Arboretum as well.

CYTOGENETICS

A number of new hybrid ornamental apples produced at the Arnold Arboretum have proved to be outstanding and are being propagated for distribution. The hybrids with *Malus Sargentii* are of special interest because of their dwarf habit and brilliant foliage during the spring and early summer. The hybrids, like the *M. Sargentii* parent, are facultatively apomictic and tend to breed true from seed. Species hybridization is common in the subfamily Prunoideae (Rosaceae), and a number of spontaneous hybrids between *Prunus Besseyi* and other species have been found.

An excellent example of the stability of the genus is shown in the artificial cross between *P. Besseyi* of central North America and *P. tomentosa* from eastern Asia. Although these species differ in many characters and have been separated for hundreds of thousands of years, they cross readily and the F1 hybrid is fertile. The "Merrill" Magnolia, a hybrid produced fifteen years ago, has proved to be vigorous and early-flowering. It became available to the horticultural public from commercial sources in the spring of 1954.

Dwarfing rootstocks and bark inversion are being used for the development of dwarf ornamental trees. The bark inversion technique is being used to induce early flowering in ornamental trees and vines which are reluctant to produce flowers. Hally J. Sax (Mrs. Karl Sax), utilizing the extensive living and herbarium collections of the Arboretum, completed a cytotaxonomic study of the genus *Cotoneaster*. Most of the species were found to be apomictic triploids. There is some evidence of facultative apomixis in these triploid species. Thus the species is able to perpetuate hybrid complexes through apomixis, yet retain some genetic plasticity to meet new environmental conditions by occasional hybridization. Dexter Sampson, a graduate student, continued his work on the cytological analysis of the progeny from triploid hybrids in *Philadelphus* and *Forsythia*. Bradford Johnson, another graduate student, began a study of the cytology of facultative apomixis in *Malus*.

COMPARATIVE MORPHOLOGY

Professor Bailey has completed his task of preparing material for publication in book form by the Chronica Botanica Company. This volume which deals with salient trends of anatomical research during the period 1909-1953 will be released for sale in the near future. Miss Margery P. F. Marsden has completed her intensive investigation of *Clerodendron trichotomum* Thunb and received the doctorate from Radcliffe College in June.

Mr. Chi Ling Chen developed symptoms of tuberculosis early in the fall and is having to spend at least a year at the State Sanatorium in Rutland. This was extremely unfortunate, not only in postponing completion of his work on the Sapotaceae for the doctorate, but also in depriving Professor Bailey of his expert assistance in preparing the wood collection for transfer to its quarters in the new botanical building.

The wood collection was initiated by [Professor Sargent](#) during the early years of his administration of the Arnold Arboretum. It has subsequently been enlarged and strengthened by additional accessions at the Arnold Arboretum and by successive contributions made by the Forestry School, the [Bussey Institute](#) and the Department of Biology. Since 1936 it has been housed, as have staff members of the Arnold Arboretum concerned in its use, in the Biological Laboratories without cost to the Arboretum. For a number of years the Department of Biology provided financial assistance in the making of catalogues and microscopic slides. Furthermore, Professor Wetmore and his associates contributed much time and effort to expanding and improving the collection. In transferring the much enlarged collection, new steel cases and many new trays have been provided by the University. The Biological Laboratories also

generously contributed a large number of the trays in which the collection was formerly stored. In its new quarters, the collection is housed in close proximity to the collections of fruits and seeds and slides of pollen, leaves and flowers. Thus, any taxonomist working with herbarium specimens now has efficient and convenient access to supplementary data contained in these extensive and very valuable collections.

THE HERBARIUM

The activities of the herbarium staff during the past year were involved in the preparations to implement the vote of the Harvard Corporation. The Curator, Dr. Kobuski, and Miss Perry devoted regular time and many extra hours to the designation and separation of the horticultural herbarium and the preparation of the non-horticultural material for the move.

In spite of these steps of preparation, the regular activities continued in the herbarium. During the past year 3,560 specimens were mounted and added to the herbarium, which now contains 675,1119 sheets. A total of 12,421 specimens were sent out in exchange, 11,121 to foreign institutions and the remainder to American herbaria.

New collections received at the Arboretum number 27,758 specimens. Of these, 12,000 specimens came as gifts or in exchange, while approximately 6,000 specimens were received from expeditions or collectors sponsored completely or in part by the Arnold Arboretum. Nearly 85% of the incoming materials were received from Malaysia and Asia, forming a significant addition to the valuable collections already in the Arboretum from this area. Among the noteworthy accessions are 14,000 specimens collected by [L.J. Brass](#) on his most recent trip to New Guinea; Richard Schultes' collection of 3,500 specimens from the Amazon; 2,000 specimens from the Philippine Bureau of Science collected in oriental Mindoro, and 3,500 specimens from Japan, the Ryukyu Islands and other accessible areas of Asia.

An active exchange continues between the Bogor Herbarium in Java and the Arnold Arboretum. During the past year the Arboretum received 2,400 specimens from the Bogor Herbarium collected in various regions of Indonesia. The number of requests for loans of specimens from the Arboretum collections continues high. A total of 5,457 specimens were sent out on loan during the year to twenty-two different institutions. Foreign requests for loans numbered eleven.

During the year, staff members conducted research on plant families and areas of their specialties. Dr. Howard was appointed Senior Botanist on a project sponsored by the Institute of Jamaica in Kingston, Jamaica, British West Indies, to survey the native vegetation on bauxite soils on that island. The project hopes in the course of this work to determine what plants of potential economic value can be grown on mined-out bauxite areas. Dr. Howard continued his work on the vegetation of the Caribbean Islands and made some progress on monographic studies of the genus *Coccoloba*.

Dr. Kobuski continued his work on the Asiatic members of the Theaceae and specifically towards a treatment of this family for the *Flora Malesiana*. He also identified several large collections of this family for various herbaria. Dr. Johnston concentrated on his studies of the Boragiaceae, with a special interest in the herbaceous genera found in Asia and the Middle East. Dr. Perry continued her work on the New Guinea flora, giving special attention to the recently received collections of L.J. Brass. Dr. Hu is completing a monographic study of the ornamental genus *Philadelphus* and supervises the initial stages of the preparation of a list of the species of flowering plants reported from China.

Dr. Merrill is now receiving the proofs on his book regarding the botany of Captain Cook's two voyages in the Pacific. It is expected that this major contribution will be published in the fall.

THE LIBRARY

The preparation and implementing of plans to organize a horticultural library and the separation of those books to be moved to Cambridge formed a major portion of the work of the librarian and the library staff during the past year. The Corporation requested in its vote that all Arboretum books to be housed in Cambridge be distinctly marked. Thus, within the past year all books which are part of the Arboretum library have been checked and marked where need be, with a stamp or sticker on the back, an embossed imprint within the pages, or a bookplate, or a combination of these. An excellent selection of books of horticultural use was made with the cooperation of Dr. Wyman and other members of the staff. These books to remain in Jamaica Plain will eventually be located in a newly designed library and reading room on the first floor of the Administration Building, with room for expansion or for little used volumes on the second floor of the herbarium wing. Additions to the library by gift, purchase or binding totaled 271 volumes.

The library now contains 48,673 bound volumes on the shelves. Pamphlets numbering 206 were added to the pamphlet collection, bringing that collection to a total of 1,5410 items. Five hundred and four catalogue cards were added to the main catalogue and 1206 cards were added to the Gray Herbarium index of American species. Inter-library loans showed an increase over past years, although many additional requests were answered by typing short descriptions, or through the use of microfilm and photo stat copies.

EXHIBITS AND DISPLAYS

[The Larz Anderson Collection of Japanese Dwarf Trees](#) was featured at the exhibit of the Arnold Arboretum at the Spring Flower Show of the Massachusetts Horticultural Society. The plants were exhibited in a setting of a Japanese garden. An interesting bamboo shelter was erected to shelter these plants in a fashion comparable to that used in Japan. Three excellent Kurume azaleas loaned by Mr. John Ames added color to the display. A first prize and a gold medal were won by this display. Several additional displays of living plant materials were furnished for other shows of the Massachusetts Horticultural Society during the year. An Arboretum display of

sprays of flowers, tree photographs and Ektachrome display panels occupied a featured location at the National Convention of the American Society of Landscape Architects at the Hotel Somerset. This exhibit attracted much attention and was mentioned in the programs and news releases of the meetings.

PUBLICATIONS

Four issues of Volumes 34 and 35 of the *Journal of the Arnold Arboretum* were issued quarterly totaling 522 pages. Dr. Kobuski serves as editor of the Journal, assisted by an editorial board of other members of the Arboretum staff.

Twelve numbers of *Arnoldia* were issued under the editorship of [Dr. Wyman](#) and were distributed to the Friends of the Arnold Arboretum and additional subscribers so that the total distribution now numbers 2,200. The subscription price of *Arnoldia* was raised to two dollars per year. This represented the first increase in price since this publication first appeared. A demand for back numbers of *Arnoldia* increased to the point where it seemed desirable to accept an offer of the D. Van Nostrand Company of New York to publish some of these as "The Arnold Arboretum Garden Book." Some forty-five issues were selected and Dr. Wyman wrote an introduction and foreword for this book. Proof of the book is now being received and publication is expected in the fall of 1954. Fifty scientific papers by members of the staff were published during the past year.

GIFTS AND GRANTS

The Arboretum is fortunate to receive a large number of gifts from individuals interested in the work of the organization and the staff. Most of these are received as "memberships" in the "Friends of the Arnold Arboretum." During the past year 431 memberships were received. Such gifts are assigned, unless otherwise designated, to a fund called "gifts for cultural purposes" and are used exclusively to sponsor additional work on the grounds, such as developing new collections, additional care for the plantings or for research and work leading to the development of new hybrids, dwarf plants and similar projects. Additional gifts were received designated for specific purposes.

One gift from a Friend of the Arboretum was to be used to support foreign collectors and thereby obtain for the Arboretum additional material of horticultural value. It is hoped that this meritorious fund can be increased in future years.

Another large gift was placed at the discretion and joint use of Dr. Reed Rollins, Director of the Gray Herbarium and Dr. Howard, Director of the Arboretum, to be used for research in systematic botany for the benefit of both the Arnold Arboretum and the Gray Herbarium.

The Arboretum received a bequest from the estate of Emery Holden Greenough which was assigned to the endowment of the Arboretum. Through the generosity of Mrs. Martha Peters, her home and the land thereabout on South Street was given to the Arboretum. It is hoped that eventually when funds are available the setting of this old house can be used as a

demonstration landscape area to show plants for small homes in a good setting. The adjacent land when reconditioned will be of great value to the Arboretum as a nursery area.

Numerous Friends have given books on plants and flowers to the Arboretum. Many of the books are welcome additions to the library, while others serve as replacements for worn books long in use.

R.A. HOWARD, Director