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.

ARTHUR E. MAXWELL
Woods Hole Oceanographic Institution, Woods Hole Massachusetts

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.

LOUIS J. BATTAN
University of Arizona, Tucson 85721

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.

AREND BOUHUYS
Yale University, New Haven, Connecticut 06510