velopment Command and the establishment of the post of Deputy Chief of Staff for Development. In the summer of 1950 Ridenour became chief scientist of the Air Force in order to help implement the recommendations of this report. During his tenure in that position he sponsored the establishment of the Massachusetts Institute of Technology's Lincoln Laboratory, which developed the SAGE air defense system and the Dew Line.

He never returned to the University of Illinois because his younger daughter became seriously ill. Instead, he took a position as vice president of International Telemeter Corporation in Los Angeles. While with that company he endeavored to develop pay-as-you-go television devices and computer components. He is largely responsible for the formation of Telemeter-Magnetics.

In 1955 he joined the Lockheed Aircraft Corporation. There he was much concerned with the gathering of personnel for the research division of the Missile Systems Division. He rose through a series of positions and responsibilities; just two months before his death he was named vice president of the company and general manager of the new Electronics and Avionics Division.

Ridenour was awarded the President's Medal for Merit and the Bronze Star for his services during the war. He was awarded, posthumously, the U.S. Air Force's highest peacetime decoration, the Exceptional Civilian Service Medal.

He is survived by his widow, the former Gretchen Hinkley Kramer, and his two daughters, Eleanor and Nancy, as well as his parents, Louis N. and Clare Ridenour.

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Science in the News

Next Few Years Said To Promise Solution of Antarctic Research Program's Recruiting Problems

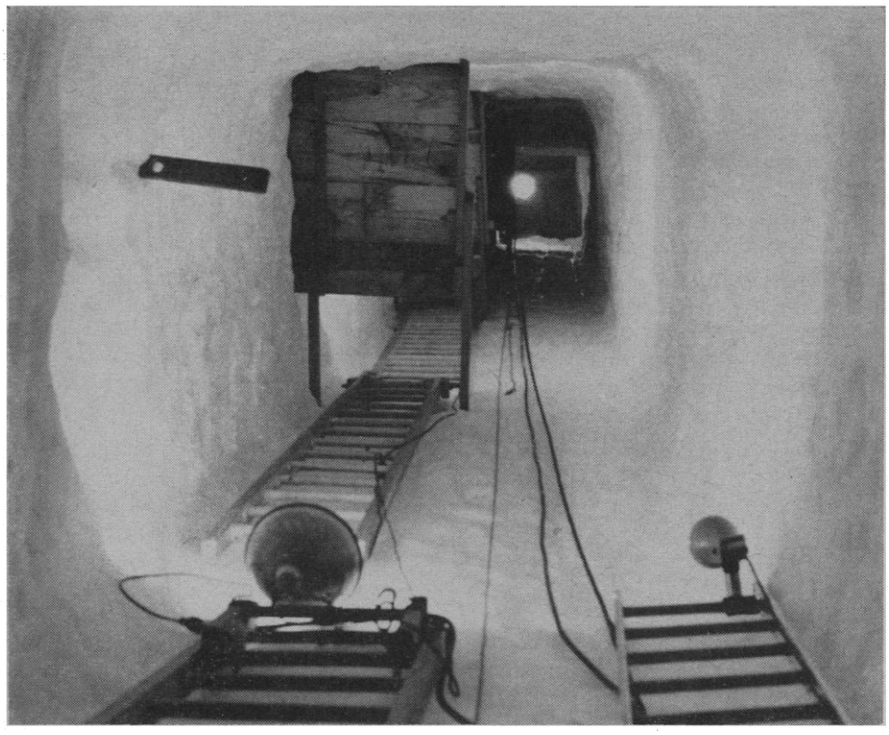
Recruiting problems, which are adversely affecting this country's antarctic research program, will probably be solved within the next few years, according to T. O. Jones, the National Science Foundation official who directs the program. Jones, who recently returned from a trip to the U.S. stations in Antarctica, believes that policies now being instituted will attract enough scientists to antarctic research to leave NSF, which supports such work, only the problem of selecting from among them those whose projects will contribute to a balanced program. The current program, which is now under way with the onset of the antarctic summer, suffers, according to observers, from a lack of balance between scientists and technicians. This situation, in which the technicians heavily outnumber the scientists, was suited to the activities of the International Geophysical Year, but the relative numbers now must be reversed, Jones feels, if a long-term antarctic program is to be carried out and is to produce significant results. The foundation hopes to attract people to the Antarctic who will be able to pursue individual research projects in addition to making the routine readings and measurements for programs that are hold-overs from the International Geophysical Year.

Three developments, among others, will work toward a solution of the problem, Jones feels. The first is a growing awareness on the part of American scientists of the possibilities for research offered by the opening up of Antarctica. The second is the increasing availability of adequate scientific facilities and transportation in the Antarctic. The third is the possibility that special institutes can be established in the United States for workers in the academic field for whom research in Antarctica involves absence from universities and colleges during the academic year.

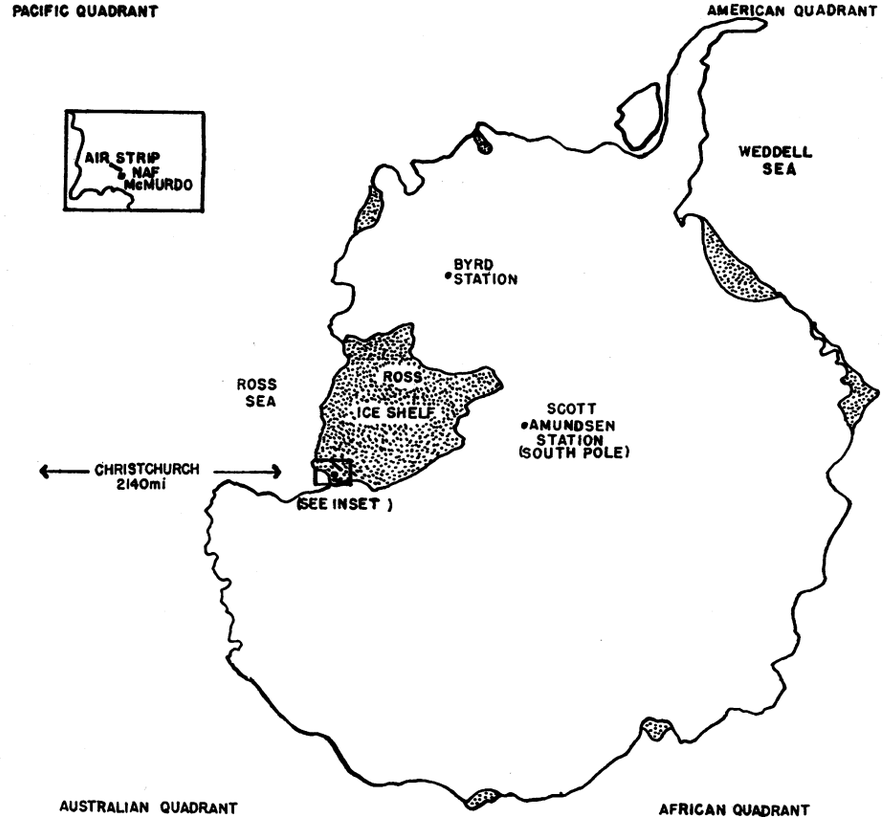
Efforts by Jones and his staff to acquaint American scientists, particularly those in universities, with research possibilities in Antarctica are beginning to show results, according to foundation officials. More numerous and more varied proposals are being received at NSF headquarters in Washington. Scientists who have returned to their universities from work on the Antarctic continent during the IGY or post-IGY period are discussing this work with their colleagues and graduate students, with the result that men with the training the program needs are becoming interested. Jones himself has taken a number of university scientists to the continent to see the work that is being done and to visualize what can be done. This interest, Jones feels, is a seed which in time will produce projects that will fill out the antarctic research program—a program that is no longer just one aspect of a world-wide geophysical program but is slowly achieving a new status as a complete and balanced undertaking in its own right.

The new and well-equipped biological laboratory at the McMurdo Sound Naval Air Facility is one of the evidences that the needed equipment for scientific work is now becoming available on the Antarctic continent. It provides facilities such as are found in the laboratory of a small college, and plans are under way to enlarge it. New living quarters will soon be built for scientific personnel at this base. At the more isolated stations, such as the Byrd and the Scott-Amundson stations at the South Pole, electronic and photographic equipment is available for studies of the ionosphere and of aurora and for work in the fields of geomagnetism, seismology, meteorology, and other disciplines. Plans are under way to transform the antarctic bases which were built for temporary use during the IGY into permanent stations.

January 1960 will mark the beginning of a new program in transportation that promises to be a great aid to research in the Antarctic. Ski-equipped



View up the shaft of a 100-foot snow mine dug near the Wilkes Station at 66° 15′ S, 110° 3′ E, in the Australian quadrant in Antarctica. Surfaces revealed in this way can be read much as the rings on a tree are read and provide valuable data on past weather conditions and on types and accumulations of snow. [Official U.S. Navy photo]



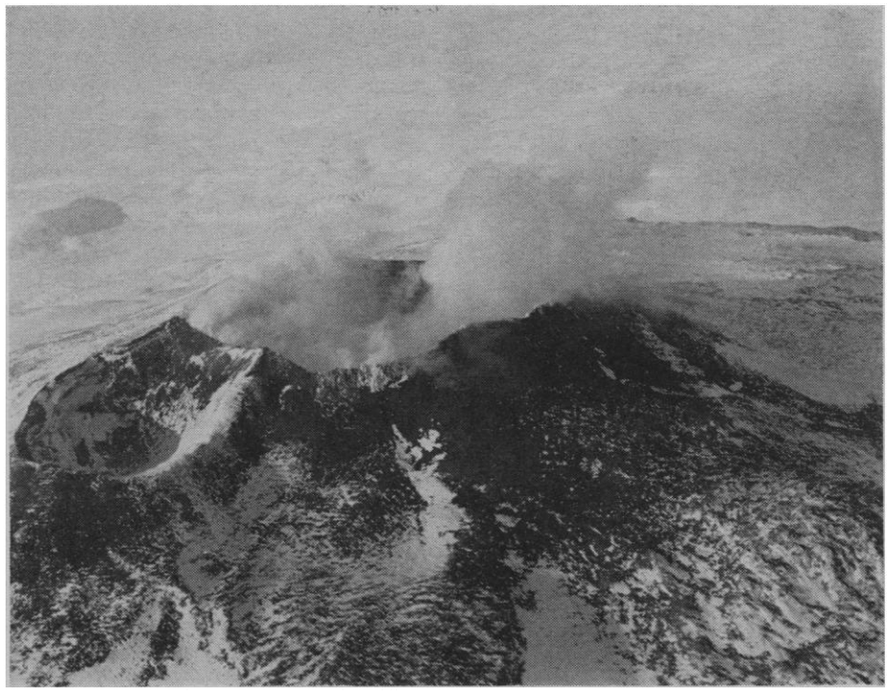
Location of some of the United States bases used in the antarctic research program. The off-continent support base is in Christchurch, New Zealand, 2140 miles from the Naval Air Facility, located on Ross Island at the edge of the Ross Ice Shelf. A new airstrip (shown in inset) is under construction on the permanent ice of the shelf.

Air Force Hercules transports will begin preliminary resupply work, operating from a landing strip now being prepared on the permanent ice of the Ross Ice Shelf. Use of these planes, with their great range and great load capacities, is expected to make possible more regular supply operations and better communication with the inland stations. Scientific personnel will be able to reach the stations just in time to begin their work. Under present conditions transportation to these bases is so irregular that, for example, men planning studies of aurora find themselves at inland stations 3 months before the antarctic night and the aurora begin. Others, planning to study the nesting behavior of the penguins, arrive at the rookeries after the nesting has begun. Although weather always has been a factor in such misfortunes and always will be, regardless of the type of aircraft used, the new transports promise to cut down on waste time and effort.

Polar Institutes

Spring in Antarctica is fall in the United States. A university-affiliated scientist who wants to work on the Antarctic continent during the 6 months of summer light must leave for the area at just the time that his university colleagues are resuming their classes. His research project may require two consecutive antarctic summers for completion—two full academic years. Many university scientists are reluctant to give up this much time for work on "the ice."

In an interview in Christchurch, New Zealand, the staging area for the U.S. program in Antarctica, Jones explained his views on a possible solution to this problem. He believes that special academic institutions can be set up in the United States for people who spend a number of years in antarctic research. A number of universities, he feels, are in a position to set up polar research and educational centers. Such centers would have five major functions. They would have academic schedules that conform to the antarctic seasons—that is, the main sessions would be held during the U.S. summer. They would attract young people who, both because of concern for science and a desire to travel, are interested in working in Antarctica. They would be active in the development of equipment and materials for work under high-latitude conditions. They would promote cooperation among the various disciplines



Mount Erebus, believed to be the only active volcano on the Antarctic continent, is located near the U.S. Naval Air Facility on McMurdo Sound, from which U.S. scientific bases in the interior of the continent are supported. [Official U.S. Navy photo]

concerned with research in these latitudes. And they would take on the function of data reduction for information obtained through antarctic research.

Although such centers may in time provide the answer for the academic scientist, temporary solutions are needed. Recent visitors to Antarctica report that such solutions are being developed. At the new biological laboratory at McMurdo Sound a series of seminars, conducted by the scientists who have gained experience in antarctic research, has been under way for some time. Field workers who visit the laboratory after completing a traverse or after a year's work at one of the inland stations give lectures on their work. This program gives promise, according to Jones, of developing further in the coming years. With the increase in the number of university people participating in the antarctic program, the academic approach is more and more evident. At the airlines terminal in Christchurch one can occasionally see an investigator conducting an informal seminar with his graduate students before their plane departs for Antarctica. Jones feels that an investigator and three or four graduate students constitute the ideal unit for antarctic research. Such a group could divide its time between field work on the continent during the antarctic summers and formal academic work in the United States during the remainder of the year.

The interest expressed by scientists now working in the Antarctic seems to promise that the "laboratory continent," as Jones describes it, will become increasingly attractive as an area for scientific research. Certainly the expansion of facilities and the recent conclusion of the Antarctic treaty, which reserves the continent for peaceful purposes, particularly scientific work, point in this direction.

Suspension of Test Ban Talks in Geneva Leaves Many Problems Unresolved

Problems that were revealed last month during sessions of the scientific committee at the atomic test ban talks in Geneva threaten to increase the difficulties of the group discussing political questions, which will resume its work on 12 January. The committee of scientists from the United States, Britain, and Russia, which was studying the technical aspects of a control system to police the ban, submitted a report which indicates that no agreement has been reached on the major issue of what criteria should be used to determine whether tremors recorded by control posts are caused by natural earthquakes or underground nuclear explosions. Agreement was reported, however, on improvements in instrumentation to be used at the posts.

The main obstacles to agreement came in discussions of the latest United States data concerning the difficulty of distinguishing earthquakes from nuclear tests and the possibility that tests could be deliberately disguised to make their identification more difficult. These data, which had been submitted to the scientific committee last January, were not examined until November, because the Soviet Union refused to permit their joint consideration.

The slow progress of the talks has raised the question of what action the U.S. will take in regard to the test ban that was due to end on 31 December. Before the talks opened last November, John A. McCone, chairman of the Atomic Energy Commission, said that he believed that this country's voluntary suspension should be extended only on a week-to-week basis after its formal expiration. This extension, he said, should be made on the basis of the promise shown at the test ban talks. How this general principle will be applied now that the talks are temporarily ended is yet to be seen. The Soviet Union has said that it will continue its ban as long as the U.S. refrains from nuclear testing.

Hopes Were High

During the period of more than a month that the talks were under way, considerable hope was expressed by both the conferees and government officials that general agreement might be forthcoming. At his news conference 2 December, President Eisenhower said that he was more optimistic about the talks than he had been ". . . a few months back when it looked like they were going to be completely abandoned." After the suspension of talks, however, State Department spokesman Lincoln White said that the department was "greatly disappointed" that the meeting has concluded with only "minimal agreements." He also said that he "could not answer" as to whether the United States would refrain from nuclear testing until the resumption of the political talks on 12 January.

Observers here suggest that the United States may set a cut-off date for the talks to avoid an indefinite con-