

U. S. NATIONAL ARBORETUM  
PLANT EXPLORATION AND RESEARCH  
PROPOSAL

Investigator and

Applicant: JEFFERSON ROLAND MAURICE Date: October 29, 1981  
Last First Middle

U. S. National Arboretum

Address and telephone number (including area code)

24th & R Streets, N.E., Washington, D.C. 20002

1. Project Title: INTRODUCTION AND DOCUMENTATION OF SUPERIOR JAPANESE  
CHERRY SELECTIONS INTO THE UNITED STATES.

a. Funds requested: \$26,227.\*

b. Expected duration of the project. (Specify dates of field and  
laboratory study).

1st trip --- March 10, 1982 through June 15, 1982

2nd trip --- September 29, 1982 through October 31, 1982

c. Location of field work Japan

\* Due to a special act of Congress, the National Arboretum can receive grants through the FRIENDS OF THE NATIONAL ARBORETUM, (a tax exempt organization). A copy of the tax exempt letter is attached.

d. Abstract of Proposed Research.

To introduce new superior ornamental flowering cherry selections from Japan into the United States and to document the history of Japanese cherry selections. This material will be collected from native and cultivated trees and shrubs growing in areas of climatic diversity (32 to 45° N Latitude), with special emphasis on seed and budwood from disease resistant plants that show great potential for ornamental acceptance.

e. Significance of Research.

(Prepared by Dr. H. M. Cathey and Dr. F. S. Santamour, Jr.)

The significance of the research project, the research institution, and the principal investigator are all major elements that contribute to the success of any research undertaking. These are discussed below.

The U.S. Department of Agriculture has a historic involvement with the flowering cherry trees of Washington, D.C., and their popularity in other parts of the United States. It was largely through the efforts of David Fairchild, famed USDA plant explorer, that these trees came to be sought after by eminent personages in our nation's capital. This history is documented in National Arboretum Contr. No. 4, 1977 (see list of publications).

There have been very few introductions of flowering cherry germplasm into the United States since 1916. Federal quarantine regulations, imposed because of virus and other disease problems on commercial fruit-type cherries, have virtually blocked new introductions. Many of the cherry cultivars introduced between 1903 and 1916 have been lost from cultivation. As a result, USDA and other scientists seeking to develop genetically improved flowering cherries with greater cold hardiness, pest resistance, etc., have been working with an unselected and ever-diminishing gene pool.

What we in the United States need for significant improvements in the future is germplasm exhibiting a wide range of genetic diversity from which clones and parental material can be selected. We are also extremely interested in introducing many of the new cherry cultivars developed and selected in Japan since 1916. This systematic collection from both native and cultivated sources should provide a representative gene pool for decades of testing and research. Of the eight cherry species native to Japan, and the 148+ cultivars presently grown, fewer than 30 are presently in cultivation in the United States. The broad latitudinal range (32° N to 45° N), as well as site and elevational differences, should allow selections to be made for various northern and southern areas of the United States, where flowering cherries cannot now be grown successfully. The U.S. National Arboretum, because of its close working relationship with the U.S. Plant Introduction Station at Glenn Dale, MD, is one of the few research institutions in the United States that can successfully monitor both the research and quarantine situations.

Mr. Roland M. Jefferson, the principal investigator and botanist at the U. S. National Arboretum, may be the only American scientist with the depth of understanding, the background, the international reputation, and the professional contacts to successfully carry out a project of this range and complexity. His international reputation was recognized in 1981 when he became the key figure in a new Japanese-American cooperative effort on flowering cherries. In January 1981, a team of representatives from the Tokyo Metropolitan Government visited Washington, D.C., and, with Mr. Jefferson's help, collected more than 2,000 budsticks from Japanese cherries to be brought back to Japan. As a result of his personal involvement and expertise, Mr. Jefferson was invited to visit Japan from April 4, 1981, to May 11, 1981. He traveled widely, observing cherry trees and documenting them by collecting herbarium specimens. He visited scientists in many areas, making arrangements for the later collections of seeds from selected areas of selected trees. This visit has laid the groundwork for what could be a most significant undertaking in American horticulture.

All exploration and historical data compiled during this ornamental cherry project will be deposited as part of an ornamental cherry reference collection at the National Agricultural Library for future research use.

The time is now; the project is well-planned; the institution is ready; and the investigator is the right man. The work begun by David Fairchild in bringing new cherry trees to the United States will be carried on for the improvement of American horticulture.

f. Description of Proposed Exploration and Research.

In 1981, at the expense of the Adachi-Ku, Tokyo, Japan, an initial survey of flowering cherry trees was conducted in Japan by the principal investigator. At major research collections and mountain areas, many native and cultivated types were observed and documented through herbarium specimens and photographs. Several very ornamental selections were noted, and contacts were made with many scientists, through the Flower Foundation of Japan, for the support of a future Arboretum cherry exploration trip.

In order to continue this effort to improve cherry selections in the United States, it will be necessary to explore Japan more extensively with the help of Japanese scientists located in various sections of Japan. This project will be conducted in two phases. The first will begin in early March 1982 and will end in mid-June 1982. Beginning at the cherry trees southern limit, the explorer will travel north from southern Kyushu Island (near the 32nd parallel) and observe the trees as they bloom, evaluating them for desirable growth habit, ornamental qualities (of flowers, foliage, bark, and bud scale), water tolerance, and pest resistance. Superior native and cultivated specimens will be documented, photographed, and marked as future sources of seed and propagation material. After continuing to the northern end of Hokkaido Island (45th parallel), the explorer will return to Kyushu and begin again, this time collecting seed and observing the plants previously selected.

During September 1982, the explorer will return to Hokkaido Island, where low temperatures first occur in Japan, and travel south in order to select specimens that have outstanding fall leaf color. During both expeditions, the explorer will have the assistance of scientists from major institutions in many of the significant cherry locations in Japan. The explorer will meet with these scientists, as time permits, and discuss problems that relate to the taxonomy and cultivation of flowering cherries growing in both the United States and in Japan. It is hoped, these cooperative efforts will resolve some of the controversy in nomenclature and culture that have significantly clouded efforts to systematically study, identify, and cultivate many flowering cherry selections in both countries.

Native and cultivated cherry selections introduced into the U. S. through this expedition will be grown and indexed under quarantine controls at the Glenn Dale Center of the U. S. Department of Agriculture. Progenies grown from seed collected in Japan will be outplanted in the Arboretum's test plots at Beltsville. They will be evaluated for growth rate, pest resistance, and cold hardiness under severe natural or induced environmental stresses. Selections for future breeding will be made on the basis of this evaluation. Some outstanding selections may be propagated and distributed for testing as potential new cultivars.

2. Biographical information and qualifications of the applicant:  
(curriculum vitae for files)

a. Present position (institution and rank): Botanist, U.S. National Arboretum,  
GS 12.

b. Place and date of birth: Washington, D.C. 9/3/23

c. Education and degrees with institutions and dates:  
Howard University, Washington, D.C.  
B.S., Botany 1950 + 22 hours Botany 1951-52.

d. Special qualifications of applicant for proposed research:

1. At the request and expense of the Adachi-Ku, Tokyo, Japan, Mr. Jefferson, the principal investigator, spent 6 weeks in Japan visiting major native and cultivated cherry sites and making contacts with key scientists and horticulturists for future cherry exploration work.
2. Since 1972, he has compiled a world-wide file of flowering cherry taxa by surveying 728 scientific and horticultural institutions for cherry holdings, and he has visited for technical observations, many cherry collections in the United States, Great Britain, Europe and Japan.

CURRICULUM VITAE

Jefferson, Roland M. D.O.B. 9/3/23  
Place of Birth: Washington, D.C.

EDUCATIONAL BACKGROUND

1946-1950 Howard University, Washington, D.C.  
Major Botany: Minor Zoology: B.S. 1950

1951-1952 Howard University  
Post graduate studies: Botany 22 qtr. hrs.

WORK EXPERIENCE

1956-1957 GS-3, Biological Aid, USDA National Arboretum,  
Washington, D.C. (passed civil service, U.S. professional exam. 1957)

1957-1959 GS-5, Plant Taxonomist, National Arboretum,  
Washington, D.C.

1959-1961 GS-7, Plant Taxonomist, National Arboretum,  
Washington, D.C.

1961-1968 GS-9, Plant Taxonomist, National Arboretum,  
Washington, D.C.

1968-1977 GS-11, Botanist, National Arboretum,  
Washington, D.C.

1977-Present GS-12, Botanist, National Arboretum,  
Washington, D.C.

Instructor Plant Materials  
Continuing Education for ~~Women~~ Center, George Washington University,  
Washington, D.C. 1974-~~1981~~. PRESENT

Instructor Plant Materials  
USDA Graduate School  
Washington, D.C.  
1979-Present

ASSOCIATIONS

Executive Committee of the Washington Youth Gardens,  
1974-Present.

Advisory Committee Plant Science Data Center  
The American Horticultural Society, Mount Vernon, VA  
1980-~~Present~~ 1982

## PUBLICATIONS

1. Jefferson, R.M. 1962. Metalphoto--A Promising New Plant Labeling Method. The Amer. Hort. Mag. 41(3): 171-173.  
(Reprinted in AABGA Newsletter, April 1966. Cited by Dullforce, W.B., The Problem of Plant Labeling, R.H.S. Jour. 89(4): 164-171, April, 1964)
2. Jefferson, R.M. 1966. Crabapples At the National Arboretum. The Amer. Hort. Mag. 45(2): 231-236.
3. Jefferson, R.M. 1966. A Maple with Girdling Roots. The Amer. Hort. Mag. 45(4): 417-418.
4. Jefferson, R.M. 1968. Fuji--A New Crabapple and Other Doubles. The Amer. Hort. Mag. 47(1): 22-25.
5. deVos, Francis and R.M. Jefferson 1969. Trees and Shrubs Make Your Garden. Successful Gardening published by Men's Garden Club of Montgomery County. (17-25) (Popular).
6. Jefferson, R.M. 1970. History, Progeny, and Locations of Crabapples of Documented Authentic Origin. National Arboretum Contribution No. 2. Agri. Res. Serv., U.S. Dept. Agri. 107 pp.
7. deVos, Francis, Jefferson, R.M. and Haehle, Robert 1975. Trees and Shrubs for Your Garden. Successful Gardening op. cit.
8. Jefferson, R.M. 1975. Boxwood Around the Lincoln Memorial. Amer. Horticulturist 54(4): 6-10.
9. Jefferson, R.M. 1976. Differences Between Ligustrum Japonicum and L. Lucidum. Amer. Nurseryman. 144(1): 22+ (Trade Journal).
10. Jefferson, R.M. 1976. Modular Signs Point The Way. Parks and Recreation. 11(6): 33. (Trade Journal).
11. Jefferson, R.M. and Fusonie, A.E. 1977. The Japanese Flowering Cherry Trees of Washington, D.C. A Living Symbol of Friendship. National Arboretum Contribution No. 4. Agri. Res. Serv., U.S. Dept. Agri. 66 pp.
12. JEFFERSON, R.M. ~~1984~~ AND WAIN, K.K. 1984 THE NOMENCLATURE OF CULTIVATED JAPANESE FLOWERING CHEARLIES (PRUNUS): THE SATO-SAKURA GROUP. NATIONAL CONTRIBUTION NO 5. AGRIC. RES. SERV., U.S. DEPT. AGRIC. 44 PP.