

Cooperative Systematic Studies in Antarctic Biology

I. E. WALLEN

*Office of Oceanography and Limnology
Smithsonian Institution*

As large a variety as possible of biological specimens is taken aboard *Eltanin* and other United States vessels visiting antarctic waters, and at shore stations of the U. S. Antarctic Research Program (USARP) of the National Science Foundation (NSF). The specimens become an international resource of data concerning the antarctic biota, its evolution, and its modifications for survival under the special antarctic conditions.

The Smithsonian Oceanographic Sorting Center serves USARP, other NSF projects, and other agencies by providing a specimen sorting and distribution service to increase the rate and quantity of research on marine organisms. The Center has sorted more than 8,400,000 specimens in the last 3½ years and more than 5,000,000 of these have been shipped to 190 specialists throughout the world.

Although nearly all of the research done by these specialists is supported directly by NSF and other agencies, as a specimen-oriented agency the Smithsonian Institution provides advice and assistance through the Sorting Center and the U. S. National Museum. As a special contribution to USARP, the Smithsonian Institution, through this project, provides for studies of groups of organisms which are not included in regular NSF proposals.

During the first year of this project, five groups of organisms have been approved for study under Smithsonian-NSF auspices. These groups include ascidians (sea squirts), octocorals (gorgonians), asteroids (star fishes), Serolidae (isopods), and the mesoscalpellids and arcoscalspellids among the cirripeds (barnacles). These groups will be documented in publishable form under the Smithsonian project.

Depending on the bulk of material available and the time available to the researcher, the manuscripts will be completed in one year (3) or in two years (2). Special arrangements are made to insure that the studies take place in a productive atmosphere where abundant specimens and library support can be made available. In one case (asteroids), transportation to the United States and local support was arranged. In the others, the studies will proceed in the local environment where additional specimens have been sent by the Smithsonian Institution and other organizations.

The groups remaining to be studied, as funds

and specialists become available, include the following taxa and others which may not be included in the USARP grants program: hydroids, actinarians, certain trematodes, nemertean, nematodes, diatoms, sipunculids, pelagic isopods, and certain copepods. Qualified scientists wishing to work on the systematics of these groups may wish to contact the principal investigator for this project.

Participation in USARP Expeditions

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The Smithsonian Institution, in its Museum of Natural History and Oceanographic Sorting Center, has what is probably the world's largest assemblage of scientists competent in marine systematics. Their participation in USARP expeditions serves to enrich the national holdings of antarctic specimens for research and permits the Smithsonian Institution to use *Eltanin*, a very important national facility for antarctic research.

The Institution continues to pay salaries, supply laboratory equipment, and provide facilities for its scientists. The USARP funding has permitted 14 Smithsonian employees to travel to the Antarctic and has provided ship support and minor supplies and shipping for collections taken aboard *Eltanin* and *Eastwind*.

Seven staff members have participated as professional scientists, collecting research specimens of echinoderms, corals, birds, plants, insects, and Foraminifera from the Antarctic and adjacent islands. Another six (including five women) have been sent from the Smithsonian Oceanographic Sorting Center (SOSC) as technical specialists to assist with collecting, labelling, preserving, and shipping of all types of organisms. Collections were taken by plankton-capturing nets and by mid-water and bottom dredges and trawls. The specialists from SOSC were responsible for securing as many specimens as practical and to bring them back in good condition for study.

Many barrels of specimens were collected and work is proceeding to prepare the resulting information for publication. The sorted specimens are sent to qualified scientists throughout the world, based on recommendations of five-scientist advisory committees on each of seven marine groups of organisms, selected to cover all marine forms.