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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Ball, C. R.
Willow problems in arctic America
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WILLOW PROBLEMS IN ARCTIC AMERICA

By. Carleton R. Ball

For some 50 years, I have carried, as a botanical project, a study of the taxonomy, distribution, and uses of the willows (genus *Salix*). They are a variable group, ranging from towering warm-temperate trees to tiny prostrate alpine or arctic mats. The species and varieties are exceedingly numerous and some have an exceedingly wide distribution. They form a dominant part of arctic vegetation and are very important to man and to animals in the temperate and arctic regions of the world.

During these 50 years, I have determined the willows collected and/or used by Federal and Dominion, State and Provincial, and local government agencies in the United States and Canada (and Greenland), also those by private institutions and individuals. I now am working on a monograph which will bring our knowledge of their relationships and distribution up to date in a single publication. Numerous papers and treatments basic to this are being published. I am preparing also a comprehensive treatment of their varied and important uses by man and animals, of which the attached paper is a summary and incomplete at this.

The major remaining problem is to determine the complete range of variation in characters and the total geographic distribution of each of the many species and varieties. This is especially difficult in the Arctic because resident population (collectors and students) is small, the area large and distances great, transport and accommodations relatively lacking, the growing season short, and many of the species very small, prostrate, and inconspicuous.

Much additional material and information has been obtained in the last 10 or 15 years, but the ground is far from covered. In the past two years, splendid and fairly complete work has been done by the scientists of the Naval Research Project in arctic Alaska. Similar detailed collecting and recording is urgently needed in Mackenzie, Kewatin, Ungava, and Franklin (the arctic islands from Banks and Victoria in the West to Baffin and Greenland in the East).

Some of the important points for workers in the area are noted below. No student or collector should be discouraged because it proves impossible to get many or most of these data. They are the ideal. Some will get certain data, others others will obtain other facts. Every little helps, and "many a mickle makes a muckle."

Collections are needed to show, for each species and variety, the successive stages of its seasonal development from the winter condition in early spring, through summer to late autumn. This means that each collector should gather what he sees, at the time when he is in the field. Where collectors remain in one area for weeks or months, or return to it at intervals, individual plants may be tagged or otherwise marked and collections then made from same plant at different stages of development.

Arctic willows often retain their old leaves and catkins throughout the winter, so that early spring collections may be especially valuable even if the new leaves and aments are not yet fully out. Different plants of the same species often have leaves of different sizes or shapes, or catkins of quite different lengths, and these different expressions are greatly needed in collections.

Information recorded, where possible, should include latitude and longitude, elevation, locality, general and local habitat, relative abundance, associated plants, habit (erect, ascending, depressed, prostrate, creeping), height of plant or width of spread of mats, and any evidence or record of use by man or animals (browsers, gnawers, birds, insects, etc.).