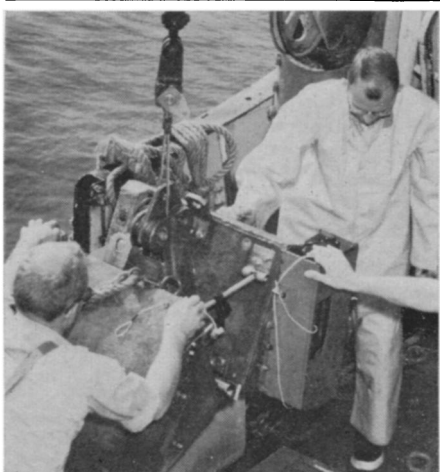


A whole new organization



U.S. Geological Survey
Taking samples: research comes first.

From an accurate appraisal of its contents, the ocean would be an important source of future minerals and fuels and a supplement to the natural resources of the land. The ocean does have a tremendous natural resource potential and even though the Government has allocated only \$516 million for all marine sciences in its budget for this year, and little, if any, more is expected next, tapping the oceans is on the docket to assume national and worldwide importance.

Nevertheless, those who look to the ocean as the imminent great provider of man's mineral and fuel needs are in for a disappointment. The image of the ocean as a replacement for vanishing land resources is unrealistic, according to reassessments of the sea's potential in a major policy document just delivered to President Johnson and the Congress.

Since the outgoing Administration will not be able to act on its recommendations, the report, which urges a complete revision of present marine policy, will become new business for the Nixon Administration. Mr. Nixon himself is waiting for the report before proposing major action in the marine field.

The 200-page report, prepared by the Commission on Marine Science, Engineering and Resources, makes sweeping recommendations for a national marine program and a Government organization to administer the program. The actual funds to be handled would be little more than is being spent now, at first, since research, rather than subsidized exploitation, is the major theme of the report.

As for a Government organization, the report proposes abandoning the present semi-formal coordination of

efforts in a score of Federal agencies, and lays the base for the establishment of a new independent agency to control and coordinate marine and atmospheric research. Such a recommendation would have heavy sledding in the Congress, where Federal agencies and the committees which oversee them react jealously to attempted inroads on their traditional activities.

Nevertheless, it lays the base on which the incoming Administration can build a major national effort, if it chooses to. But it will have to be a step-by-step effort.

At present, only six percent, or \$1.3 billion, of U.S. mineral and fuel production is offshore. Though the figure is rising, most of it represents oil and gas production from near-shore wells.

Indications are that after petroleum, gas, sulfur and sand and gravel, there is very little to be gotten economically from the sea at present, and not much chance of more very soon.

The problem is one of economics and technology combined. To extract the ocean's mineral and fuel wealth, the technological means to do it must be economically competitive with those on land. Right now, technology for mineral extraction is in a primitive state, acknowledges John G. Vedder, deputy chief of the U.S. Geological Survey's office of marine geology. Deep ocean technology has just begun to develop, he adds.

Of all the minerals dissolved in seawater, the only ones that can be extracted economically now are magnesium, bromine and salt. Nearly all the nation's magnesium and most of its bromine come from seawater while terrestrial mines produce most of the salt.

Manganese, which has been discovered in many ocean floor areas, has engendered considerable interest. Mixed with other metals, such as nickel, cobalt and copper, it is found in nodules,

crusts and pavements. But because of the high cost of mining and processing, recovery prospects in the near future are dim. Presently, it is the possibility of economic recovery of the associated metals which has aroused industry's interest rather than the manganese itself.

Terrestrial shortage is apparently only a secondary motivation to would-be developers of the sea's resources. As Dr. Vincent McKelvey, research geologist with the U.S. Geological Survey, puts it, "As far as the next decade is concerned, there are adequate mineral sources on land. There is not a single mineral on land for which all conceivable sources have been appraised and you can say, 'That's all there is.'"

The impetus for obtaining fuel and minerals from the sea appears to be profit rather than shortages. Dr. McKelvey points out that real shortages of some minerals, such as gold, mercury and silver, have not resulted in a drive toward technology for obtaining them from the sea.

And, as the technology for developing new techniques to mine the seas advances, so will the technology for mining the land. It would be unrealistic to expect one to advance while the other stands still.

A recommendation in a preliminary report to the Marine Sciences Council, echoed by the commission, is that the present role of Government should not be to mine, discover or develop the ocean's resources, but to concentrate instead on basic research on the geology of the continental shelf.

Of special importance is the making of adequate undersea maps to aid exploration. This in turn is dependent on tools and techniques for underwater observation. The report notes that although there is great progress in developing these tools and techniques, there are still formidable handicaps. ◇

TAX INCENTIVES

Slim hope for research, ghettos

The deeper involvement of American business in programs ordinarily dominated by the Federal Government has been a major tenet of President-elect Nixon's policy statements, both before and since his election. It will be re-emphasized in his inaugural message next week.

On the list are efforts in such fields as the support of basic research, the elimination of water pollution and such social engineering projects as low-cost housing and job training.

The problem is that these programs, while costly in both money and sophisticated manpower, cannot be considered

profit-making enterprises of the kind in which industry ordinarily invests. Incentives will have to be provided, probably in the form of tax incentives—rapid depreciation write-offs of capital investments or the even more controversial tax credits: the deduction of a part of a cost from a final tax bill.

And that's the rub.

Mr. Nixon's ability to deliver industrial participation in these areas will depend in large part on his ability to induce a heretofore reluctant Congress to consider tax incentives to industry.

The key to the process is Representative Wilbur D. Mills (D-Ark.), power-