

## METEOROLOGY

# Predict A-Bomb Fall-Out

► WHERE RADIOACTIVE particles hurled into the atmosphere by atomic bomb explosions will fall to earth can now be predicted "with some success," Dr. Lester Machta of the U. S. Weather Bureau has revealed.

With Robert J. List, also of the Weather Bureau, Dr. Machta made the first complete, public report on a Joint Weather Bureau-Atomic Energy Commission survey to trace broad-scale weather movements using the spread and fall of debris from atomic explosions.

Evidence from the A-bomb tests run in the spring of 1952 was collected at over 121 fixed stations extending across the U. S., and by two mobile monitoring teams covering areas within 500 miles of Las Vegas, Nev. (See SNL, Feb. 7, 1953, p. 85.)

Dr. Machta and Mr. List reported results of the relation between fall-out of atomic debris and large-scale air motions to the District of Columbia Branch of the American Meteorological Society meeting.

Two methods of checking the number of radioactive particles were used:

1. Dust falling to the ground was collected on gummed paper sheets one-foot

square which, after a 24-hour exposure, were burned and the radioactivity of particles then counted.

2. A suction device that pulls air through it was used to sample dust particles suspended in the air.

Besides weathermen, U. S. industries are also interested in charting the path of radioactive particles, since unexpected fall-out can fog photographic plates or disturb highly sensitive experiments in research laboratories.

The survey showed, Dr. Machta said, that there are sometimes relatively small circulation patterns in the atmosphere that the usual wind instruments do not detect. For instance, from one of the explosions, the radioactive particles were traced to southwestern Utah, then back toward the explosion site again. No atomic debris, however, was found east of Utah, thus showing a comparatively small, closed circulation pattern, covering an area of less than the size of an average state.

The fall-out of radioactive particles, Dr. Machta stressed, does not cause damage to men or animals.

Science News Letter, February 27, 1954

## MEDICINE

# Needed: 361 Doctors

► THE ADDITION or redistribution of 361 physicians in certain areas of the United States would give at least one active doctor to every 2,000 persons throughout the nation, Dr. Frank G. Dickinson, director of the American Medical Association's bureau of medical economic research, Chicago, declared at the Congress on Medical Education and Licensure in Chicago.

His figures came from a seven-year study of physician distribution, said to be the first of its kind.

To make this study, Dr. Dickinson divided the country into 757 areas, using the trading area principle that is based on road systems and marketing habits of the people, not on state, county and city boundaries.

In the 757 areas, Dr. Dickinson found there were 15,192 towns, villages and cities with one or more physicians; 5,311 of these towns, villages and cities were served by one active practicing physician. The number of persons in each area per active practitioner varied from 5,100 in the area around Monticello, Utah, to 380 in the Rochester, Minn., area.

Seventy-five of the 757 areas had more than 2,000 persons per active physician. However, Dr. Dickinson explained, these areas were among the most sparsely populated ones in the nation, located in the mountain, west-north-central, and east-south-central regions of the country. The addition or redistribution of only 361 physi-

cians into these areas would have alleviated this condition, he added.

According to the report, in 1950 every city, town or village with more than 5,000 population had at least one physician in active private practice, as had 96% of those with a population between 2,500 and 5,000, 88.3% of those with population between 1,000 and 2,500, and 21% of those with a population between 100 and 1,000. More than half of the latter group had less than 250 inhabitants, it was added.

Science News Letter, February 27, 1954

## MARINE BIOLOGY

## Start Research to Get More from Fish Waste

► FISHERMEN THROW away 15% of their catch with present fishing methods. The U.S. Fish and Wildlife Service has started pioneering research to end this waste, by finding profitable uses for the internal organs of fish at its Boston laboratory.

Before icing their catch at sea, fishermen now dress the fish and throw the viscera, one-seventh of the weight of the catch, overboard. Later during processing on land, most fishery operators convert the head, backbone and skin of the fish into a meal that is widely used in poultry feeds. In

the research, attention will be given to possible medical uses of fish organs and the preparation of high-protein diet supplements.

The studies are part of a project to determine the feasibility of freezing whole fish at sea for processing on land. The Fish and Wildlife Service has shown this method to be effective and economically practical.

Sea-freezing of whole fish preserves the quality of fish and makes possible longer fishing trips. If uses can be found for the parts now wasted that are preserved by freezing, this technique will be even more profitable for commercial fishermen.

Science News Letter, February 27, 1954

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