The Arctic Institute of North America would be interested in serving as coordinator of the proposed project. It is hoped that the Institute could work through the Arctic Institutes of other countries to effect close coordination of plans and an exchange of data.

The First International Scientific Meeting on the Polar Bear adjourned on the note that the principal nations bordering on the Arctic are anxious for international cooperation in such vital matters as the preservation of the polar bear, and it is certain that the Meeting represented a major step forward in that direction. As transpolar transportation continues to develop, and as the interests of Canada, Denmark, Norway, the United States and U.S.S.R. continue to merge at the poles, more meetings such as this will be called on matters of mutual interest.

ICEFIELD RANGES RESEARCH PROJECT

The Icefield Ranges Research Project (IRRP) began its fifth research season 5 May 1965 when those people who were studying meteorology and climatology arrived in Whitehorse, Yukon Territory, for a two-day briefing under the direction of Mr. H. Wahl, Chief Forecaster for the Department of Transport weather station. Personnel involved in other research continued to Kluane Lake to open the base station and to begin checking and calibrating equipment and instruments. Kluane Station (870 m.) was fully operational by 10 May. The Kaskawulsh and Divide Stations (1730 m. and 2640 m.) were in operation by, respectively, 14 and 28 May. Seward Station (1850 m.) was opened 8 July for a three week intensive micro-meteorological study. Kaskawulsh terminus camp and three other satellite camps also were occupied during part of the summer. Personnel departed from Kluane Lake by Institute bus, carryall, and aircraft on 20 August.

In the course of the 15-week research season there were 14 programs involving 47 people. Research included studies in glaciology, glacial hydrology, geophysics, dielectric measurements in snow and radio wave propagation, climatology and meteorology, geomorphology and glacial chronology, stream morphology, plant and animal ecology, and aerial photography and mapping. To support the field parties, over 300 hours were flown by the Arctic Institute's Helio Courier aircraft and over 300 landings were made on glaciers and unprepared surfaces. Among the members of the summer program were three Doctorate and three Master's degree candidates.

IRRP was amplified in 1965 by a National Science Foundation program of Research Participation for College Teachers. Six teachers took part in a 10-week program in which they were given an opportunity to observe and assist in a number of activities within the broadest boundaries of their chosen field of science. As a consequence, three teacher participants have been awarded Academic Year Extension grants by the National Science Foundation to continue research in the St. Elias Mountains during 1966 and 1967.

A research program in part logistically supported by IRRP and complementary to the IRRP hydrological traverse was undertaken by a five member team of scientists from the U. S. Army Cold Regions Research and Engineering Laboratory, Hanover, N.H. The project involved snow studies in vertical profile on the north side of Mount Logan to elevations in excess of 5400 m.

In September, Assistant Professor M. G. Marcus, University of Michigan, and staff member of IRRP, presented a paper at the VII INQUA Congress of the International Association for Quaternary Research. The title of the paper was *A Hydrological Traverse of Glaciers in the Icefield Ranges, St. Elias Mountains, Alaska-Yukon Territory.* The

paper is a report on data gathered in May and early June 1965 from a reconnaissance traverse across the Icefield Ranges from the Lower Seward Glacier across the glacier divide of the Hubbard and Kaskawulsh glaciers to the lower Kaskawulsh Glacier.

RICHARD H. RAGLE

CLOTHING DEVELOPED BY THE INSTITUTE

During the past few years man has learned to live through the polar seasons in isolated regions where temperatures during the winter may dip to −100°F. In these extreme conditions only a light wind is needed to freeze exposed flesh within a few seconds. To guard against this danger man must, of course, be protected with adequate and practical clothing.

It is impossible to equip a large number of men with fur or skin garments, although these garments are time proven and tested. There are not enough fur bearing animals to supply present or future demands, and the price would be exorbitant. Therefore, today's well-dressed scientist in the Arctic and Antarctic wears multiple layers of special AINA-developed cold weather clothing made of cotton, synthetic fibres, felt, leather, rubber, wool and sheepskin as well as fur. His garments are designed for utility, safety, simplicity, lightness and personal comfort. To achieve these ends and effectively provide for the variable body temperatures generated under extreme conditions, the layer principle of clothing is used. Under this principle, instead of donning a single *heavy* garment once a certain threshold is reached, protective layers of clothing are added gradually as the temperature drops. Garments are constructed so as to be loose and baggy at the body's pressure points, fitting snugly at the ankles, wrists and neck to keep body heat in and cold air out. In addition the clothing is snow, wind, and water-repellent and well ventilated to avoid the condensation of excessive perspiration.

Under extreme environmental conditions today's polar investigator may wear the following garments: all cotton waffle-weave "Long John" two-piece underwear; and over the underwear baggy, windproof, water repellent trousers, also referred to as "the many pockets". These have a detachable inner-liner of non-directional orlon fleece backed by a cotton nylon lining. This combination is held up by a pair of armhole suspenders. Over the suspenders is worn a wool shirt with the tails hanging out over the pants and liners. Topping all is a loose-fitting parka coat with a detachable liner and a wolverine trimmed hood which can be shaped around the face. A pile cap made of windproof and water repellent fabric may be worn under the parka hood. It is insulated with polyurethane foam backed by a wool knit lining and has a hinged visor and dynel covered earflaps.

Oversized, cotton-oxford insulated mittens with a leather palm and soft pile covering on the back are worn when maximum protection is needed. The extreme cold weather foot gear consists of a combination of shearling socks (inner and outer) and a polyurethane coated water repellent nylon boot (mukluks).

By resorting to the use of the above-mentioned materials, the Institute's clothing research and development program has effected a considerable reduction in the weight of a cold weather clothing ensemble. Formerly, a well-dressed investigator was muffled up in five or six layers of clothing weighing in excess of forty pounds. The complete extreme dry-cold ensemble described above weighs only 15 pounds and 9 ounces distributed as follows: