

Ocean Research

Energy, Mines and Resources. Also participating will be scientists from the Massachusetts Institute of Technology, Woods Hole Oceanographic Institution, and the Department of Oceanography of Oregon State University in the United States.

In this age of science, a country of Canada's size must deploy her scientific resources wisely. We cannot afford to be in the vanguard in all aspects of science, and must choose wisely the disciplines wherein we have the capacity and which will be of greatest benefit to Canadians. The field of oceanography is one where Canada does have capacity, and where research can be of great benefit in Canada's future. The Bedford Institute of Oceanography was opened but six years ago, and has already achieved considerable scientific stature. Canada has the longest coastline and thence the greatest potential for undersea resources of any country in the world. These resources, even though yet largely untapped, are the heritage of all of the people of Canada.

Apart from domestic interest, all mankind has a great interest in the development of undersea resources, if the challenge of meeting the needs for food and economic progress in a world whose population is to double in the next thirty five years is to be met. The president of the United States recently urged countries of the world to embark on expanded studies of the world's oceans during the period 1970-80 to be identified as the "International Decade of World Ocean Exploration". The United Nations subsequently endorsed, by formal resolution, this concept and the designated period of 1970-80. This research voyage will be Canada's contribution to the International Decade of World Ocean Exploration.

In accord with the government's intent to achieve closer ties with the countries of Latin America, those South American countries having an interest in these studies and who themselves have facilities in this area, will be asked to participate to the extent that is possible in keeping with the objectives of the mission. I had the opportunity to discuss this possibility with my counterparts in some of the South American countries during the recent Canadian mission. Scientists of my department have already been in communication with Chilean scientists regarding the possible program off the Chilean coast.

A study of the geological and geophysical features of Canada's continental shelves is the prime objective of the northern part of the

[Mr. Greene.]

voyage. Surveys, which will use to full advantage the complex of advanced equipment assembled on board the *Hudson* are being planned in areas off the coast of British Columbia, the Mackenzie River delta, in passages through the Canadian Archipelago, and in Baffin Bay.

The planned geological and geophysical studies in the Arctic will help to assess the mineral and other resource potential of the area, extend understanding of the evolution of continents and of ocean basins, such as Baffin Bay, and test the theory of continental drift. The surveys will form part of the extensive program of geological and geophysical exploration in Canada by the Department of Energy, Mines and Resources; scientists from the observatories branch and the Geological Survey of Canada will be involved in the operations and planning.

In the South Atlantic, South Pacific and Antarctic Oceans, the program consists of closely interrelated studies in biological, chemical and physical oceanography and underwater acoustics, geodesy, geophysics and geology.

Some hon. Members: Oh, oh.

Mr. Greene: I am sorry this is a little over the heads of some of my friends over there, Mr. Speaker.

During the transit of the ship down the Atlantic and up the Pacific, an experiment will be conducted by scientists from the United States in measuring the slope of the ocean surface to obtain information which is vital to the precise calculation of the volumes of water transported by ocean currents.

The ship will spend several weeks in the vicinity of Cape Horn investigating, by new techniques, the circumpolar current, the greatest in the world, which flows around Antarctica and passes between Cape Horn and the Antarctic continent.

The *Hudson* is scheduled to return to Halifax in October of 1970. It may be well known that underwater research in the realm of the oceans will be as important—

Mr. Speaker: Order, please. The Chair has exercised all possible patience in connection with the statement now being made by the minister. He knows of course the provisions of standing order 15. My understanding of this standing order is that statements should be reasonably brief. I have the impression that the minister's statement is unreasonable in