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Freedom of Oceanic Research

The largest single appropriation of the earth's resources ever made is likely to occur in Santiago, Chile, at the forthcoming International Conference on the Law of the Sea. In preparatory meetings, a majority of the nations that border on the sea, particularly the less-developed nations, have argued for extending the zone of national jurisdiction out to 200 miles from shore. The region thus legally removed from the domain of the open sea would contain about 37 percent of the entire area of the oceans and be nearly equal to that of the continents.

Why should scientists be concerned with these arrangements made by politicians? Unfortunately, one of the property rights included under national jurisdiction is the right to control scientific research. Unless special provision can be made at Santiago to protect the freedom of ocean research, each coastal state will be able to prohibit or drastically limit out to 200 miles from shore all scientific work on the waters and the organisms they contain, the air above, and the sediments and solid earth beneath. One of the great ages of exploration of our planet could draw to a close.

Research in the oceans during the past 25 years has begun to revolutionize our understanding of the history of the earth and of the forces and processes that determine it; yet most of the work necessary for a real understanding remains to be done. Many problems are still unsolved in the boundary zones between the continental platforms and the ocean abyss, which in most places lie within 200 miles of the shore. Here run the great ocean currents, and the waters contain most of the sea's population and the largest diversity of living creatures.

The poor countries apparently believe that, unless they can control oceanic research in their new zones of national jurisdiction, it will become another tool in the hands of the rich and powerful to exploit the poor and the weak. The oceanographers contend, on the contrary, that freely published, openly available research will benefit all nations.

One difficulty is to define such universally beneficial "open" research. The International Council of Scientific Unions has proposed three criteria: (i) The coastal state shall have the right to participate by sending its own scientists aboard scientific vessels, (ii) it shall receive copies of all data and have equal access to all samples, and (iii) the results shall be published in the open scientific literature.

By themselves, these criteria may not be sufficient to protect the interests of the less-developed countries, because many of them possess neither the specialized manpower nor the institutional resources to be able to interpret the scientific data and results. Interpretations in which they can have full confidence would need to be provided either by their own trained nationals, or by an international organization in which the poor countries have a strong voice. An agreement to protect the freedom of "open" research might be possible at Santiago if the rich countries would pledge a definite portion of funds allocated for research at sea (say, 5 percent) to be used to support the provision of this assistance.

Unlike other political problems facing science today, the consequences of this dangerous threat to oceanic research could be irreversible. Scientists can help lessen the threat by making their voices heard.

—ROGER REVELLE