



SOLAR NOISE CHECKED—Now in full operation, this solar noise recorder is located near Lake Kivu in the eastern Belgian Congo. It is one of the instruments for geophysical research established by the *Institute pour la Recherche Scientifique en Afrique Centrale*, or IRSAC. The instrument is used to record solar radiation and check ionospheric levels.

PUBLIC HEALTH

Death Trap From Smog

The necessary steps for drastically reducing dangers from smog that threatens to make Pasadena a death trap can be taken now, physicist finds.

► PASADENA IS a death trap. Any day now a smog may arise that could kill thousands of Californians and leave others with life-long scars.

City officials can take firm steps today to avoid this catastrophe, in the opinion of Dr. Francois N. Frenkiel, physicist at Johns Hopkins University Applied Physics Laboratory, Silver Spring, Md.

Experts should pinpoint the sources of smog and determine which of these sources are the worst. This is the first thing that must be done in any city, whether Pasadena or Pittsburgh.

Then, using high-speed electronic computers, they should set up a program for predicting in advance when a deadly smog condition is developing. A few hours' warning would give local officials time in which to take decisive steps to ward off danger.

This is the second thing that must be done. Otherwise thousands may die in Pasadena if weather conditions press a heavy smog over the city's face for several days.

The current danger in Pasadena is "enor-

mous," Dr. Frenkiel said, but residents have three immediate courses of action to follow should a death-dealing smog settle over the city:

They can shut down industry and their home furnaces, and stop driving their cars, trucks and buses.

Or they can run for the hills where the air is clean.

Or they can search out air conditioned buildings and spend long hours in them.

Otherwise many older persons may die, particularly those now afflicted with heart disease and bronchitis.

Many that escape death may be afflicted for life with diseases they now do not have. Some might contract bronchitis, and others might develop a heart condition. Some persons believe smog helps to spawn lung cancer.

Dr. Frenkiel's suggestions grew out of his work of harnessing high-speed computing machines to the smog problem. He was drawn into Pasadena's smog problem in May when he discussed the subject at a National Science Foundation symposium at

the University of California at Los Angeles. Later he was called in as a consultant by the Southern California Air Pollution Foundation.

Computers could discover a dangerous smog condition in the making, he said. This would permit officials to shut down certain industries temporarily to avert a local disaster.

High-speed computers would permit scientists to figure which spots are most critically endangered by smog. The computers also would permit forward-looking predictions to be made when a new industry declares its intentions of building a plant in the area. The machines could reveal whether the new plant will aggravate the smog situation dangerously.

The machines also could produce useful data to show what would happen if the town begins growing in a different direction.

Dr. Frenkiel believes this is a realistic approach to a problem that is enveloping more and more American cities.

"We must learn to live with industry," he added. "After all, millions derive their livelihoods from our factories and chemical plants, and the economic and military security of our nation depends upon our industrial output."

A Pasadena smog may not act on its victims exactly as the 1952 London fog affected Britishers, Dr. Frenkiel emphasized. Pasadena's smog contains elements that the London fog did not have. Furthermore, Pasadena does not have London's population.

At its peak, London's soot-laden fog killed 600 Britishers a day.

Deaths from bronchitis were nine times greater than the London average during the preceding 10-year period. The death rate from all causes was more than two and a half times greater than the average for the same 10-year period. All told, the fog is blamed for the deaths of 3,000 persons.

Science News Letter, October 30, 1954

BOTANY

Twin and Triplet Plants Produced by X-rays

► TWINS AND triplets have been produced in corn and lily plants by exposing their pollen to X-rays.

In experiments involving polyembryony, two or more embryos in the same seed, researchers at the University of Maryland's department of botany reported that they have been able to induce multiple plant births from a single seed by treating the pollen with specific doses of X-rays.

An increase in the X-ray dosage brings about a higher percentage of twins and triplets.

The biologists are continuing their studies of multiple plant births in an effort to find a rapid method of getting a uniformly genetic line of new plants. The present crossbreeding methods take from five to seven years.

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