

which begin over the waters of the oceans. Observations from ships, balloons, planes and satellites now enable U. S. meteorologists to locate and spot hurricanes as they begin forming. They are tracked also by radar when close to the U. S. Ample warning in advance of a hurricane strike can be given.

This advance warning capability made it possible to evacuate 300,000 coastal residents on the Texas coast in September, 1961, before Hurricane Carla struck. Without this capability, thousands of lives would have been lost in addition to the property damage suffered.

U. S. Weather Bureau scientists are now attempting to find a vulnerable point in the hurricane's system in the hope of using this "Achilles' heel" to change the hurricane's path or trigger the release of its tremendous energy far from land.

Tidal waves are the link between earthquakes, avalanches and hurricanes. The tidal waves or tsunami (Japanese word meaning harbor wave) are produced by earthquakes in the ocean, earthslides and volcanic explosions as well as hurricanes.

Hundreds of fishing boats off the coast of Japan were destroyed recently by the destructive force of a tidal wave believed to be induced by an earthquake beneath the ocean. During October, 1960, the storms and tidal waves of a tropical cyclone or hurricane inundated the coast of East Pakistan causing the death of almost 10,000 persons. The tidal waves that followed the earthquake in Agadir already have been mentioned.

These phenomena can be predicted and in the United States facilities are at hand to evacuate large population groups. In

less developed countries, such as Communist China, India and Pakistan, building of primitive earth platforms stored with food and water and furnished with some makeshift shelter have provided life-saving protection against the tidal waves.

Because of the frequency with which tidal waves hit Japan, Japanese scientists are now studying ways by which this water power may be harnessed.

While some regions of the world suffer from too much water, others get too little. Drought is a serious problem in the more arid territories of the world and occasionally it strikes some parts of the temperate zone. Hurricanes sometimes provide fringe benefits to drought areas by sending them rain-producing clouds. Predictions of drought are difficult to make and there is little that man can do to alleviate its consequences.

However, scientists have observed that areas of drought generally are balanced off by areas of severe rainstorms. It is becoming more evident that the various stresses of nature are interdependent. As a consequence, different scientific disciplines are joining in research to understand more completely the cause and effect of the vast destructive energies in, on and above the earth.

Nations as well as scientific disciplines are combining efforts to learn about the workings of the earth and its environment as a whole, through such international bodies as the World Meteorological Organization and the International Committee of Scientific Unions. Continued cooperative efforts aimed at disarming these common enemies, it is hoped, ultimately may move nations to disarm themselves.

• Science News Letter, 82:258 October 20, 1962

TECHNOLOGY

Medical Computer Center

► THE NATION'S first large-scale health sciences computer center will be operative by the end of the year at the University of California, Los Angeles, Medical School.

The new computer center will be largely devoted to processing of medical research data. It is planned that laboratory data such as brain wave recordings, electrocardiograms, and blood flow data, may be fed by direct wire from the laboratory to the computer, and thus processed immediately.

Patient data, such as clinical laboratory and radiological procedures, may also be stored in the computer's memory units with an eye to future statistical studies which will utilize data from such procedures.

The facility will also be used for training programs designed to acquaint students with the medical uses of computers and for the graduate training program for specialists in biostatistics in the School of Public Health.

The \$3,300,000 computer center was made possible by grants from the U.S. Public Health Service.

The computer, an IBM 7094, is the first system of its kind to be delivered outside of Federal agencies. The 7094 is a speedier version of the powerful 7090 installed at

UCLA last year to serve the Computing Facility which provides general computing for UCLA's scientific and other researchers, and the Western Data Processing Center, which emphasizes research in the field of business and which serves 74 other educational institutions in the West.

The outgrowth of a research project initiated August 1961 by Drs. W. J. Dixon and F. J. Massey of the Department of Preventive Medicine and Public Health, the center is a joint project of UCLA's Schools of Medicine and Public Health.

"The availability of computing equipment of this magnitude will open new doors in medical research and permit the development of new techniques to deal with some very old and difficult problems," Chancellor Franklin D. Murphy said.

The completion of the Health Sciences Computer Center will make the UCLA Medical Center the leading institution in application of computer techniques to medical problems, Vice Chancellor Stafford L. Warren pointed out. A smaller computer facility has already been established in the Brain Research Institute for use in the investigative program there.

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