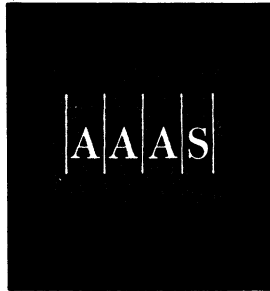


Science and Man in the Americas

Mexico City
20 June—4 July 1973



25–28 June

The Sea and Its Resources

Slowly mankind is recognizing that the oceans represent a major resource of the earth, although it will take many years before the true impact of their value will be realized throughout the world. Nonetheless, this realization has already begun, as can be evidenced through the Stockholm Conference on the Environment, the Convention on Ocean Dumping, the International Maritime Consultative Organization (IMCO) Conference on Oil Pollution, and by the great interest of many countries in the forthcoming U.N. Law of the Sea Conference.

It is likely that new laws governing activities and rights on the high seas, as well as in the coastal waters, will precede an adequate understanding or development of varied known and potential resources. Perhaps it should happen this way, although one finds it difficult not to be concerned lest nationalistic or local interests prevail over the common interest of mankind.

During the symposium entitled, "The Sea and Its Resources" (25–28 June 1973), a special effort will be made to evaluate some of the known and potential ocean resources and to examine the consequences of various legal actions, now being discussed in international circles, upon their development. Resource management, both on the high seas and within the coastal zone, will be reviewed along with the management of ocean research in context with the increased local and international interests.

The symposium has been arranged so that the person chairing each of the five separate sessions will give an overview of that particular session on the opening day. These sessions will be

devoted to: Coastal Zone Resources and Their Management, Ocean Effects on Weather and Climate, Nonrenewable Resources, Living Resources, and Ocean Affairs. Following the opening session, a half day will be allotted to each subject to allow for its more detailed discussion.

Many of the ocean resources are to be found in the coastal zone because it is an area of easy access to man. While the highly varied characteristics of the coastal zone will in some fashion determine its use, this area will always be one of maximum conflict of usage. Near population centers, there will be need for waste disposal facilities and at the same time recreational facilities. Industrial activities are also concentrated

in this area, further adding to pollution problems. Often these uses are not compatible. This same area is the major source of food products from the sea. The coastal zone represents the habitat for many species of wildlife which, if not protected, may easily disappear. Offshore petroleum resources appear to be so vast it is difficult to conceive that they will not be tapped.

Obviously, to avoid conflict, effective management schemes will be required. Someone must determine if there will be exclusive or multiple use within a certain area. The question arises whether this should be determined on a federal, state, or local level. The answer is not simple because of many legal aspects, as well as regional considerations.

Many of these same problems extend to the high seas where they take on an international complexion. In this area the conflicts are not as likely to be between multiple uses so much as between multiple users. For example, different nations often compete for the same fish. Similar national competition may develop in the future for petroleum and mineral resources unless a scheme of management can be developed for the high seas. It remains to be seen if the management structure for the use of the high seas will be an enlightened one in which the resources benefit mankind in general rather than special interest groups or individual nations.

In addition to resources within and



beneath the sea, the interactions of the ocean and atmosphere and its eventual impact on man in terms of weather and climate are important. To be able to predict changes in the weather and climate with useful accuracy is in itself a resource. An essential input to the successful development of both coastal

and high seas resources is a continuing research effort which will identify new resources as well as determine the impact of man's activities on the quality of the environment.

Because laws and regulations developed for the coastal zone and high seas to manage resources will also have

an effect on the ability to carry out research, it is important that both local and international bodies dealing with ocean affairs take this into consideration.

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22-23 June

Hurricanes

Hurricanes are called by many names around the globe—typhoons in the eastern Pacific, tropical cyclones in the Asian subcontinent, willy-willys in Australia. The names differ but the characteristics of the storms are about the same. They are fairly large, long-lived, nearly circular storms having maximum wind speeds equal to or greater than 74 miles per hour. In particularly intense storms, winds may exceed 200 miles per hour.

Hurricanes have been called meteorological monsters of the sea because they form over the warm, tropical oceans. Typically they are carried along in the broad current of the prevailing winds as the storms grow in size and strength. The winds stir up the sea and produce giant waves reportedly reaching heights of 20 to 30 meters in extreme cases.

As a hurricane sweeps over low-lying coastal areas, it is accompanied by a

wind-driven surge of ocean water which accounts for most of the damage to property, injuries, and death. Strong winds and heavy rainfall are contributing factors, particularly after a storm has moved inland over mountainous terrain.

The magnitude of a storm's devastation is illustrated by a few statistics. In August 1969, as hurricane Camille swept over the United States, it did about \$1.5 billion in damage and left 300 dead. Much earlier, in 1900, some 6,000 lives were lost in a hurricane striking Galveston, Texas, while in November 1970 more than 200,000 people died in Bangladesh in a single storm.

Over the last decade or two, meteorologists have learned a great deal about hurricanes. Earth-orbiting satellites keep the entire globe under surveillance and it is virtually impossible for a hurricane to form without being detected.

When a storm approaches a coastline, radar sets can be used to observe the precipitation characteristics of the storm and follow it minute by minute. Specially equipped airplanes can measure storm intensity and, at the present time, this method seems to be the only reliable means to make this important measurement when a hurricane is at sea and beyond radar range.

Electronic computers have made it possible to use mathematical models and statistical techniques to predict the future course and intensity of the storms.

Mostly as a result of two experiments conducted in 1969 and some new theoretical work employing numerical models of hurricanes, there is some optimism that, by means of cloud seeding, it may be possible to reduce the peak wind speeds in hurricanes.

These questions are to be examined at the symposium on Hurricanes to be held in Mexico City on 22-23 June.

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3-4 July

Environmental Health in the Americas

Natural, industrial, community, domestic, and personal environmental variables have an impact on health of people throughout the American continent. Altitude and climate, industrial exposures to dust and vapors, community exposures to air pollution, and domestic or personal exposures to cigarette smoke and other aerosols are the main topics of the symposium (3-4 July) on "Environmental Health in the Americas." Epidemiological surveys, new health care technology, education of health professionals, and disciplines such as pharmacology and engineering are among the resources needed to solve environmental health problems. The meeting will focus on these approaches to solutions and on planning for the future.

There will be four sessions. The first

session will deal with the impact of major environmental variables: high altitude (A. Hurtado), adaptation to cold (O. Héroux), work in hot climates (N. B. Strydom), and air pollution (S. K. Friedlander). The second session deals with environmental lung disease as a prime example of ill health which can be curtailed through adequate environmental management. The session will include papers on tobacco smoking (G. J. Miller), asbestos inhalation (H. Oyanguren), lung disease in foundry workers (S. F. Bo), and lung disease in textile workers (V. Lopez Merino).

The study of environmental factors in the induction of disease requires careful epidemiological studies of suitable population groups. The principles of epidemiology are also important in

evaluating health care programs. Hence, the third session includes papers on several epidemiological subjects, including a survey of Chagas' disease in Bolivia (R. D. Stewart), exposures to inhalants in the home (E. Zuskin), rural health care in Mexico (L. Cañedo), and new epidemiological techniques for the study of lung disease (A. Bouhuys).

The fourth and last session will be a discussion of disciplines and approaches which may contribute to the solution of environmental health problems. It includes papers on manpower problems (R. A. Stallones), educational programs (W. T. Jones), autopharmacology (M. Rocha e Silva), and engineering (W. Engracia Oliveira).

Each session includes a panel discussion with short presentations by additional participants on the main topics of the session.

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