

VPS

WESTERN SNOW CONFERENCE



PROCEEDINGS
17th
ANNUAL MEETING
Denver Colo.
April 1949

Proceedings

of the

WESTERN SNOW CONFERENCE

Denver, Colorado

April 26, 1949

SEVENTEENTH ANNUAL MEETING

Ralph L. Parshall, General Chairman

Program Committee

Bert C. Goodell, Chairman

Herbert S. Riesbol

Victor A. Koelzer

Walter U. Garstka

Publication Committee

Homer J. Stockwell, Chairman

Walter U. Garstka

Harry W. Oliver

Phil E. Church

Fort Collins, Colorado

November 1950

WESTERN SNOW CONFERENCE
PROGRAM

April 26, 1949
Denver, Colorado

	Page
ECONOMIC ASPECTS OF SNOW--Dr. R. T. Burdick, Professor of Economics, Colorado A & M College, Fort Collins, Colorado	5
SNOW PROBLEMS ON COLORADO HIGHWAYS--D. N. Stewart, Maintenance Engineer, Colorado State Highway Department, Denver, Colorado	14
PROGRESS IN SNOWMELT INVESTIGATIONS AT FRAZER EXPERIMENTAL FOREST--Phyllis Peasley, Mathematician; Walter U. Garstka, Hydraulic Engineer, U. S. Bureau of Reclamation, Denver, Colorado; and B. C. Goodell, Conservationist Forest and Range Experiment Station, Fort Collins, Colorado	23
TECHNICAL PROGRESS IN THE COOPERATIVE SNOW INVESTIGATIONS*--Forrest L. Rhodes, Civil Engineer, Corps of Engineers, and Walter T. Wilson, Hydrologist, U. S. Weather Bureau, Oakland, California	
ANCHOR AND FRAZIL ICE--R. C. Farrow, Comptroller of Water Rights, Department of Lands and Forests, Victoria, British Columbia	29
DISCUSSION--Ralph L. Parshall, Collaborator, U. S. Department of Agriculture, Colorado Experiment Station, Fort Collins, Colorado	31
WIND STUDIES ON SHIELDED SNOW GAUGES--Dr. C. C. Warnick, Professor of Civil Engineering, Idaho Experiment Station, Moscow, Idaho	37
DISCUSSION--J. C. Stevens, Consulting Engineer, Leopold and Stevens Instrument Corporation, Portland, Oregon	44

*Not available for this report.

EVENING PROGRAM

Master of Ceremonies--Hon. Benjamin C. Hilliard, Chief Justice, Colorado State Supreme Court, Denver, Colorado

Address - SCIENCE AND ADVENTURE -- Dr. J. E. Church, Emeritus Meteorologist, Nevada Experiment Station, Reno, Nevada and Founder of Western Snow Conference.

This publication includes the available papers or summaries of papers presented at the annual meeting of the Western Snow Conference at Denver, Colorado, on April 26, 1949. Some of the short papers, particularly informal discussions are not available for this report. The report by Mr. Forrest L. Rhodes, Civil Engineer, Corps of Engineers, and Mr. Walter T. Wilson, Hydrologist, U. S. Weather Bureau, were general discussions of the work of Cooperative Snow Investigations with headquarters at Oakland, California. The details and results of this work are published in technical reports of Cooperative Snow Investigations. It is understood that these reports are available on request from the Program Director, Cooperative Snow Investigations, Oakland Army Air Base, Oakland, California.

The evening program of the Conference was a banquet meeting in the Shirley-Savoy Hotel. It was fortunate to have the Hon. Benjamin C. Hilliard, Chief Justice of the Colorado Supreme Court, as master of ceremonies who provided an interesting and entertaining evening. Several musical numbers were provided by an instrumental trio including R. L. Parshall, Chairman of the Snow Conference, violin, W. W. Garstka, Bureau of Reclamation, cello and D. K. Braungardt, Bureau of Reclamation, piano. The main address of the evening entitled, "Science and Adventure" was given by Dr. J. E. Church, Emeritus Meteorologist, Nevada Experiment Station and Founder of the Western Snow Conference. The address by Dr. Church on his experiences in snow surveying in United States and foreign countries is included as an appendix to this report. A film obtained by Dr. Church entitled "Formation of Snow Crystals in the Laboratory" by Dr. U. Nakaya, Harajukii, Tokyo, Japan, was shown at the end of the program.

The publication of this report is made possible through dues from individual members of the Western Snow Conferences and financial support from the following organizations who have recently contributed to the Western Snow Conference or have purchased copies of former proceedings.

State Division of Water Resources, Sacramento, California
U. S. Bureau of Reclamation, Regional Offices
San Luis Canal Company, Los Banos, California
Tucker Sno-Cat Corporation, Medford, Oregon
Dept. of Forest and Lands, Victoria, British Columbia
Aberdeen-Springfield Canal Company, Aberdeen, Idaho
State of Washington, Olympia, Washington
Dept. of Water and Power, Los Angeles, California
Soil Conservation Service, Regions V, VI and VII
State Engineer of New Mexico, Santa Fe, New Mexico
U. S. Geological Survey, Washington, D. C.
Montana Experiment Station, Bozeman, Montana
State Engineer of Wyoming, Cheyenne, Wyoming
Los Angeles Flood Control District, Los Angeles, California

4.

State Engineer of Oregon, Salem, Oregon
East Bay Municipal Utility District, Oakland, California
Colorado Experiment Station, Fort Collins, Colorado
State Engineer of Nebraska, Lincoln, Nebraska
Bonneville Power Administration, Portland, Oregon
Upper Colorado Commission, Grand Junction, Colorado
Southern California Edison Company, Los Angeles, California
California-Oregon Power Company, Medford, Oregon
Northern Colorado Conservancy District, Greeley, Colorado
Arkansas Valley Ditch Association, Pueblo, Colorado
J. G. Boswell Company, Los Angeles, California
Colorado Fuel and Iron Company, Pueblo, Colorado
Pacific Power and Light Company, Portland, Oregon
City of Seattle, Seattle, Washington
Water Resources Development Corporation, Pasadena, California
General Electric Company, Richland, Washington
Metropolitan Water District of Southern Calif., Los Angeles,
Calif.
State Engineer of Colorado, Denver, Colorado
Okanogan Irrigation District, Okanogan, Washington
Salt River Valley Water Users' Assoc., Phoenix, Arizona
Riverside Ditch Company, Blackfoot, Idaho
Boise Board of Control, Boise, Idaho
Potlatch Forests Inc., Lewiston, Idaho
Public Service Company of New Mexico, Santa Fe, New Mexico