

METEOROLOGY

Hurricane Audrey's Toll Highest in Two Decades

► THE TOLL of life taken by Hurricane Audrey, the year's first hurricane that struck Louisiana and Texas in late June, was heavier than from any other natural disaster in nearly two decades.

At least 350 persons are known dead and a considerable number are still missing. Particularly hard hit was the village of Cameron, La., which was also inundated by a tidal wave.

Weather Bureau records show only two hurricanes have hit the United States in the month of June during the period from 1926 to 1956. Both these June hurricanes, like Audrey, concentrated their fury on the Gulf states, but caused much smaller loss of life.

Of the 49 hurricanes causing loss of life in the U. S. during the period from 1926 to 1956, 37 occurred in August or September. This number was almost equally divided between the two months, statisticians at the Metropolitan Life Insurance Company reported.

Science News Letter, August 24, 1957

BACTERIOLOGY

Penicillin-Resistant Bacteria Increasing

► STRAINS of bacteria that have developed resistance to penicillin can now even be found in persons who have never had the antibiotic, Dr. J. C. Gould, University New Buildings, Edinburgh, reports in *Nature* (Aug. 10).

Antibiotic-resistant bacteria arise by spontaneous mutation. They keep increasing in the population because they have a greater chance of survival than penicillin-sensitive strains when both are growing in the presence of the antibiotic.

A strain of *Staphylococcus pyogenes* bacteria that has become penicillin-resistant is being found in increasing numbers not only in penicillin-treated hospital patients but also in medical personnel who have not received the drug.

New personnel entering the hospital are being quickly "colonized" by the resistant forms, Dr. Gould reports.

A possible explanation is that the nurses and medical staff receive enough antibiotic on their hands and from the air to kill all but the penicillin-resistant strains that may be lurking in their nasal passages.

Support for this theory came from a study of a factory which handled and distributed penicillin. Examination of healthy factory workers showed that the bacteria strains isolated from their nasal passages were similar to the resistant strains found in treated hospital patients.

These strains are both quite distinct from those bacteria found in the general population.

The amount of penicillin in the environment, Dr. Gould concludes, must be an important factor in maintaining resistant strains.

Science News Letter, August 24, 1957

PUBLIC HEALTH

Atom Tests Safe

One extensive series of tests on the effects of atomic fallout on humans indicates that radiation in man has not "dangerously increased." Further tests are planned.

► ATOMIC FALLOUT from weapons testing has not dangerously increased radiation in man, the Army has found from a study of nearly 5,000 urine samples sent from military posts around the world.

This is the first time that a large scale study of radiation has been done on man himself. Up to now it was necessary to make more-or-less accurate guesses from animal studies instead of human research.

Direct measurement in man had to be done at least once by someone, and it was a "natural" for the Army because of available personnel, Lt. Col. James B. Hartgering, MC, director of the division of physiology and pharmacology, Walter Reed Army Institute of Research, and head of the project, told SCIENCE SERVICE.

For even more exacting measurements, the Army has begun construction of a whole body radiation counter and "iron room" in the basement of the Institute.

The two-year urine sampling project is now being completed and has just been declassified. The samples were put through extensive radio-chemical tests to measure strontium-90, iodine-131, cesium-137, cerium-144, zirconium-95 and ruthenium-106, all radioactive isotopes produced by nuclear bombs.

"The results have shown that from the 1955 and 1956 series of atomic tests there are insignificant amounts of these isotopes getting into man. This was expected, but proof of it was needed," Lt. Col. Hartgering said.

The urine samples were collected from 10 individuals at each station for a 24-hour period. For the 1955 series of tests samples from 17 United States and 15 foreign bases were obtained. A smaller number were used for the 1956 series since it took place in the Pacific.

All foreign samples had to be shipped by air mail since iodine-131 has a half life of only eight days and would completely disappear from the specimens within a short time.

Although urine sampling is the most practical way to study a large number of people, the whole body counter and "iron room" give much more precise measurements.

The whole body counter consists of a long cylindrical tube in which the person to be tested is placed. It can measure the total amount of gamma radiation in the body rather than just the amount being excreted by the kidneys.

Only about three of these atomic-age devices have been built, and none of them have access to as large a number of possible test subjects as the Army.

Once in operation, it is hoped that measurements can be made on persons who have been accidentally exposed to too much

radioactivity so that more exact knowledge of radiation injury will be available.

Coupled with the whole body counter will be the so-called "iron mine," a room lined with iron plates in which humans are measured for the type of radioactive particles they contain.

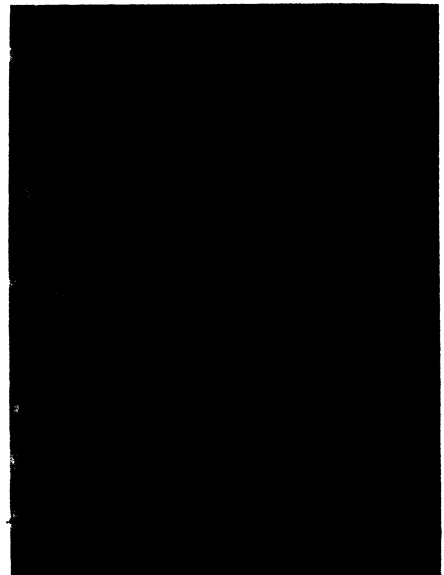
The subject is placed in a chair and a large crystal of sodium iodide is slowly moved over his body. Radioactive particles escaping from his body penetrate the crystal and cause it to generate photons. These are then picked up and counted by banks of special photon-sensitive electronic tubes which surround the subject.

Science News Letter, August 24, 1957

● RADIO

Sat., August 31, 1957, 1:45-2:00 p.m. EDT "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Jack Masur, director of the Clinical Center of the National Institutes of Health, Bethesda, Md., will discuss "How Patients Help Medical Research."



SQUARE BUBBLES—Lithium fluoride crystals, irradiated with neutrons and then heated above 600 degrees centigrade, contained these square bubbles. They were magnified more than 400 times before being reproduced in this photograph. Dr. Peter Senio found the bubbles while working at General Electric Company's Knolls Atomic Power Laboratory, Schenectady, N. Y. (See SNL, Aug. 17, p. 90.)