

Summer in Antarctica

Like thousands of other Americans, more than 320 U.S. researchers will head south this winter — far south, to Antarctica. In the relative warmth of the Antarctic summer, the scientists plan to conduct about 90 studies during this 24th consecutive year of the U.S. Antarctic Research Program.

The largest study in the program, involving researchers from seven U.S. institutions and Norway, New Zealand and West Germany, will examine the interactions between ice shelves and the ice streams which feed them, and will use that information to piece together the history of the West Antarctic ice sheet. According to project coordinator George Denton of the University of Maine, the West Antarctic ice sheet is believed to have disintegrated during the last extremely warm interglacial period 120,000 years ago, significantly raising the global sea level. Though little is known about how the sheet collapsed, researchers have hypothesized the following scenario: A huge ice shelf, similar to the Ross Ice Shelf, lay in the sea at the edge of the West Antarctic ice sheet. Ice streams ("rivers" of ice that move several kilometers per year and, unlike glaciers, do not have bedrock walls) drained the western ice sheet into the ice shelf. Scientists believe that when the ice shelf, exposed to the warm interglacial sea, began melting, the ice streams were no longer held in check. They began to draw the ice sheet into the ocean, causing the sheet to break up and leave the huge ice-free areas now seen in the western part of the continent.

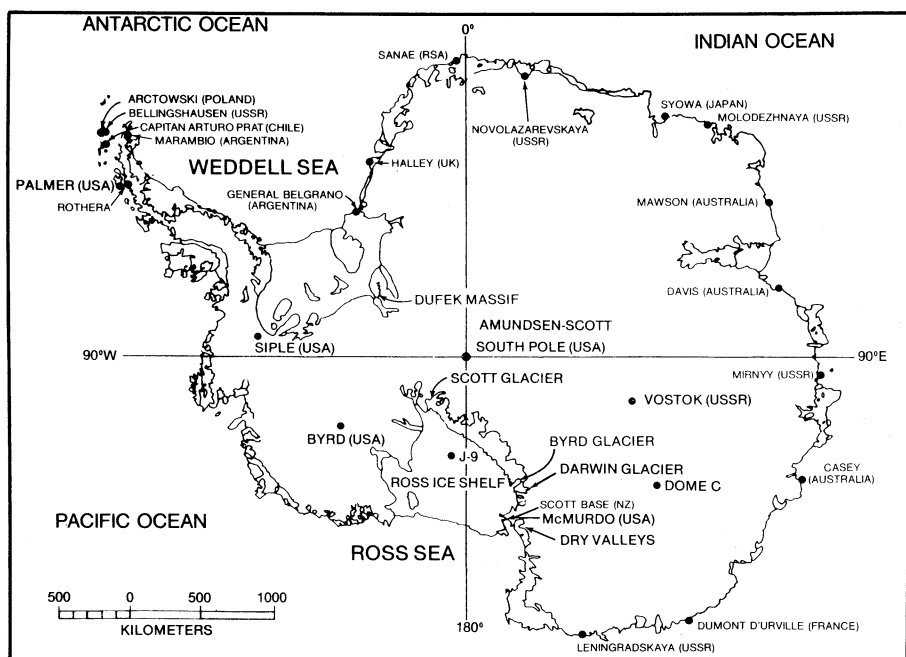
Fortunately for paleoclimatologists and

glaciologists, nature has provided a contemporary test of the hypothesis: An analogous relationship exists between the Ross Ice Shelf and the Darwin and Byrd glaciers that drain the East Antarctic ice sheet. Researchers have noted that the East Antarctic sheet may be deteriorating during the current interglacial period. If that is so, tracking what happens to the glaciers as they feed into the Ross Ice Shelf may explain how and why. Once scientists can understand that relationship, says Denton, they will know what to look for if the same situation did indeed exist in the west. Ultimately, Denton says, reconstructing the history of the ice sheets will provide valuable input for climate models of the glacial and interglacial periods.

Also included in the 1978-79 Antarctic research agenda are ongoing projects, such as population studies of the shrimp-like crustaceans called krill and the search for meteorites. Among new ventures are studies of mercury emission from the volcano Mount Erebus and of the behavior and habits of Weddell seals. From the high-altitude vantage point of the South Pole Station, scientists will study the sun's cosmic rays. Using new detectors, they will attempt to measure the motions on the sun's surface that result from oscillations in its interior. In the McMurdo area, another team plans to examine the distribution of man-made fluorocarbons and chlorocarbons by studying their accumulation in the snow, ice and atmosphere. Mark Leinmiller, an 18-year-old Boy Scout from Marietta, Ga., selected in national competition, will assist in a geological survey of the radioactivity of exposed rocks in the Darwin glacier. This season will also see the completion of the new Siple Station, which will replace the snow-crushed original built in 1969. □

National Climate Program enacted

The same day he enacted a plan for peace in the Middle East, President Jimmy Carter signed a humbler, but more scientifically significant, piece of paper establishing the National Climate Program. With an eye toward "anticipating the effects of climate fluctuations and changes in the United States and the rest of the world," the program will coordinate U.S. climate research and funding, stressing climate monitoring, the dissemination of data, the assessment of human effects on climate and the impacts of climate on agriculture and resource management. Gene Bierly, head of the climate dynamics program at the National Science Foundation, says the program will "fine tune" climate research, "coordinating, filling in the gaps, enhancing programs and starting new ones" and will add approximately \$50 million (in fiscal year 1979) to the estimated \$100 million currently allocated to U.S. climate research. The program will be administered by the National Oceanic and Atmospheric Administration and directed by Edward Epstein, the current acting deputy assistant administrator of research and development at NOAA. A management council composed of representatives from each agency involved in climate research and from the Offices of Management and Budget and Science and Technology Policy will provide federal involvement. An advisory council of nonfederal "users and producers of climatic data, information and services" will also review and make recommendations on the program's activities. The bill requires the program office to publish a five-year plan within one year. □



Major research sites in Antarctica: The 1978-79 summer research season begins.

Laetrile trial given green light

Laetrile has never shown any efficacy against cancer in animal tests, and case histories do not reveal whether or not Laetrile fights cancer. Nevertheless, the National Cancer Institute has decided to proceed with a clinical trial of Laetrile. The decision was announced last week by institute Director Arthur C. Upton.

Upton based his decision on a recommendation by the NCI's Decision Network Committee, a group of 29 NCI physicians and scientists that sets priorities for the institute's drug development program. The committee first analyzed the results of the NCI's retrospective analysis of 93 patient histories claiming benefits. Out of the 93 cases, only six patients could definitely be said to have been helped by Laetrile. Most of the cases contained insufficient data to say one way or the other. And a few cases showed no benefit (SN: 9/16/78,

p. 196). Such results would normally not be sufficient to suggest that a drug merits a clinical trial. However, because of widespread public use and interest in Laetrile, the committee decided that the NCI should still run a trial.

The NCI will soon submit its plans to the U.S. Food and Drug Administration (which has jurisdiction over all clinical drug studies in the United States). After the FDA gives the NCI the go ahead, the institute will conduct a study of 150 to 300 patients with several types of advanced cancers to see whether Laetrile can shrink their tumors. Only patients who conventional therapies have not helped will be asked to participate. That way the NCI can get around the moral issue of giving cancer patients an unproven drug when proven ones are available to them, and that way it can also test Laetrile scientifically — that is, without other kinds of treatments that could mask Laetrile's possible impact. The trial is estimated to take six months.

The NCI has not yet selected the institutions that will conduct the study. □

Biological effects of ions (again)

When a few scientists suggested, 20 years ago, that naturally occurring ions in the air might influence the lives of both plants and animals, their budding field of research was quickly hampered by premature exploitation on the one hand and overeager skepticism on the other. While some unscrupulous merchandisers were selling ion generators by claiming they could cure cancer and heart disease, some other researchers were claiming the original observations were just a side effect of electrical fields set up by the generators.

Perhaps one aspect of the argument can now be laid to rest: A carefully controlled experiment indicates that ions, not electric fields, apparently cause the previously noticed influence on life processes. The results have been published in the September *JOURNAL OF THE INTERNATIONAL SOCIETY OF BIOMETEOROLOGY* by Albert L. Krueger, Anne Strubbe, Michael Yost and Eddie Reed of the School of Public Health, University of California at Berkeley.

The researchers raised three groups of seedlings at Berkeley's air ion research laboratory. One group was raised in an ion-enriched atmosphere in the presence of a small electric field (small enough to not produce ions). Another group was raised in the same field, but in an ion-depleted atmosphere. A third group was raised without either ions or the field.

At the end of a six-day growth period, plants in the ion-enriched environment were an inch taller than either the control plants or those exposed only to the electric field. "This is the first time it has been possible to separate the effects of electric fields and air ions," Krueger concludes. □

Endangered Species Act is endangered

As the 95th Congress winds to a close, there is a frantic lobbying effort on behalf of endangered species whose protectors are temporarily out of a job. It's a bureaucratic nightmare that everybody prayed would not happen. But it did. On October 1, the Interior Department's Fish and Wildlife Service entered the 1979 fiscal year without money. Although the Endangered Species Act and all its provisions remain in effect, there are no people to enforce it, nor to issue import or export permits to businesses that trade in products involving endangered species, nor to consult about how to protect a species' habitat should a federal project threaten to harm it. Summing it all up, Keith Schreiner, associate director of the Interior's Fish and Wildlife Service said, "We are technically and actually out of business."

How did it happen? One might say it's the snail darter's fault. In June, the Supreme Court ruled that the nearly completed \$120 million Tellico Dam must die so that the snail darter—a now controversial but nondescript three-inch perch—might live (*SN*: 7/29/78, p. 68). Members of Congress whose powers have built over the years from their ability to bring revenue-heavy public works projects home to their constituents, now fear that obscure plants and animals might prevent these projects from being sited in the most politically advantageous spots.

So they've been busy working out "compromise legislation"—amendments to the Endangered Species Act that would make it possible to exempt certain projects at the possible expense of eliminating a species. These amendments are attached to the Endangered Species Authorization bill.

To make sure that everyone understands the importance of amending the act, conferees of the Interior Department appropriations bill wrote a clause into the bill stating that no money can be used to implement the Endangered Species Act without an authorization. And the Endangered Species Authorizations bill — to which the weakening amendments are attached — is snagged in the House, only days away from the final adjournment of this Congress next weekend.

The appropriations clause makes passage of the authorizations bill essential. Without it, there can be no legislation nor endangered-species protection until a new bill is drawn up and passed in the 96th Congress — next year.

Under the best circumstances, the problem may be resolved by October 16, Schreiner said, but he added that he was not at all confident that such would occur. The reason is that although the House version of the Endangered Species authorization has cleared its committee, it cannot

go for a vote before the entire House until the rules committee gives it a rule. The environmental community has been waiting daily for that rule. At press time (Tuesday, Oct. 2) they were expecting a rule by Wednesday. That would permit House discussion and a vote sometime Thursday or Friday.

However, since the House and Senate versions differ substantially, the bill must go to a conference committee to iron out differences before it can return to the House and Senate for a final vote. In theory, the conference could take anywhere from 20 minutes to several weeks—as energy conferences have proved—but, in reality, the conferees will have only days before the Congress adjourns. What's more, Monday, Tuesday afternoon and Wednesday morning are all holidays; there is a question whether conferees will meet during the holidays.

In the meantime, the 200 or so Interior employees who spend all or part of their time on endangered species work must busy themselves with something else. They've been "forbidden" to spend any money—including salaried manpower—for any endangered-species-related activities other than "Section 6" work having to do with administering cooperative aid to states.

The agency, which also monitors and protects certain wildlife refuges and sees to the feeding and maintenance of some endangered species, will "see that none of the animals starve," Schreiner said, although it is not certain whether under these unusual circumstances that, too, is not illegal. Several Interior employees have already voiced concern about whether even talking about the Endangered Species Act does not really violate the literal interpretation of the appropriations clause. □

R&D report to Congress

Although industry is probably not investing enough in research and development (R&D) from a purely economic-growth nor a productivity standpoint, the R&D intensity of manufacturing industries compares favorably with all industrial nations (including West Germany and Japan) and has, in general, kept pace with them. These were among key findings in the President's first report to Congress on science and technology.

The 122-page report, released this week, goes on to suggest that industry should increase its basic and long-term research efforts to increase productivity and economic growth. It also says colleges and universities, which conduct most basic research, are being pressured in ways that threaten their dominance in this sector. Prepared by the National Science Foundation, the study is the first to be issued under the National Science and Technology Policy Act of 1976. □