pack at five locations on the Kaskawulsh and Hubbard Glaciers. During May, a hydrologic traverse of the upper Kaskawulsh Glacier was accomplished. Snow studies were also carried out at a series of sites located between 10,500 feet and 18,000 feet on Mount Logan. This work was done by a team from the United States Army Cold Regions Research and Engineering Laboratory.

Glacial Geology and Geomorphology

Field research was completed on the occurrence and development of solifluction lobes in the Gladstone River region. Four slopes were mapped for diurnal and seasonal variations of soil moisture and temperature, downslope movement, vegetation, and depth of active layer. Morphology and structure of the lobes was determined by excavation; buried organic layers are being dated by the C^{14} method. Additional time-lapse observations were made of related features, such as frost boils, tombstone rocks, and blowout pits.

Research into the glacial geology and chronology of the St. Elias Mountains and environs was continued in 1968. Glaciation features in the Fox Glacier/Steele Glacier area and the upper White River region were mapped and dated. Additional work in the White River and Skolai River areas was accomplished. Sedimentation and stream morphology investigations were also conducted on the Donjek River.

Hydrology and Limnology

A hydrological net was maintained for streams draining the Fox Glacier watershed. Measurements of discharge, suspended sediment load, and bed load were taken. A field laboratory permitted analysis for pH, electric conductivity, hardness, Ca^{++} and Mg^{++} content, and alkalinity (HCO_3).

A physical limnologic study of Lake Kluane was initiated. Bathymetry was determined for the southern third of the lake; shallow cores, sediment load, and temperature profiles were also taken in this sector.

Meteorology and Climatology

A twenty-four-hour program of weather observations was maintained at major research camps. Divide and Kluane stations were operated for the sixth consecutive field season. Several climatological research programs were conducted under the High Mountain Environment project umbrella (see following report).

EDUCATIONAL PROGRAM

For the fifth year, the Icefield Ranges Research Project cooperated in the National Science Foundation's program for Research Participation for College Teachers. Six college teachers took part; for two of them it was the second year, and they had developed their own research projects. Many project personnel worked on graduate theses or gained field and research experience as scientific assistants.

Melvin G. Marcus

High Mountain Environment Project, 1968 Field Season

Under sponsorship of the U.S. Army Research Office, Durham, the Arctic Institute's High Mountain Environment Project continued research activities for the second year in the St. Elias and Wrangell Mountains, Yukon and Alaska. Twenty-three investigators and their assistants maintained a three-phase program from May to August 1968. These three phases are described below.

1. *Chitistone Phase.*

A field research station was operated for the second year at Chitistone Pass, Alaska. Investigations which had been focused in the immediate Chitistone Pass locale in 1967 were extended throughout the length of the Skolai River Valley and 20 miles downstream in the Chitistone River Valley. The main research station was operated from 11 May to 19 August.

The following work was undertaken:

a) A first-order meteorological station was operated at Chitistone Pass.

b) Mesoclimatological and microclimatological studies were concentrated in the pass area for the second year, but automatic instrumentation was extended across the Skolai Valley and down the Chitistone River. For the second year, all energy budget parameters were collected along a four-stage microclimatological profile transverse of the pass.

c) A two-year floristic and ecological study of the area was completed.

d) An investigation of phenology and its relationship to seasonal climate and snow melt was made.

e) The first of a two-year thermal investigation of ice-cored moraines was accomplished through moraine and ice cores at 6 sample sites — to be recovered and observed from late April through August of 1969. Objectives include delineation of the structure and morphology of selected moraines, measurement of debris movement and wastage, and an analysis of processes acting to preserve these features.

f) The glacial geology and chronology of eight alpine glaciers in the pass region were mapped and interpreted.

g) A two-year measurement program of mass wasting and weathering processes on fluvial and periglacial features in Chitistone Pass and the Skolai Valley was finished. For the second year, environmental measurements were made along a 1,080-metre transect. Measurements included seasonal changes of depth of the upper permafrost layer, seasonal snow melt, soil temperature and moisture content, and phenological aspects of the vegetation cover. The transect is also contiguous with the energy flux profile.

2. *Logan Phase.*

The High Mountain Logan environmental project was operated from early June through the first week of August. Both independently and in association with a research team from the Cold Regions Research and Engineering Laboratory (CRREL), environmental studies were accomplished during June and July. Included were regular meteorological observations, radiation measurements, snow samples for cation content and $Oxygen^{18}$ content, snow density and accumulation studies, and hard rock geological collection and mapping.

The Logan research station was re-established at its 1967 site. The station elevation of 17,590 feet was determined by an Ohio State University Institute of Polar Studies survey team. A program in physiological research was successfully completed with participation of the Canadian Armed Forces' Institute of Aviation and Medicine. The Mount Logan research project demonstrated that the maintenance of a high altitude laboratory is logistically feasible and that studies in such a field laboratory give insights not to be gained in pressure chamber situations.

3. *The Broad Scale Climatology Phase.*

In cooperation with the Icefield Ranges Research Project, all weather stations in the High Mountain and Icefield Ranges network were integrated in a single operation. Observations were relayed every three hours through the Whitehorse Weather Station to the Canadian and United States teletype circuits. Upper air temperature studies were conducted throughout the season by use of the project's Helio Courier Aircraft. A principal objective of the broad scale climatology program is to interpret influences of a major topographic barrier on local weather patterns as well as major air mass migrations and storm tracks in the region.

Melvin G. Marcus
DEPARTMENT OF GEOGRAPHY
UNIVERSITY OF MICHIGAN

20th Alaska Science Conference

The 20th Alaska Science Conference will be held 24-27 August 1969 at the University of Alaska Campus, near Fairbanks, under the auspices of the Alaska Division, American Association for the Advancement of Science. Conference symposia and panels will be organized around the theme "Change in the North: People, Resources, and Environment."

The focus of the conference is on requirements and effects of petroleum development, and their implications, with emphasis on the Arctic Slope; on the ecological impact of development; and on the changes taking place with respect to the native people of the north. Key issues to be dealt with include: what kind of development versus how much conservation, the economic and political basis for decisions about resources development, settlement of native land claims, and the integration of Alaska natives into the socio-economic structure of the state. The purpose of exploring these and other issues will not be to reach a consensus, but to evaluate existing knowledge, identify priorities and needs, and open the way toward more effective research and policy development in the future.

The conference will bring together social and physical scientists, representatives of government and industry, and affected and interested citizens. Participants will come not only from Alaska and northwestern Canada, but will include also those from the non-north who can bring new and better insight to those directly concerned with northern resources, environment, and people.

For information about submission of papers or attendance, write:

Victor Fischer,
Conference Chairman,
20th Alaska Science Conference,
University of Alaska,
College, Alaska 99701.

Note to Fellows of The Arctic Institute of North America

In pursuance of By-Law IX.B (iii) which reads as follows:

> The number of Fellows at any one time shall not as far as practicable exceed fifteen per cent of the number of Associates at that time.

there will be no election of Fellows this year, 1969.