

Eastern  
Snow  
Conference

*Proceedings of the*

*1968*

*Annual Meeting*

*Boston, Massachusetts*



Proceedings of the  
Twenty-fifth Annual  
EASTERN SNOW CONFERENCE

February 8, 9, 1968

Boston, Massachusetts

EASTERN SNOW CONFERENCE  
SILVER ANNIVERSARY

Year after year we gather, as you know  
When winter's peace upon the earth descends  
To share our common interest in snow  
In jovial communion with our friends  
And years go by so swiftly, you'll agree  
That it's been mighty hard to realize  
We've reached our Silver Anniversary  
In fact, it nearly took us by surprise

It started on a bright September Day  
In 1940, with some fifty men  
They met in Cambridge, just across the way  
And things were never quite the same again  
We've grown in numbers and in stature too,  
Advanced in knowledge and improved in skill  
We're experts in the field of ice and snow  
And what we don't know now, we someday will

In Springfield, Greenfield, Albany and Troy  
In Harvard, Yale and Dartmouth's hallowed halls  
Lakes Saranac and Placid, we've enjoyed  
And Quebec City and Niagara Falls  
Embarking on our second twenty five  
Let's keep the gay and friendly atmosphere  
Which makes our Conference so much alive

- David R. Campbell -

IN MEMORIAN

Harold M. Finlayson, age 70, long-time member of the Eastern Snow Conference and, in 1955 first Canadian president of the Conference, died on Aug. 16, 1968. "Finn", as most of his friends and associates knew him, was an energetic worker in Conference activities. He and his wife, Margaret seldom missed one of the annual meetings.

Mr. Finlayson was a veteran of the Canadian Flying Corps, having served his country in World War I. He was a graduate of McGill University, and served the public faithfully as an executive of the Shawinigan Water and Power Corporation for many years. He was a professional engineer and an active member of many professional and scientific Societies.

Finn's passing will be felt by his friends and associates in the Eastern Snow Conference for many years to come.

EASTERN SNOW CONFERENCE

TWENTY-FIFTH ANNUAL MEETING, FEBRUARY 8, 9, 1968

CONTENTS

	Page
Foreword	iv
Eastern Snow Conference Officers and Committees	v
Management of Snow Pack by Weather Modification By Dr. W. F. Howell	1
Report on Canadian Participation in the International Hydrological Decade By Dr. I. C. Brown	6
The Cooperative Snow Hydrology Project-ESSA, Weather Bureau, and ARS Sleeper River Watershed By M. L. Johnson and Eric Anderson	13
Early and Late Snows in New England as Evidence of Climate Change By D. M. Ludlum	24
Radiation and Snow Melt on a Clear-cut Watershed By C. A. Federer	28
Ice Model Studies for the Northumberland Strait Crossing By J. E. Cowley	43
The Twin Probe Snow Density Gage By C. C. Howe and R. J. Houghton	61
The Disposition of Intercepted Snow By Dr. A. R. Eschner and R. E. Leonard	72
The Present Status of Snow Pillow Instrumentation By Robert Beaumont	82
Snowfall, Snowfall Frequencies, and Snow Cover Data for New England By R. F. Lautzenheiser	85
A City Paralyzed by a Mini-Blizzard By C. H. Pierce	95
Snowfall and Snow Cover at Knob Lake, Central Labrador - Ungava By W. P. Adams and R. J. Rogerson	110
Report of ESC COMMITTEE ON RESEARCH	140
Report of ESC EQUIPMENT COMMITTEE	149

## FOREWORD

In keeping with the objectives of the Eastern Snow Conference "to collect, disseminate, and analyze data relating to snow and ice," the Executive Committee of the Conference is pleased to submit this copy of Proceedings, Volume 13, in recognition of the Twenty-fifth Anniversary of the Conference.

The Eastern Snow Conference is an informal group of business men, engineers, foresters, scientists, and educators from Eastern United States and Canada, which meets annually at some pre-selected location in New England, New York, or Canada. The purpose of these meetings is the interchange of information related to snow, ice, frost, hail, and other phenomena associated with the winter season.

The 1968 meeting was held in Boston, Massachusetts. In 1969 the group will meet in Portland, Maine on February 6 and 7.

Membership in the Conference is open to all interested individuals. For the modest annual dues of three dollars, each member receives one copy of the Proceedings, together with any other data distributed by the Conference. Additional copies of current Proceedings and copies of many of the back issues are available from the Secretary.

## EASTERN SNOW CONFERENCE COMMITTEES

1967-68

President

1968-69

Nicholas Lally  
Corps of Engineers, USA  
Waltham, Mass, 02154

Llewellyn L. Cross  
Chas. T. Main, Inc.  
Boston, Mass.

Vice President

Llewellyn L. Cross  
Chas. T. Main, Inc.  
Boston, Mass.

David R. Campbell  
N. E. Power Service Co.  
Boston, Mass.

Secretary

Gordon R. Ayer  
U. S. Geological Survey  
P. O. Box 948, Albany, N. Y.

Members-at large

David R. Campbell  
N.E. Power Service Co.  
Boston, Mass.

D.M. McMullen  
Dept. Energy & Resources  
Toronto, Ontario

D. M. McMullen  
Conservation Authorities Br.  
Toronto, Ontario, Canada

Gaynor P. Williams  
National Research Council  
Ottawa, Canada

Gaynor P. Williams  
National Research Council  
Ottawa, Canada

Robert Lautzenheiser  
ESSA Weather Bureau  
Boston, Mass.

J. A. S. Milne  
Ontario Hydro  
Toronto, Ontario, Canada

Nicholas Lally  
Corps of Engineers USA  
Waltham, Mass.

Standing Committees

1968-69

Equipment

Joseph Lalley  
Donald Quick  
Saul Cooper  
D. J. McKay

Research

Claude Triquet  
Ray Falconer  
C. A. Federer