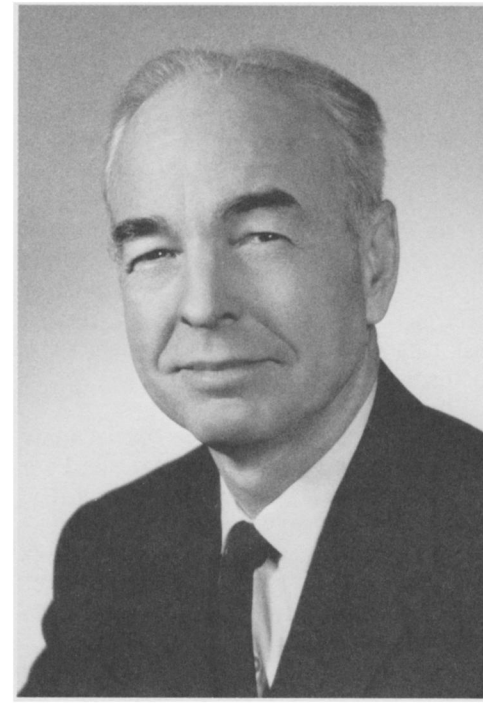
resolution of respect

JOHN WINTON MARR 1914–1989

One of western North America's most beloved ecologists, John W. Marr, died on 12 October 1989 in Boulder, Colorado, after a long battle with Parkinson's disease. He is recognized as one of the major contributors to arctic and alpine ecology, and a primary facilitator of ecological research in alpine tundra in the United States. He is survived by his wife Ruby Rieder Marr, their two children Ken and Linda, as well as by Johanna, a daughter from his previous marriage.

John Marr was born 16 May 1914 and raised in Lamesa, a small town in west Texas. He attended Texas Technological College, in Lubbock, majoring in botany, and participated in the school's field camp in the Sangre de Cristo Mountains of northern New Mexico in the early 1930s. It was here that he first developed his life-long interest in mountains. On one field trip he noticed the lack of resemblance between living plants he observed in the field and the pressed specimens in the laboratory. It convinced him that the teaching of botany should include a strong emphasis on field activities. His botany professor, dendrochronologist R. A. Studhalter, encouraged Marr to browse frequently in the library for career ideas. He ran across William S. Cooper's paper on ecological succession in Glacier Bay, Alaska and was so impressed he decided to become an ecologist.

Marr took his bachelor's degree from Texas Tech in 1936 and after a year of graduate work at Northwestern University transferred to the University of Minnesota where he



worked with William S. Cooper. During the summer of 1941 he worked as a field assistant to Cooper in his study of sand dunes of the Oregon coast and with Donald B. Lawrence in his ecological studies on Mt. St. Helens. Cooper referred to Marr as his most poetic field assistant whose field notes reflected his appreciation for the beauties of nature.

In 1939, Marr went as an assistant on an

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expedition to northern Canada led by E. C. Abbe. The main scientific goals were plant taxonomy and phytogeography, but Abbe allowed Marr time to pursue ecological research on the forest–tundra ecotone. This trip initiated Marr's dissertation research on the ecology of the forest–tundra ecotone on the east coast of Hudson Bay, Canada, completed in 1942, and published in *Ecological Monographs* in 1948. In this classic paper on treeline in northern Canada, he established that the dearth of soils, a result of the geologic history of the region, rather than climate, was limiting the distribution of trees.

After completing his Ph.D. at the University of Minnesota, Marr wanted to join the ongoing World War II effort. The Air Force created a civilian position for him as Arctic Region Specialist, and he was stationed for a period of time in southeast Greenland. He also had a second tour of duty with the Air Force from 1949–1950 as chief of the Arctic Section and deputy director of the Arctic, Desert and Tropic Information Center.

After the war Marr was told of a job at the University of Colorado in Boulder by alpine ecologist Robert Griggs. His interest in this job stemmed from his love for the Rocky Mountains, stimulated by his days at the Texas Tech field camp, and because the University had a mountain field station, known as Science Lodge. Marr believed that because you cannot bring ecosystems to campus you must go into the field to study them. The opportunities of field research and teaching in the mountains beckoned. He joined the faculty of the Biology Department at the University of Colorado, Boulder, in 1944, a position he retained until his retirement in 1982 when he received the Stearns Award for extraordinary service to the University.

In Colorado, he quickly recognized that processes operating in winter controlled much of the ecology of the Front Range. The paucity of long-term and year-round environmental data from mountain ecosystems led him to develop a program of research and teaching specifically addressing these areas of inquiry. In particular the absence of information from the winter was so apparent that beginning in 1947 he organized and taught a winter research class at Science Lodge. His research vision was realized in 1951 when one of his first federal grants provided support to establish 16 year-round weather and ecosystem monitoring stations in the Colorado Front Range. Stations were placed in the alpine, subalpine, upper montane and lower montane climax ecosystem regions. One station in each ecosystem region has operated continuously to the present, fulfilling Marr's conviction that long-term observation is the most effective method of understanding ecosystem dynamics.

Marr maintained his life-long interest in northern ecosystems and organized an expedition to Ungava in northeastern Canada in 1948, with support from the Arctic Institute of North America. He also returned to Greenland during the summers of 1956 and 1957 for research on patterned ground in the Thule area with Arturo Corte of Argentina.

Marr's most important institutional achievement at the University of Colorado was the founding of the Institute of Arctic and Alpine Research in 1951. He was director of this Institute until 1967 when he resigned to continue his research. The alpine area on Niwot Ridge where Marr first began his studies of Rocky Mountain alpine tundra became a readily accessible research site due to the Institute's efforts. Numerous other scientists from around the world have taken advantage of this accessibility. This varied research and Marr's sharing attitude toward other scientists built an international reputation for the Institute. Many outstanding ecologists from throughout the world, including Alec Watt of Britain, Peter Wardle of New Zealand, Eilif Dahl of Norway, Carl Troll of Germany, Robert Crocker of Australia, Hugo Sjors of Sweden, and many others visited Science Lodge; some of them did extensive research there. Graduate students and researchers from throughout North America came to Colorado to work on Niwot Ridge through the Institute. In 1962, he secured funding to build the Alpine Laboratory at CU's Science Lodge. This Laboratory was renamed the John W. Marr Alpine Laboratory in his honor in 1982.

He was active in obtaining federal funding long before such grants were common, and as director of the Institute of Arctic and Alpine Research he received over one million dollars in research and development grants from the federal government. Most of these grants came in the 1950s and 1960s. Under his direction the Institute combined basic scientific research in mountain ecosystems with an active program of teaching to bring an under-

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standing of these ecosystems to a broad audience. An important grant from the National Science Foundation led to the development of Research Participation Programs in which high school students, undergraduate students, high school teachers, and college professors worked with the Institute scientists and pursued projects of their own. In Marr's mind, to teach was to involve students in ongoing research. These programs have continued until recent years. Marr's personal research led to the publication in 1961 of his classic monograph, *Ecosystems of the East Slope of the Front Range in Colorado.* This monograph carefully lays out his understanding of the vegetation and its relationship to the physical environment and ecological processes of this important region.

Marr was best known for his teaching. On his office door were posted his office hours, but underneath were the handwritten words "knock any time." His door was always open to students, colleagues, and anyone interested in ecology. His classes focused on ecological principles and ecosystem dynamics and included frequent field trips and individual research projects. Marr's approach to teaching was usually at the landscape and ecosystem scale. He used Socratic methods as he continually asked questions focusing students' attention on landscape units and their dynamics; a standard question on field trips was, "What's going on here?" At the dedication of the Alpine Laboratory in his name in July 1982, a furious wind was buffeting the gathered crowd. After the preliminary speakers held forth Marr came to the podium and in typical fashion, asked a question—"What is the dominant environment factor in the Colorado subalpine?" By use of such questions he invited the listening student to conceive ecological relationships that would be remembered, and later related to other landscape patterns: he taught by subtle suggestion rather than dogmatic direction.

A total of 14 students completed master's and 18 completed Ph.D. degrees under Marr, most based on studies in arctic and mountain regions. A well-known biologist remarked that Marr's students were never carbon copies of himself. Marr encouraged graduate students with ideas and in methods and writing, but he thought that the only way you truly learn something is to do it yourself. He never had ongoing projects in which graduate students seeking thesis topics were merely inserted. Students searched out topics that they were most interested in and pursued them with help from Marr. He did this because he was deeply convinced that choosing a research area and subject should be a highly personal decision that would encourage the students to return to the study area and research topic throughout their lifetime.

Marr also contended that too many scientists published their work too quickly and that too much emphasis was placed on publishing as an end in itself, not as a part of the process of scientific discovery and communication. He never accepted the emerging assertion that the "descriptive" heritage of ecology was not properly scientific. Descriptive ecology to Marr included understanding mechanisms; it was not to be dismissed as natural history, but instead should be labeled "systematic and integrative ecology" in which ecologists integrate field observation of vegetation, soils, and climate with information from autecological studies to achieve ecological understanding. To Marr descriptive ecology was basic to the application of ecology to human problems. He was one of the first to emphasize the applied aspects of ecology, and he and many of his students have worked with industry and government agencies to minimize harmful environmental impacts.

John W. Marr will long be remembered as a kind and considerate gentleman. Through his leadership, personal strength and teaching, especially his field classes, he influenced almost everyone who came in contact with him. To carry forward his love of field research, a John W. Marr Memorial Ecology Fund has been established at the University of Colorado Foundation to provide small grants to graduate students working on field ecology problems in the Rocky Mountains and in the Far North. Those interested in contributing to this fund should contact the CU Foundation (303-492-5687), or mail their contribution to University of Colorado Foundation, University of Colorado, Boulder, CO 80309.

David J. Cooper
Beatrice E. Willard
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Former students,
all of Boulder, Colorado

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