Laboratory of the Defence Research Board is responsible for the programme of observations and the training of operators.

In the period 1948–49, A. B. Neill was in charge at Clyde Inlet, E. E. Stevens at Baker Lake, R. R. Curtis at Churchill, J. E. C. Leggatte at Fort Chimo, and D. Bower at Resolute Bay. A. B. Neill and three of the staff of the Clyde Inlet station, B. F. McManus, C. D. McKenzie, and W. Groff, were killed on 22 August 1949 when the aircraft which was carrying them southwards crashed between Churchill and Winnipeg.

CONFERENCE ON GLACIOLOGICAL RESEARCH, NEW YORK, 1949

[Summarized from an unpublished report of the American Geographical Society entitled "Conference on glaciological research under the auspices of the Arctic Institute of North America and the American Geographical Society, New York City, 1949".]

This conference, organized by the Arctic Institute of North America and the American Geographical Society, took place in New York on 18 and 19 January 1949. Its purpose was the discussion of various problems and methods of glaciological research. Those present were: Dr Henri Bader, P. D. Baird, Dr Walter H. Bucher, Milton Dobrin, Dr James L. Dyson, William O. Field, Joel Ellis Fisher, Henry S. Hall, Jr., Dr Serge A. Korff, Robert Lange, Dr Richard U. Light, Nelson McClary, Maynard M. Miller, Dr Robert L. Nichols, Mrs Philip Dana Orcutt, Frank Press, Dr Louis L. Ray, Dr M. C. Shelesnyak, Dr Arthur N. Strahler, Andrew Thompson, Dr A. L. Washburn, Walter A. Wood, and J. Lamar Worzel.

On 18 January W. A. Wood gave a lecture on Project "Snow Cornice", describing the establishment of the Seward Glacial Research Station in 1948.[1]

On 19 January Dr Bader, formerly of Eidgenössisches Schnee- und Lawinenforschungsinstitut, Weissfluhjoch (the Swiss federal institute for snow and avalanche research), reviewed the problem of the transition of firn to ice, and that of glacier movement, and urged that a physicist should study the dynamics, thermal regime, and thermodynamics of firn snow and ice masses in order to determine how these problems should be approached. He emphasized the need for long-term co-ordinated field, laboratory and theoretical research on easily accessible glaciers. Dr Bucher advocated the application of methods used in modern structural geology to solve the problem of the transformation of firn snow into ice. He pointed out the value of vertical air photography in any analysis of the fracture patterns of glaciers. Dr Dyson then described his investigations on the relatively small and rapidly shrinking glaciers in the Glacier National Park. W. A. Wood summarized the programme of studies to be made at the Seward Glacial Research Station in 1949, and P. D. Baird outlined plans for the study in 1950 of a remnant ice mass, 60 miles long by twenty-five wide, situated in Baffin Island in about lat. 70° N. Finally, W. O. Field gave an account of glaciological investigations in south-eastern Alaska and in Argentine Patagonia, known as the Glacier Study Project of the American Geographical Society.

[1] See the *Polar Record*, Vol. 5, No. 39, 1950, p. 456–58.

Various points were then discussed. It was agreed that a main problem was how to increase productive field work in relation to the total time spent in the field. It was recognized that one way to achieve this result is to improve living conditions. The support given by the military authorities to research projects was welcomed, and mention was made of the excellent facilities afforded by the Arctic Research Laboratory at Point Barrow, Alaska.

Various important differences in the Juneau Ice Field Research Project and Project "Snow Cornice" were indicated by M. M. Miller. First, while detailed studies can be made in the firn line zone of the Juneau Ice Field, it is much more difficult to reach this particular level in the Seward-Malaspina area. Second, low-level ice and weather observations have been made for more than 50 years in the area of the Juneau Ice Field, providing a means of comparison of results. No such facilities are available to Project "Snow Cornice". Third, the Juneau Ice Field, unlike the Seward-Malaspina, is readily accessible. Fourth, the Seward Malaspina is arctic and alpine in character, whereas the Juneau Ice Field is not. Fifth, the Juneau Ice Field presents the opportunity to study an advancing glacier—the Taku Glacier, about which data are available since 1890. Sixth, there are different structural features in each area.

It was asked whether gravimetric equipment might be used for mapping rock contours under ice, and what equipment might best be used to measure the thickness of the ice. J. L. Worzel thought that gravimetric equipment would be unsatisfactory; the answer to both problems was the use of seismic equipment. As the problem is complicated by the question of velocity of sound in glaciers Dr Bucher urged that publication of seismic results should always include copies of the seismic record and details of evaluation. M. Dobrin suggested that to determine ice thickness, use might be made of electrical resistivity to establish where discontinuity arises in two different conductivities. Reasonable success had been achieved in permafrost up to a depth of 200 or 300 ft. by this clumsy, though relatively inexpensive method.

The problem of ice drilling was discussed, and Dr Bader doubted whether it would be possible to drill deeper than 1000 ft. as the hole would automatically close owing to hydrostatic pressure. It was agreed that experience obtained in drilling for oil to great depths should not be overlooked in investigating this matter.

Finally, lectures were given by Dr Richard Foster Flint on "The American Alpine Club as an auxiliary in glacial research"; Dr Dyson on "The glaciers of the Glacier National Park"; and M. M. Miller on "The Juneau Ice Field Research Project, 1948".