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FOREWORD

The 47th annual Eastern Snow Conference (ESC) was held in Bangor, Maine on June 7th and 8th, 1990. The program included oral and poster presentations, and displays of scientific equipment. Almost all of the papers and the advertisements from the equipment companies are published in these proceedings.

For the first time, all of the oral papers at the conference were reviewed, and the revised papers appear in these proceedings. The officers of the ESC hope that the newly instituted review process and Honor Paper Award will assist the authors in improving their papers, upgrade the quality of the proceedings and make the ESC an even more valuable forum for discussion of both practical and scientific issues related to snow and ice.

In order to permit the timely reporting of recent results, we collected draft manuscripts at the meeting. The chairman of each session coordinated the review of papers in his/her session. If the chairman was also an author of a paper in the session, the responsibility for review of that paper was shifted to another chairman. At least two reviews were obtained for each paper and returned to the authors. Final camera-ready manuscripts were submitted by the authors in September. Comments received from the authors concerning the review process were almost entirely favorable. The clear majority thought that their final manuscripts represented a significant improvement from the draft, and we agree.

In addition to the review process, the 1990 proceedings include the initial designation of an Honor Paper Award by the ESC. During the review process the referees nominated papers that they considered worthy of consideration for this award. The criteria that were included in this judgement included:

1. Clarity of the written presentation,
2. Originality of the contribution, and
3. Importance of the work in practice or in basic understanding of snow and ice related processes.

Five papers received unanimous nominations by the reviewers for consideration as 1990 Honor Paper. The final camera-ready version of each of these papers was reviewed by a 5-person panel having a broad range of backgrounds and interests. The authors and co-authors of the nominated papers are not eligible for membership on this panel. The nominated papers were all of high quality, as indicated in the point totals assigned by the reviewers. The 1990 Honor Paper Award was presented to A. Hogan and M. Ferrick for their paper entitled "Air temperature variation over snow-covered terrain."

Publication of this year's proceedings was accomplished with the assistance of the U.S. Army Cold Regions Research and Engineering Laboratory (Technical Communication Branch, Information Management Division). Stephen L. Bowen, David W. Cate and Thomas Vaughan are gratefully acknowledged for their assistance. The editors especially thank Sandra Smith for her exceptional effort in the final production of this document.

Membership in the ESC is open to all interested individuals and corporations. Additional copies of the current proceedings and all back issues can be obtained from the Secretary. The annual meeting of the Eastern Snow Conference is co-sponsored by the American Geophysical Union and the American Water Resources Association. Publication of these proceedings is made possible in part by Corporate Memberships in the Conference held by:

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We look forward to another outstanding meeting in Guelph—June 1991.

Michael Ferrick
Editor

Timothy Pangburn
Associate Editor

FORTY-SEVENTH ANNUAL MEETING, JUNE 7-8 , 1990, BANGOR, MAINE, U.S.A.

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THE EASTERN SNOW CONFERENCE

The Eastern Snow Conference (ESC) is a joint U.S./Canadian organization which was founded in the 1940's. It is an association of people interested in research and applied aspects of the study of ice in all its forms, especially snow. The principal activities of the ESC are the organization of an annual meeting, in the U.S. or Canada in alternate years, and the production of the annual Proceedings of the Eastern Snow Conference, which now form more than forty volumes deposited in libraries throughout North America and Europe. The annual meetings are sometimes held in major cities such as Washington, Montreal, Toronto or Boston and sometimes in smaller cities such as Peterborough, Oswego, Portland or Fredericton.

The members of the ESC are a very diverse and, over the years, fluctuating, group. They include professional snow surveyors, engineers and technologists (of various stripes), professors and students, hydrologists and biologists, people responsible for keeping roads clear of snow and rivers free of ice, and others interested in snow and agriculture. The members are drawn from all parts of eastern North America, they live and work in places which extend from Maryland to the high Arctic. The line between the territory of the ESC and its counterpart in the other half of the continent, the equally venerable Western Snow Conference, is not a precise one. Residents of the Mid-west and of the Prairie provinces seem to join one or the other organization on the basis of personal whim such as a preference for Reno, Nevada, over Bangor, Maine, as a desirable meeting place.

In recent years, the annual ESC meetings have included sessions on snow and small mammals, snow and buildings, river ice, permafrost, remote sensing of snow and ice, biology of sea ice, snow and ice on lakes, measuring snow and ice, hydroelectricity and snow and ice, glaciers, icebergs, snow and farming, etc.

Eastern Snow Conference est une organisation internationale canado-américaine fondée dans les années '40. Elle regroupe des gens qui ont des intérêts communs dans l'étude théorique et pratique de la glace sous toutes ses formes, en particulier sous la forme de neige. Eastern Snow Conference a comme activités principales d'organiser sa réunion annuelle en alternant le site du Canada aux États-Unis, d'en produire les comptes-rendus qui se montent maintenant à plus de quarante volumes que l'on peut trouver dans les bibliothèques de l'Amérique du Nord et d'Europe. La réunion annuelle peut se tenir tout aussi bien dans des villes importantes comme Washington, Montréal, Toronto ou Boston comme dans des plus petites comme Peterborough, Oswego, Portland ou Frédéricton.

Les membres d' Eastern Snow Conference représentent un grand nombre de domaines reliés à la neige et la glace. On y retrouve des spécialistes des relevés de neige, des ingénieurs et des techniciens, des professeurs et des étudiants, des hydrologues et des biologistes, des gens ayant la responsabilité d'entretenir les chemins en hiver ou de contrôler la glace en rivière, d'autres ayant quelque intérêt dans la neige et l'agriculture. Tous ces membres viennent de l'est de l'Amérique du Nord et peuvent y habiter de Maryland, U.S.A., à l'Arctique. D'ailleurs la ligne qui sépare le territoire d' Eastern Snow Conference à son pendant de l'ouest la vénérable Western Snow Conference est assez diffuse. Les habitants du centre-ouest américain ou des Prairies peuvent choisir de rallier une ou l'autre organisation sur une base très personnelle comme de préférer d'aller à Reno, Nevada, plutôt que Bangor, Maine, pour leur colloque annuel.

Dans les dernières années, aux réunions annuelles d' Eastern Snow Conference on a tenu des sessions sur la neige et les petits mammifères, la neige et le bâtiment, la glace de rivière, le pergélisol, la télédétection de la neige et de la glace, la biologie de la glace marine, la neige et la glace lacustres, la mesure de la glace et de la neige, l'hydroélectricité et la glace et la neige, les glaciers, les icebergs, la neige et l'agriculture, etc.

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THE PRESIDENT'S PAGE

General Activities

In addition to the ongoing activity for the preparation of the 47th annual meeting of the Eastern Snow Conference (ESC) at Bangor, Maine, in the spring of 1990, the major effort that took part during the year was the Editor's definition of a refereeing procedure for the papers submitted at the annual meeting. The precise description of the procedure may be found in the Foreword; it suffices to note here, however, that the decision to introduce the review process into the preparation of the proceedings was not taken lightly. I will not elaborate on the reasons which led to the adoption of the review proposal, except to say that it was taken after two years of thoughtful, and sometimes vigorous!, discussion, and on the pertinence of refereeing papers relative to the context of ESC activities and interest. It was ultimately felt, however, that a review process could be worked out which respected both the need for continuity in the ESC traditional activities, and the desire to attract new blood by offering the equivalent of a recognized refereed journal for the publication of peer-assured quality papers. The review procedure is, itself, under review and the Editor would welcome any comments and suggestions from the members on this matter.

Committees

1. Research Committee.

It was decided that the status requirements for students wishing to submit a paper for the Student Paper Competition be made more flexible; the competition is now open to both full-time and part-time students.

The awards for the competition are currently:

Winning paper; a one year free membership in ESC, the Weisnet medal, \$250.00 cash prize, and up to \$500.00 travel and associated expenses.

Runner-up papers; a one-year free membership in ESC, an ESC President's certificate and a \$100.00 cash prize.

This year the Research Committee judged that A.K. Abdel-Zaher of the University of New Brunswick, Canada, should be the recipient of the award for his paper "Numerical investigation of border ice failure."

2. Snow Survey Committee.

The Snow Survey Committee carries out its regular program of data acquisition from the satellite Landsat overpasses and snow surveys reported by the five regional centers in Canada (Atlantic provinces, New Brunswick, Quebec) and the United States (Maine, New England States). The committee is always alert to technological advances in the field and is also presently considering the development of a training video on both the sampling of snow and the measurement of snow-cover properties.

3. Equipment Committee

The task to put together a snow equipment reference manual has turned out to be significant in both time and effort. It has, in effect, led to an alternative proposal which will be examined in the coming year.

The suggestion is that a section in the proceedings would be devoted to one type of equipment only; the articles would be published at a rate of approximately one per year.

Final Thoughts

“Another good one come and gone” an old, but well-worn cliché often heard at the end of a successful meeting (yet again) of the Eastern Snow Conference; and the 47th annual meeting at Bangor, Maine, was no exception. The turnout was excellent and the diverse nature of the program made for the exchange of knowledge and ideas between attendees from many different backgrounds and expertise. A quick glance at the Table of Contents in this proceedings shows clearly the wide scope of interests of the members, ranging from the microphysics of snow crystals to animal behavior during the winter season. For many years this multidisciplinary facet of the ESC has evolved to the point where each meeting finds academics, operational personnel, and management under the same roof discussing the same materials, snow and ice, in, however, so many different ways.

This diversity of the ESC can be fragile; each member wishes to find himself in the familiar surroundings of his own expertise while expecting a profitable input of ideas and new techniques from other disciplines. Maintaining multidisciplinary meetings which can stimulate the interest and interactive participation of a wide range of professions is, thus, not always an easy task. However, as David Daugharty concluded in his 1988 President's page message on the need to maintain close ties between academics and operators in the ESC, we must keep working at it and we must have patience. Patience in the knowledge that the solution to large-scale environmental problems just cannot be tackled without the interdisciplinary approach. And so the ESC continues to act as a forum for the teachers and the students, the theorists and the operators, for all who have an open mind and a desire to further the multidisciplinary practice of snow/ice science and technology.

Finally, and on a personal note, my thanks to one and all, the stalwarts of the executive, the committee chairmen, members, and the local arrangements committee who made everything tick along so easily during the year. See you in Guelph, Ontario for the 48th—it looks like it's going to be a corker!

H. G. Jones
President
Eastern Snow Conference