Photograph by Russ Kinne

The launching of a helium balloon for measurement of wind speeds aloft. Icefield Ranges Research Project, Divide Station, July 1965.

YESTERDAY AND TODAY

John C. Reed*

The Need Increases and the Institute Grows

THE preceding chapter describes some of the forces that resulted in the formation of the Institute, and carries the story through the formative stages.

This chapter begins in 1945 when the Institute's first full-time Executive Director, A. Lincoln Washburn, climbed the stairs to the first quarters in a couple of rooms in the administration wing of McGill University's Arts Building in Montreal. Washburn, as mentioned in Parkin's chapter, was largely responsible for the new organization becoming well-oriented on a course of broad and imaginative service to the cause of northern research in both the natural and the social sciences. It was found difficult to replace him when he resigned in 1950 and the post of Executive Director was left vacant until 1952 when R. C. Wallace, who had recently retired as Principal of Queen's University, became the Executive Director and served until his untimely death in 1954. Wallace was followed by T. H. Manning, who occupied the position until the end of 1955, after which the post was left unfilled until April 1957 when A. T. Belcher, formerly of the Royal Canadian Mounted Police, assumed the office. Belcher directed the Institute until the spring of 1960 when the author of this article became the Executive Director.

After running quickly over the first few years, this chapter will deal mainly with what the Institute is doing in the environment in which it now finds itself at the dawn of the space age, when research appreciation is blossoming and the scientist is a man of stature.

In 1945, the first year of actual operation, the Institute carried on its business on an income of about $10,000. By 1950 the level of activity had risen to approximately $156,000 and, in the next five years, to around $400,000 a year. Since 1958 the yearly revenues have fluctuated between about $1,000,000 and $1,500,000; the total revenue for 1965 was $1,167,000. This gives a fair idea of the level of activity through the years.

Most of the funding of the Arctic Institute has been, and continues to be, from government sources through a variety of grants and contracts, mostly for specified purposes. Nevertheless continuing and significant support has come from other sources, including some foundations, industry, and private individuals. In respect to the non-governmental category, the Institute owes a great deal indeed to Walter A. Wood, a Governor of the

* Executive Director, Arctic Institute of North America.

Institute through many of its twenty years and currently the President of the American Geographical Society. Since the late 1940's Dr. Wood has given generously of his time, his thought, and his substance to the Institute, especially in the New York area, in assisting the organization to develop and improve its public image among foundations, industry, and individuals, and in enlisting financial support from those sources. For years he sparked the efforts of a formally designated committee in New York.

The Montreal Office and headquarters of the Institute which was first in the McGill Arts Building was next housed in the University's Ethnological Museum in the Medical Building. Subsequently the Office occupied the Bishop Mountain House on University Street where it remained until, in December 1961, it moved into its present quarters, also a McGill University Building.

Photograph by David Bier

The headquarters of the Arctic Institute, Montreal.

The Office has been headed by a Director since 1948, except for a period between 1957 and 1960. The sequence of Office Directors has been P. D. Baird, Svenn Orvig, George Watson, M. Marsden, K. de la Barre (Acting) and, since February 1965, H. W. Love.

The New York Office of the Institute has been headed by Walter A. Wood continuously since its establishment in 1948. It was first in the building of the American Geographical Society, then at the New York Academy of Sciences, and is now in the recently acquired building of the Explorers Club.

In 1949 and 1950 the Institute maintained an office in The Johns Hopkins University in Baltimore through the courtesy of the University. It was headed by M. C. Shelesnyak, formerly of the U.S. Office of Naval Research. Subsequently, at the generous invitation of the Carnegie Institution of Washington, an office was opened in its building in Washington where it remained for twelve years until, in 1963, it moved into the present building purchased by the Institute.

Successive Office Directors have been A. L. Washburn; L. O. Colbert, formerly Director of the U.S. Coast and Geodetic Survey; and, since 1959, Robert C. Faylor.

A small office headed by J. Cantley was occupied in Ottawa in 1956 and 1957, and other project offices have been maintained from time to time.

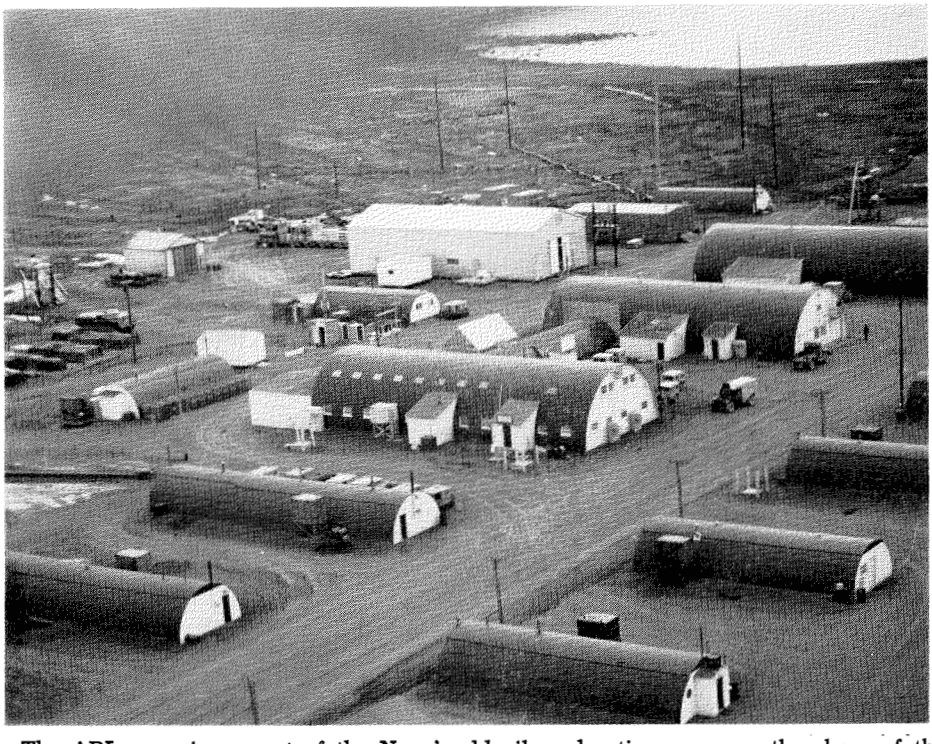
Through the first twenty years, the Arctic Institute has faithfully adhered to its objectives as set forth in its articles of incorporation in both Canada and the United States; these are quoted in part below:

> to initiate, encourage, support and advance . . . the objective study of arctic conditions and problems . . . ; to collect, arrange and preserve records and material relating to the arctic regions . . . ; to make such records and material available for pure and applied scientific use by qualified individuals and organizations . . . ; to arrange for or to assist in the publication of reports, maps, charts and other documentary material . . . ; to establish and maintain close contact with other Polar Institutes and Organizations engaged in similar or related fields of study.

As the years have gone on the wisdom and foresight of the little group of founders have been confirmed abundantly. Today the original objectives are even more desirable and more urgent than they were then. Canada has increasingly recognized the importance of the Arctic and Subarctic that constitute eighty per cent of her territory; HMCS *Labrador* has made the Northwest Passage; nuclear submarines can ply the polar ocean at will under the shifting ice cover; Alaska has become the 49th State; oil and gas have been found in quantity in arctic and subarctic North America; luxurious commercial aircraft make routine intercontinental flights in large numbers over the Arctic Ocean; large-scale research efforts, running into tens of millions of dollars a year and internationally coordinated are under way in the Antarctic. One could go on and on.

Of all the organizations that have markedly influenced the Arctic Institute perhaps four should be singled out for special brief mention because of their effect on the Arctic Institute of North America during the period covered by this article. These are: the Office of Naval Research of the United States Department of the Navy, the U.S. National Science Foundation, the National Research Council of Canada, and McGill University. Many others could and should be mentioned and would be if space permitted.

In September 1946 Vice Admiral Bowen, Chief of the newly organized Office of Naval Research (ONR) wrote to the Executive Director of the new Arctic Institute and others and asked their advice about the proposal to establish an arctic research station near Point Barrow, Alaska. The



The ARL occupies a part of the Navy's old oil exploration camp on the shore of the Arctic Ocean near the Eskimo village of Barrow, Alaska. (Photograph by J. Koranda.)

Executive Director's reply was enthusiastically favourable and shortly afterwards the Arctic Research Laboratory (ARL) was established. Thus the Office of Naval Research, the Arctic Research Laboratory, and the Arctic Institute came into existence within a year or two of each other; and ever since they have been closely associated in numerous projects and programs.

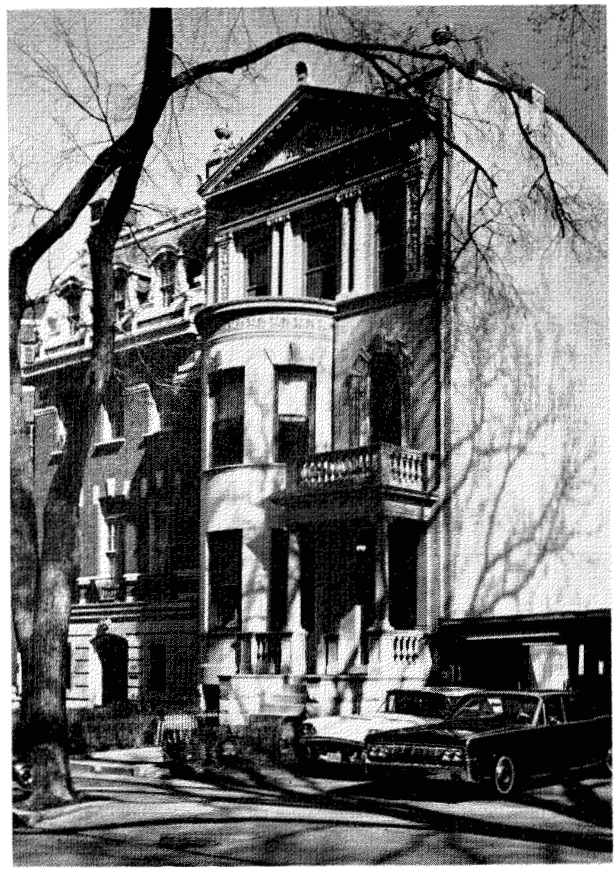
Through a basic contract with the ONR, the Arctic Institute now is able to provide a substantial number of subcontracts to scientists to work out of the ARL, and these constitute an appreciable part of ARL's research program.

The association between the two organizations over the years has also included, under appropriate contractual arrangements, partial support by the ONR of the compilation of the *Arctic Bibliography*, the planning and management by the Arctic Institute of visits to arctic research sites, as well as the planning, organization, and administration by the Institute of several symposia on special arctic topics of interest to the ONR.

The administration of the ONR contract is largely the responsibility of the Washington Office of the Institute.

The Institute over the years has also been assisted by the U.S. National Science Foundation (NSF) in carrying on many of its activities. The first major impetus was NSF support of certain Institute projects during the

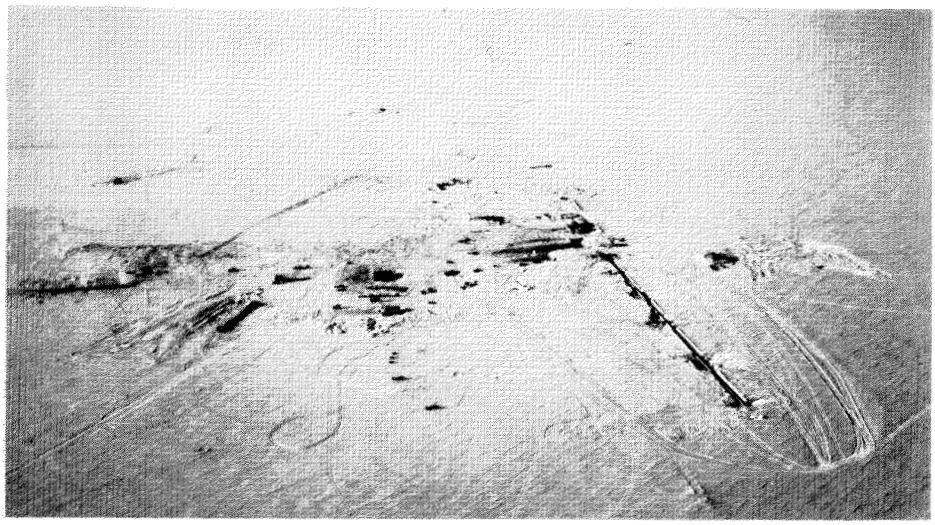
The Washington Office.



International Geophysical Year, including the investigation of the McCall Glacier in the eastern Brooks Range of northern Alaska; the establishment and operation of a biological laboratory at McMurdo Sound in the Antarctic; the making of some of the earlier antarctic over-ice traverses; the establishment of a glaciological headquarters; the provision of a scientific leader at Pole Station in 1957-58.

The Arctic Institute, also with NSF funding, became involved in the U.S. antarctic program by taking on some of the logistics-support functions, principally the development and supply of items of clothing and camp and trail gear. This participation of the Institute in the antarctic program still goes on and has been significant also in extending the Institute's interest to the Antarctic as well as the Arctic. The Institute also for a number of years has been operating aurora and airglow observational projects at most of the U.S. antarctic stations.

The NSF for a time supported the integrated research program that the Institute was carrying on from a field facility on Devon Island in Canada's Queen Elizabeth Islands.



Pole Station, Antarctica, February 1964. (Official U.S. Navy Photograph.)

Recently the NSF has assisted in the publication of Volume 12 of *Arctic Bibliography;* it has, through grants, enabled teachers from small colleges in the United States to attend the McGill University Summer School of Geography at Stanstead, Quebec, which includes a specific part on arctic geography, and has made it possible for half a dozen teachers from small colleges to participate in several aspects of the Institute's Icefield Ranges Research Project in southwestern Yukon Territory.

The National Research Council of Canada (NRC) helped finance the organization of the Arctic Institute more than twenty years ago. For about half a dozen years it has been providing unrestricted assistance and in 1963 increased its support to $50,000 a year for three years. The nature of that contribution has permitted participation, with relatively small added assistance, in many projects that otherwise could not have been undertaken successfully.

The relationships of the Institute with McGill University have been close and satisfying. There is no administrative or organizational tie between the two organizations, but their cooperation has been of mutual benefit. Several McGill faculty members have served on the Institute's Board of Governors and on its committees. Others are Fellows of the Institute. A substantial number of grants-in-aid have been made by the Institute to graduate students and faculty members, and McGill has supplied the Institute with quarters from the outset in 1945 at only a small maintenance charge.

The Institute has organized and operated a course on the Arctic as one of the University's regular extension courses, and over many years has provided lecturers, seminar leaders, and some financial assistance to the McGill Summer School of Geography. In 1963 the University and the Institute collaborated in an arctic symposium.

Transporting food and fuel from the landing beach to the base camp, Devon Island, May 1965. (Photograph by W. Barr.)

In all of these matters the Institute has been guided by a Board of Governors that now numbers twenty-four persons. Most of the governors have been Canadians or Americans. Originally the by-laws called for Greenland to be represented by at least one member but that provision later was rescinded. At the present time one of the members is Danish. Many are or have been eminent men indeed in science, education, industry, or government administration. As may be seen from the list of Governors, pages 102-107, chairmen of the Board have been eminent in many scientific fields including anthropology, geology, biology, geography, oceanography, marine biology, industry, and botany.

Some Institute Activities

The foregoing thumb-nail descriptions of the relationships between the Arctic Institute and only four of the many organizations with which it deals in one way or another serve to indicate a goodly number of the activities in which the Institute has been engaged in the past twenty years. A little further specification of some of its activities as 1966 begins will give a reasonably proportioned picture of how the Institute today attempts to attain its objectives within its limited resources.

More financing is by no means the whole answer. The need for more research in the polar regions, especially in the North, and in both the social and the natural sciences is greater than it was twenty years ago. But more funds alone will not accomplish this. More people — young, trained, enthusiastic, dedicated people — are urgently needed. They must be inspired,

trained, and given the opportunity to carve for themselves satisfying careers in northern research. Constant review is needed by experienced and competent people to keep the Institute's efforts as effective and as efficient as possible. This is accomplished reasonably well through a pattern of specialized committees that advise the Board of Governors. The Board, in turn, gives policy guidance to the administrative staff.

Mention of a few of the Institute's activities will give some idea of the efforts being made to meet the objectives.

An Outstanding Polar Library

The Arctic Institute is proud of its library which has one of the best polar collections in the world. The permanent staff consists of a professional librarian and one assistant. The library circulation has been increasing markedly since the Institute moved into its present quarters in 1962, and interlibrary loans throughout North America have also increased. Occasionally library-school students from McGill University receive part of their training at the Institute.

The library contains about 7500 bound volumes, 20,000 reprints and pamphlets, and receives 800 serials on exchange or subscription. Cooperation is active with polar organizations around the world and exchanges have been effected in 27 countries The Institute has organized and opened a polar map library as a part of the regular library.

A Substantial Publications Program

Apart from *Arctic,* which is published quarterly and has a circulation of about 2,400 in 31 countries, there are several other Institute publications. Papers either too long or too specialized for inclusion in the journal are published in the Technical Papers series. So far seventeen have been produced and their distribution is increasing. The three recent papers on *Eskimo Administration* by Diamond Jenness have proved to be among the most popular in the series.

Special Publications are also issued from time to time. So far there have been four. The latest is a major volume by Wiggins and Thomas on *A Flora of the Alaskan Arctic Slope.* It was published for the Arctic Institute under an arrangement with the University of Toronto Press.

The Institute is engaged in a major project of translating Russian anthropological papers and publishing them in English. So far there have been six in this series which is entitled *Anthropology of the North.*

A major project of the Institute for many years has been the compilation and publication of the *Arctic Bibliography,* which is generally conceded to be one of the outstanding regional bibliographies. The twelve volumes so far published contain abstracts of more than 70,000 scientific publications. Volume 13, to be issued shortly, will be published in Canada by the McGill University Press; all previous issues were printed by the U.S. Government Printing Office.

The Institute has supported the publication by the University of Kansas

of a series of volumes by Francis Harper. Included in the series are *The Barren Ground Caribou of Keewatin, The Birds of the Ungava Peninsula,* and *The Land and Fresh Water Mammals of the Ungava Peninsula.*

The Institute has also been instrumental in publishing or assisting in the publication of various other volumes from time to time. One of these, entitled *Blazing Alaska's Trails* is a compilation of essays prepared by the late Dr. Alfred H. Brooks, formerly of the United States Geological Survey. The volume was published with the joint support of the University of Alaska and the Arctic Institute. Plans are now being made by the University to republish the book.

In addition, the Institute has published a book entitled *The Arctic Basin,* a comprehensive discussion of arctic environments in terms of several disciplines, and the proceedings of a symposium on the Arctic Ocean Basin held in 1962 at Hershey, Pennsylvania. A third example of occasional publications is *Institutions of the USSR Involved in Arctic Research.*

This year a volume entitled *Arctic Frontier* will be published in cooperation with the Canadian Institute of International Affairs. It contains chapters by twelve authors and is concerned especially with the significance of Canada's North in her international relations.

Research Support — A Mainstay

And now we come to the support of research by the Arctic Institute; here we probe the very heart of the organization and one of the principal reasons that there is an Arctic Institute. Several aspects of research support and interest are apparent — these include direct grants-in-aid of research, the performance of research in fulfilment of government contracts and grants, coordination and support of large and complex research programs, in-house programs of the Arctic Institute, and appraisal and development of new ideas for northern research in the social sciences and in the natural sciences.

The research-support activity is guided by the Research Committee, one of the major committees of the Institute. It has existed since 1946 but it has been known variously as the Research Fellowship Committee, the Research Committee, and the Grants-in-Aid Committee.

In addition a McGill-Arctic Institute Carnegie Program Committee existed from 1951 to 1956. This was chaired by F. Cyril James, Principal and Vice Chancellor of McGill University. Also from 1956 to 1960 there was a Banting Fund Committee of which A. E. Porsild was chairman.

Around 80 to 100 applications for grants-in-aid in both the social and the physical sciences are now received each year, and normally somewhere between 20 and 50 of these, from among those that have received the highest endorsement of the Research Committee, are selected for support in whole or in part. In 1947 only 4 grants-in-aid were awarded; in 1965 there were 70 research grants and the cumulative total for the nineteen years was 577. The greatest increase was between 1964 and 1965 when the number more than doubled.

The grants have ranged from token amounts of a hundred dollars

or less to as much as $15,000. In an appraisal made in 1963, 200 former grantees reported that 195 still were engaged in polar research in one way or another. This is a record of which the Institute is proud indeed and the continuation of which it is determined to insure.

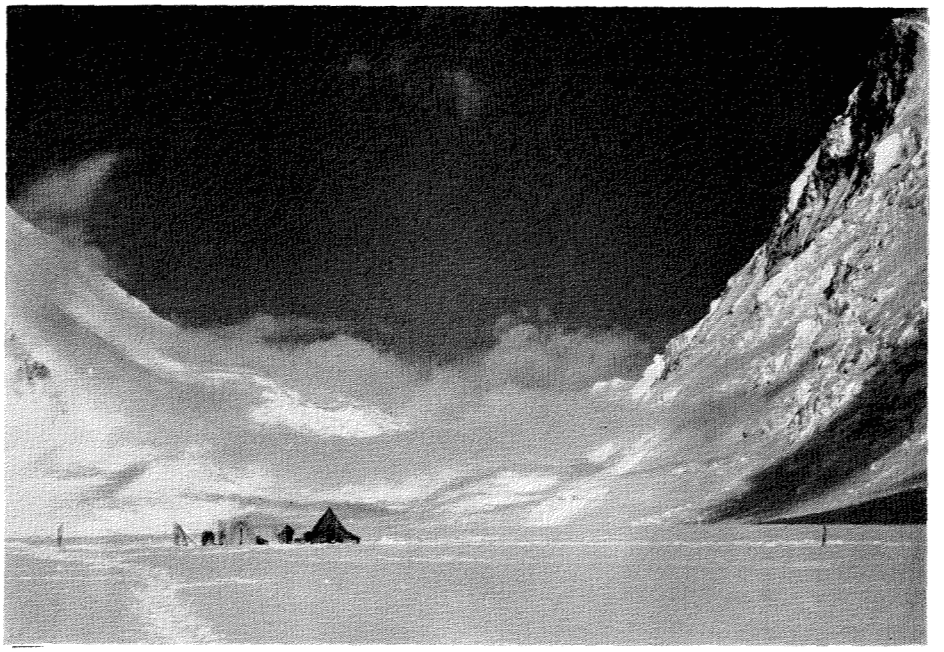
The performance of research under government grants and contracts is one of the most important activities of the Institute. It is quite separate from the grants-in-aid program. Two examples will illustrate the type of activity. One is an observational program of aurora and airglow phenomena in the Antarctic that has been supported through a series of grants by the National Science Foundation. The other is a seismic research project undertaken in cooperation with the Dominion Observatory in Ottawa and financed by the Office of Scientific Research of the U.S. Air Force. Each of the programs is guided by a committee of recognized experts appointed by the Institute.

Occasionally the Institute has assisted in organizing large integrated research programs, acting as a kind of catalyst in helping to bring together contributors from groups in Canada and the United States in support of worthwhile programs. An example is a program in geophysics of the Arctic Ocean that has been pursued by the Geophysical and Polar Research Center of the University of Wisconsin. Another is the research program that was carried out on Arlis II, a floating station in the Arctic Ocean that was abandoned in 1965 when it was drifting rapidly southward through the Denmark Strait between Greenland and Iceland.

For the past several years the Institute has been supporting two major in-house research programs that have been of real significance in the course of arctic research. The first is the Devon Island program, which has involved principally the effects of a local island ice cap on the surrounding terrestrial and marine environment. The initial phase of that program is now largely completed, and the Institute is moving rapidly to the planning and organization of later phases that can be carried out from the research facility near Cape Sparbo on Devon Island now available for further use.

The other is the Icefield Ranges Research Project, generally known as IRRP, that is being carried on in the Mount St. Elias region of southwestern Yukon Territory. That program has been sponsored jointly by the Arctic Institute and the American Geographical Society.

As a basis for long-range thinking for future research activity of the Arctic Institute and others, and for the appraisal of what trends polar research should take, the Institute has established a pattern of consideration and advice that centres in the Research Committee and in the Development Committee. One of the responsibilities of the Research Committee is to receive ideas for polar research from all possible sources, to appraise those ideas, and to recommend for financing and implementing those ideas that are worth undertaking. The Development Committee considers the whole scope of Institute work, places the over-all activity in the perspective of need and priority, and in relation to research in general, and recommends to the Institute the scale, scope, content, and priority of Institute activities



Cold Regions Research and Engineering Laboratory (CRREL). Base Camp at 10,500 ft. elevation in King Col Trench at the head of the Ogilvie Glacier on Mount Logan (left), used for high altitude snow studies in conjunction with hydrological traverse by IRRP in June 1965. King Peak is on the right. Camp established and evacuated with the assistance of IRRP Helio Courier aircraft. (Photograph by Charles M. Keeler, CRREL.)

in a long-range perspective. The services of other committees, such as the Universities Committee, are enlisted as occasion warrants.

An Educational Institution

The Institute considers itself clearly an educational institution although it does not confer degrees. Its role in education is in line with its objectives as set forth in its charter. As time has gone on it has become increasingly evident that more emphasis is needed on educational activities, particularly in the social sciences. Of course the library, the publications, lectures, and grants-in-aid all promote education. But here is meant the more specific educational activities that now loom large in the Institute's program. A few of these activities are briefly mentioned to illustrate the sort of thing with which the Institute is involved in this important field.

In 1962-63 the Institute organized and gave a ten-week course in northern geography as one of the regular courses that year in the McGill University Extension Course Program. About fifty persons in many fields and with many interests registered and the average attendance for the ten weeks was forty-five. The course was judged to be a notable success and would have been repeated since then if time and funds for organization and operation had been available.

As has been mentioned earlier, the Institute for several years has been assisting the McGill University Summer School of Geography by providing numerous speakers and seminar leaders from among Institute Governors, staff members, and Fellows and, in 1965, by supporting a few teachers from small colleges and universities in attending the school.

It has also been mentioned that through an NSF grant the Institute enabled six teachers in a variety of disciplines from smaller U. S. colleges and universities to participate in the Icefield Ranges Research Project. The program is believed to have been very successful. It was possible in addition to support one graduate and two undergraduates from Canadian universities in IRRP through a grant from the Department of Northern Affairs and National Resources. Both of the above-mentioned efforts had their roots in a small program of scholarships to a few participants in IRRP over the past several years. Those scholarships were jointly financed by the Institute and by the universities involved.

In the winter of 1965-66 the Institute offered a month-long course on the properties of snow and ice to a small group of students from Colgate University. The course was held in the field at Colgate's camp on Saranac Lake, New York. The final week was spent in the Institute's headquarters and library in Montreal.

Also in the winter of 1965-66 a course on arctic geography was given in twelve two-hour sessions in the Institute's offices in Washington. Participants came from federal organizations involved in northern affairs and from colleges and universities in the Washington area.

For a number of years the Arctic Institute, in part with its own funds and in part with the support of Resources for the Future, has provided substantially for the work of Dr. George W. Rogers in the field of economic and development aspects of Alaska. Rogers is a professor of the University of Alaska. Already two major books, published by The Johns Hopkins University Press for Resources for the Future, have resulted from this project.

A Variety of Other Interests

The Institute embraces a wide variety of other interests and activities. A few of these are mentioned below as examples, but it is not practicable to attempt to list all of them in a short article.

Encouragement of the recognition of Canada's northern regions as a part of the 1967 Canadian Centenary celebrations has been an increasing Institute interest. This is being done partly through contacts with the private Canadian Centenary Council and the federal Centennial Commission. Similarly the Institute has participated in a number of ways in the polar-theme development as part of the Canadian World Exposition, 1967.

The Arctic Institute attempts to encourage and to maintain close relationships with organizations concerned with polar affairs in other countries. Examples are the Scott Polar Research Institute in Cambridge; the Norsk Polarinstitutt in Norway; the Arktisk Institut in Denmark; and the Arctic and Antarctic Research Institute of Leningrad. In addition there are many

ties with organizations interested in polar research within Canada and the United States. Most of these are at universities. Examples are the Institute of Polar Studies at The Ohio State University, the Geophysical and Polar Research Center of the University of Wisconsin, the Boreal Institute at the University of Alberta, the Centre d'Etudes Nordiques at Laval University, and the Institute of Northern Studies at the University of Saskatchewan.

The Arctic Institute also attempts to forward its objectives by arranging lectures from time to time. Occasional lectures on polar matters are given to Associates in the Montreal area, usually in the Institute's headquarters. An annual lecture evening has become a tradition in Washington. Institute staff and Governors occasionally give lectures under Institute auspices at various places and to various groups throughout Canada and the United States. In the past few years the Institute has planned, organized, and managed several symposia under various auspices. One of these on drifting stations in the Arctic Ocean is planned for the Washington area in the spring of 1966. It will be supported by the U.S. Office of Naval Research.

Under Consideration Now

In addition to the activities and interests such as those already mentioned, the Institute currently is in various stages of planning and implementing programs or of modifying older ones in the light of present situations. For example, thought is being given to the modification and modernization of the Associates' program. The Institute believes there should be many more Associates to reflect the increasing interest in polar affairs, especially perhaps in regard to social and political aspects.

A comprehensive northern transportation study, focusing on, but not limited to current and future transportation in northern Canada, is nearly ready for initiation. Funding sources have been identified, a carefully selected advisory group has been designated and already is at work, and a project leader is being considered.

The relations of the Institute with comparable organizations in other countries need to be strengthened. A good deal of effort is planned in that area in the near future. Educational activities of the Institute already have been greatly expanded and have become much more diverse. That trend is expected to continue and clearly reflects the need to develop more young talent for northern research. Closely related to the developing educational interests of the Institute is a developing effort to greatly strengthen the liaison between the universities and the Institute. In that way it is confidently hoped that the Institute can perform a real function of informal coordination in the polar research efforts of the universities, of pooling and focusing the best thoughts of the various universities on desirable trends in polar research, and of appraising the research efforts that are going on in the polar regions.

This chapter has attempted to summarize the present activities of the Arctic Institute; the next chapter will deal with its future prospects.