



## HISTORY OF UNITED STATES ANTARCTIC PROGRAMS (1948-1971):

### A DISCUSSION OF THE PROBLEM

*Henry M. Dater has led a distinguished career as an historian, notably as the U.S. Navy's eyewitness historian for Antarctica. With National Science Foundation support he has been working at the Center for Polar Archives, of the National Archives, in the early stages of a comprehensive history of recent U.S. experience in the Antarctic. With Dr. Dater's scheduled retirement this year, this project may come to an end, but the need for and the task of writing the history of the U.S. Antarctic effort continue. A few years ago, Dr. Dater summarized in a privately circulated essay some problems that the Antarctic historian must face, and he called for comment. This essay is now published for the first time, below. Readers are invited to submit their reactions to this Bulletin or directly to Herman R. Friis, director, Center for Polar Archives, National Archives, Washington, D.C. 20408.*

- THE EDITORS

By Henry M. Dater

Antarctic expeditions of the nineteenth and the first half of the twentieth centuries came to the area by ship, remained for a limited time — one to three operating seasons — and then returned to their land of origin. Each had a beginning, a period of activity, and an end. Each constituted an entity that could be studied independently and wrapped in a neat little package. The historian once he had tied his packages could arrange them in chronological order, and this was the organization most frequently adopted. Handled with skill, it produced works of outstanding usefulness as, for example, H. R. Mill, *The Siege of the South Pole*, 1905, and W. Sullivan, *Quest for a Continent*, 1957.

The method has inherent faults. The setting down of one expedition after another tends to obscure the relationships between them and to isolate Antarctica from developments in the world at large. The reader is not informed of the political, economic, technological, and scientific factors that made expeditions desirable and practicable, defined their objectives, and guided their organization. The result is to produce what are better described as annals than histories. Even Mill, with his commanding breadth of knowledge, does not escape entirely this difficulty, and Sullivan, a perceptive journalist, wrote a reportage in depth rather than history in any profound sense.

In the half century that elapsed between the writing of Mill and Sullivan, a great many important expeditions took place. With the growing number of packages, the historian had either to reduce the size of each, which made the resulting publication increasingly annalistic, or he had to adopt criteria which emphasized certain expeditions at the expense of others even to the extent of omitting some. Sullivan chose to concentrate on the twentieth century and the activities of the United States and its nationals to the detriment of earlier expeditions by other countries. Two outstanding recent books elected other criteria while retaining the episodic approach. L. B. Quartermain, *South to the Pole*, 1967, confined his attention to a geographic area, the Ross Sea Sector. K. J. Bertrand, *Americans in the Antarctic*, 1971, is just what the title implies, an account of United States activities and accomplishments beginning with the sealers and ending with "Operation Windmill."

A notable exception to the annalistic approach is L. P. Kirwan, *A History of Polar Exploration*, 1960. Kirwan's interests ran to the "evolution of polar exploration in its historical and social context," and to the "motives and impulses—economic, strategic, personal, and political—which have given rise to polar exploration." His book, however, covers the story of both polar regions in a brief 354 pages so that what he has written is more a stimulating and perceptive essay than a detailed history. He also shares the belief of many historians that the passage of time is necessary to establish true historical perspective and skips over the period since 1917 in a scant 34 pages.

The frame of Antarctic reference has changed over the last three decades. Although the Argentines have operated a meteorological observatory on Laurie Island in the South Orkneys since 1905, such permanent occupancy remained an isolated instance until 1944 when the British set up bases on Weincke and Deception Islands. They started a trend that within a decade saw the Argentines, Chileans, and Australians also establishing programs of continuing investigation. For the International Geophysical Year (1957-58), eight other nations joined them. Of the 12 participants in the IGY, 10 are still active in the area. Permanent occupancy has become the rule rather than the exception.

With the decline of geographical discovery as a primary motivating force, the desire to conduct detailed studies of Antarctic phenomena increased, and this implied continuing scientific programs. Although the first permanent stations were established for political reasons, they proved ideal for the making of continuous observations in such fields as meteorology, seismology, and upper-atmosphere physics. Those located on the seacoast could be turned into logistics bases for the support of inland stations and summer field parties. Combined with improved air and surface transport, they permitted researchers to penetrate the most remote areas. These activities required scientific and logistics equipment of growing complexity and large numbers of highly trained individuals to operate and maintain it. Costs inevitably spiraled upward to heights that only governments could afford. The *ad hoc* committees which had mounted and managed the occasional expeditions of the past gave way to official administrative bodies. Problems previously unknown, or safely ignored, began to appear. Political frictions arising from territorial claims and other matters had to be resolved; to insure the best results, the scientific programs of 10 or more nations should be coordinated; cooperative projects, combining the talents and resources of two or more parties, required organization. Neat little packages no longer seemed adequate.

The historian must trace these developments in all their ramifications, indicate their interrelationships, and assess their relative significance in contributing to the general Advance of recent decades. In so doing, he lacks the perspective that only time can bestow, and he must seek some other bases for the exercise of judgment. Perhaps, at this point, the historian should consult the recipients of his work. For one employed by the government, the type of study that will be useful to the organization or program with which he is associated should be a prime consideration. In the Antarctic program there are many diverse elements. True, they are for the most part either scientific or logistical but each of these general categories subdivides into many groups. For instance, the historical needs of scientific managers are quite as different from those of field

scientists, as are those of logistics planners from pilots and mess cooks, and there are always the politicians who are a species all to themselves.

The question is basically one of organization. Even limiting coverage of United States Antarctic programs since 1948 leaves the historian with a great mass of material to read and digest. From thousands of disparate pieces, he must select those which are significant to his purpose and organize them into a coherent whole. For this reason he needs criteria and these in turn will be heavily influenced by the needs of those for whom he writes. Different approaches are discussed in the following pages. They are not mutually exclusive but set forth themes to bring order out of the chaos of wills, interests, and events. An approach not considered below, because it seems too restrictive and also because it appears to be in the realm of political science rather than history, is to treat the Antarctic as a political laboratory. The success of the IGY and the general desire to extend its spirit into the future led directly to the Antarctic Treaty which to a large extent formalized relationships that already existed informally. A political history would have to include a discussion of cooperative scientific programs, but primarily as they affected the political question. The focus would shift from Antarctica to the international stage (See R. D. Hayton, "The Antarctic Settlement of 1959," *American Journal of International Law*, vol. 54, no. 2, pp. 343-371). The problem then is to select an approach which will provide a basis for selection and organization and will not prove so restrictive as to eliminate large segments of important activities.

The Military Departments divide their historical programs into two parts: administrative and operational. The first includes not only the ordinary stuff of administration but also policy formation and implementation, interagency relations, and international affairs. The *Pentagon Papers* may be considered in this category, and the format of a narrative followed by a voluminous appendage of documents is a common one. More germane to the Antarctic problem is my *Operation Highjump II*, 1970, and an article in the *Antarctic Journal*, vol. I, no. 1, pp. 21-32, "Organizational Developments in the United States Antarctic Program, 1954-1965." Operational history covers the whole spectrum of what occurred in the field. For this discussion Bertrand's *Americans in the Antarctic* may be cited as a relevant example. Except for journalistic accounts, little serious work of this nature has been done for the contemporary period other than L. B. Quartermain's *New Zealand and the Antarctic*, 1971, in which the author does not seem to have completely solved the organizational problem. At least, he concludes with two chapters of miscellany that he was unable to fit into his narrative.

Except on a very low level administrative and operational history cannot be completely separated. The decision to be made is one of emphasis. Administrative historians approach their subject from the viewpoint of management, i.e. the Antarctic as seen from Washington. They are more interested in the machinery through which things are done than in the actual doing. Many operational factors appear as problems to be solved. Assessments are made on an overall program basis which may easily obscure the significance of individual events and accomplishments. These criticisms should not hide their usefulness for those involved in the same or similar programs and for all interested in the processes of government.

Operational histories, on the other hand, set forth accomplishments and how and by whom they were brought about.

Their ultimate reduction would be to record the activities of each individual concerned, and this can be done for small units operating over a short length of time as may be seen in P. A. Siple's *90° South*, 1959, and A. Lansing's *Endurance*, 1959. This method is obviously impracticable in a history dealing with programs and events covering periods of several years and involving hundreds or even thousands of individuals. Because of the number of persons and the many disparate events that go into an operation, it is easy to lose the totality in a plethora of detail. Many a military narrative has fallen into this morass as endless files of men march and countermarch for purposes not revealed to the reader. Operational history requires the application of stern criteria and sound judgment. Both research and writing are more difficult than for administrative history.

No matter what approach is adopted, the organization of the United States Antarctic program from 1955 to 1971 into two independent but coordinate elements presents the historian with special problems. The scientific program was funded by the National Science Foundation and managed first by a committee of the National Academy of Sciences and, after 1958, by the Science Foundation itself. Logistic support activities were the responsibility of the Navy as the executive agent of the Secretary of Defense. This dichotomy ran through the entire program, from the highest levels in Washington to the smallest station in Antarctica. The situation was further complicated by the paradox that, although science was the principal reason for being in the Antarctic, logistic support cost more in money, manpower, and effort expended. If the criteria are based on this paradox, research and writing will emphasize support activities and direct the readers attention away from scientific investigation. Overemphasis on science programs, however, would obscure the accomplishments of several thousand people who labored to make them possible. A balance between these two spheres of activity must be found.

In treating the logistics side of the dilemma, one criterion is how did the particular action or activity contribute to the furtherance of the science program. This approach is in line with Rear Admiral George Dufek's remark that, if the scientists would tell him where they wanted to go, he would see that they got there. To carry out this promise often required considerable ingenuity and expense. An illustration from the history of South Pole Station provides a good example. No one seriously thought that building material and supplies could be delivered to this remote spot by other means than aircraft. In 1955, however, no cargo planes of sufficient capacity had been mounted on skis, and wheeled aircraft could not operate from the ice shelf at Little America. As a result, a support base was built on Ross Island where the sea ice of McMurdo Sound was sufficiently thick to sustain wheeled take-off and landing. Thus, a station that was not needed scientifically came into being solely for the support of the South Pole. Wheeled aircraft could not land on the polar plateau any more than they could on an ice shelf so their contents would have to be parachuted to the surface. Because the Navy had neither the equipment nor experience to use this technique, it asked for and obtained the assistance of the Air Force. Although well established as a means of cargo delivery, airdrop had its drawbacks when applied in Antarctica. Damage to material occurred when replacements were hard to come by, parachute releases did not always work, and items dragged by the polar wind disappeared over the horizon. Even when all functioned properly, recovering and stowing cargo placed a

heavy burden on small station complements. When ski-equipped C-130 Hercules became available, the Navy hastened to purchase four of them which it put into operation during the 1960-1961 season. At first employed to transport dry cargo, they took over fuel delivery when large internal fuel tanks were developed to fit into the cargo bay. The Hercules could also haul passengers so that the number of summer support personnel could be greatly increased over what had been possible when the principal passenger aircraft was the ski-equipped Dakota.

This story has been introduced not to follow all its ramifications, but rather to see if it suggests some method to approach the logistics portion of the narrative. If the Hercules with skis had been available in 1955, McMurdo Station might not have been built. Because they were not, the only alternative was airdrop from wheeled aircraft which in turn required facilities that could not be provided on an ice shelf. McMurdo Station was added to the program because of technological imperatives. Without belaboring the point, the opening of Antarctica, the ability to live and work there, the capacity to move about the continent have depended upon the adaptation of an expanding world technology to the unique problems of the South Polar region. Emphasis on this aspect of logistic support draws the reader's attention to the relationship between Antarctic development and one of the main currents of modern culture. Its importance is such that it should be used as a second criterion in organizing the information on support activities. (Kirwan in his *History of the Polar Regions* leans heavily on this approach; a suggestive essay on this topic may be found in the *Antarctic Journal*, vol. V, no. 4, pp. 145-149).

A characteristic of the United States Antarctic Research Program has been its fragmentation, being broken down into a large number of small, specialized projects spread over a number of scientific disciplines. To treat them all in chronological sequence will result in little more than a listing of seemingly unrelated investigations that will be of no value to the general reader and not very much to the specialist. Besides, what the latter wants to know has already been recorded in professional journals and other technical publications. What is needed in a general history is some criteria for relating these manifold and disparate pieces of research to the intellectual, technological, and economic evolution of which they are a part. It is here that the lack of perspective becomes most acute. How long it may take for discoveries in basic science to be translated into technological applications has been amply documented. (Illinois Institute of Technology Research Institute, *Technology in Retrospect and Events in Science*, 1968.) The interrelationship between science on the one hand and philosophy and religion on the other has been investigated by the English scholar, Sir William Dampier. (*A History of Science in its Relations with Philosophy and Religion*, 3d ed., 1946.) The revolutionary effect on all realms of thought of the evolutionary theories propounded by Darwin and Wallace in 1859 is well known, but so towering an event did not spring into life at one bound like Athena from the head of Zeus. As Dampier wrote, "Indeed, it required two thousand years of time and the labours of many quiet and unphilosophic physiologists and naturalists to collect enough observational and experimental evidence to make the idea of evolution worth the consideration of men of science." Today, in Antarctica, such quiet investigators are busy accumulating the evidence upon which new hypotheses may be erected, but

only a specialist in a particular discipline could hope to assess the significance of most of the highly specialized projects and his conclusions would be tentative. The person who can do it over the whole range of studies probably does not exist, certainly not among historians.

There does appear, however, to be ways of presenting interesting material about science programs in Antarctica without becoming lost in detail. The whole concept of the IGY as it developed from a proposal for a third polar year into a program for global geophysical observations underlines the facts that Antarctica cannot be isolated from the rest of the world and that international collaboration is a fruitful way to tackle large scientific problems. The institutionalization of the experience as represented by the Scientific Committee on Antarctic Research and the extension of the collaborative approach into the fields of geology, biology, and mapping deserve attention as does the effect of this same cooperation on the political realm leading to the Antarctic Treaty of 1959 and the subsequent relations between SCAR and the Treaty Governments. (See, "The Antarctic Treaty in Action, 1961-1971," *Antarctic Journal*, vol. VI, no. 3.) The United States has played an important part in all these developments beginning in 1948 with its proposal for international discussions of the status of Antarctica and the publication in 1949 by the National Academy of Sciences of *Antarctic Research: Elements of a Coordinated Program*.

The Academy itself has had a distinguished role in the Antarctic through its management of scientific activities during IGY, its membership in SCAR, and its organization and transmission of the objective of the scientific community to the Government. (For the last, see *Science in Antarctica*, 2 vols., 1961, and *Polar Research: A Survey*, 1970.) In this connection a shift occurred in the general thrust of the science program. During the IGY and for several years thereafter the principal emphasis was descriptive. Antarctica was studied with the objective of discovering and cataloguing what was there. Gradually, however, research has been conducted in greater detail and greater depth. From the labors of quiet men new syntheses have begun to appear. The growing confirmation of the Gondwanaland hypothesis may be cited as an example, and here, as so often, information culled from the Antarctic had to be combined with that gathered elsewhere to establish a viable theory. Perhaps, other instances of this sort may be uncovered by a careful review of the record.

Many of the suggestions in the above paragraphs deal with matters of essentially an administrative nature. This approach can be used to include all aspects of United States Antarctic programs since 1948. The coordination of the separately managed scientific and support activities was an administrative problem which permeated all levels of command structure. The political aspects of the program may be included and, among other things, account for the creation and composition of the Antarctic Policy Group. It will also allow for the part played by non-governmental organizations in Antarctic programs. Significant developments in scientific and support activities may be incorporated in the narrative. Their successes and failures, after all, provide the yardstick by which to measure the effectiveness of the administrative system. Finally, there is the practical reason that the administrative record is more readily at hand than that for any other approach. In brief, an administrative history offers the best chance of obtaining a useful and interesting study of reasonable length in a reasonable time.