

IN VARIOUS SCIENCE FIELDS

Mock Suns

TWIN snowflakes are responsible for the optical effect known as mock suns, or sun dogs. These are luminous spots that sometimes appear in the sky near the sun, observed in snowy weather in high latitudes.

At the meeting of the American Meteorological Society, held in connection with the Pacific Division of the American Association for the Advancement of Science, Dr. John Mead Adams, of the University of California at Los Angeles, announced that he had produced these crystals artificially. The microscopic crystals that are born twins develop into a T-shaped crystal that refracts the light to produce the effect.

Meteorology
Science News-Letter, July 5, 1930

Mountain Cooking

TO find the best recipe for baking at high altitudes, home economics specialists of the Colorado Experiment Station have been mixing batches of flour according to a wide range of formulas, at their altitude laboratory.

At a 5,000 foot elevation, baking powder produces 20 per cent. more gas than at sea level, Inga M. Allison said, in reporting the first results of the experiments before the American Home Economics Association. The amount of sugar and shortening is decreased with diminished atmospheric pressure.

The extent to which each ingredient in a flour mixture is altered for each thousand foot change in elevation has been determined up to 12,000 feet. For each type of flour mixture, there is one combination of ingredients which yields the best finished product under constant atmospheric conditions, Miss Allison said.

Physics—Home Economics
Science News-Letter, July 5, 1930

Short Wave Dangers

UNEXPECTED hazards lurk in short wave radio sending sets aboard Navy ships or elsewhere, radio personnel of the U. S. Fleet have discovered.

A 14-inch gun might be fired prematurely if, in stress of battle or practice, radio sending upon just the

right high frequency waves from an antenna near an exposed gun were in progress when the gun was about to go into action.

Researches at the U. S. Naval Research Laboratory, Washington, showed that the big guns themselves act as receiving antennae in these cases and the current of the radio antennae induces a high voltage, enough to light an electric lamp under extreme test conditions, within the turret. The guns are fired electrically and such an induced current occurring in the firing circuit might fire the gun too soon with disastrous results. Means of obviating this danger were found through experiments in the laboratory and with the fleet. The researches were under the direction of Commander A. Hoyt Taylor, and were performed by L. C. Young, L. A. Hyland and J. T. Fetsch, radio engineers.

In a similar way high frequency radio currents might set up currents in gasoline filling hose and this might give rise to a spark that would ignite explosive vapor present. The scientists warned merchant vessels to guard against this hazard when fueling.

Even in the air the hazard exists. By induction in the wires of the firing circuit of wing-tip airplane flares, sufficient current can be picked up from a radio antenna to set off the primers and ignite the flares accidentally.

The Navy Department has issued safety orders to its ships, detailing the dangers and the methods of counteracting them.

Radio
Science News-Letter, July 5, 1930

Yellow Fever Carriers

AT least two more species of mosquitoes will be found to be carriers of yellow fever, Dr. Cornelius B. Philip of the International Health Division of the Rockefeller Foundation predicts.

After the work of Walter Reed and associates in establishing the *Aedes aegypti* (then known as *Culex fasciatus* and later as *Stegomyia fasciata*) as the carrier of the dreaded disease, and after the subsequent anti-mosquito efforts of sanitary officers throughout the world, it was thought that yellow fever would soon be banished from the earth. Just when health officers and the public had begun to feel easy,

yellow fever broke out again, and now has for its stronghold West Africa.

Scientists have again taken up the study of this disease, particularly in West Africa. A number, among them Noguchi, Stokes and Wakeman, have lost their lives in the recent efforts to gain final control over it. From the recent investigations, a number of mosquito species, at least nine, have been found to be yellow fever carriers. The one known as *Taeniorhynchus Africanus* is considered by Dr. Philip the most likely to be of importance in the spread of the disease in West Africa.

"While the fight against yellow fever has heretofore proved efficacious in the Americas when centered about the control of the *Stegomyia* mosquito alone, increasing information on West African conditions indicates a considerable complexity of factors in that region," said Dr. Philip.

The possibility that other mosquito species may also be carriers and spread disease is one of the factors complicating the situation in West Africa. It appears from recent studies that the mosquito need not even be the house-frequenting species exposed to yellow fever patients in order to pick up the virus of the disease, because infected persons can probably infect insect carriers before clinical symptoms have appeared and while the infected persons are still up and going about.

Medicine
Science News-Letter, July 5, 1930

Three Quakes

THREE earthquakes in one day was the record of Wednesday, June 25, according to data gathered from seismograph stations by Science Service and interpreted by the U. S. Coast and Geodetic Survey and the Jesuit Seismological Association. The first two were in the early morning hours and were on the east coast of South America and in the Caribbean near Porto Rico.

The third, the most severe of the set, judging by the larger number of seismograph stations reporting it, was located at 16 degrees south latitude and 79 degrees west longitude, according to the experts of the Coast Survey. This position is in the Pacific Ocean, about 300 miles southwest of Lima, Peru.

Seismology
Science News-Letter, July 5, 1930