PUBLIC HEALTH

Influenza Threat

Disease epidemic may invade from either the east or the west. Health Officers alerted to possibility that disease may jump to U. S. through airplane travel.

➤ WE ARE threatened from the east and the west by influenza. The disease is now reported to be epidemic in England, Greenland, Hawaii, and South Pacific islands.

"There is no evidence of epidemic influenza in this country at this time, from any of our data," Dr. Carl C. Dauer of the National Office of Vital Statistics, U. S. Public Health Service, states. "The influenza reporting center at the National Institutes of Health has not had any laboratory reports indicating any influenza epidemic, either," he added.

In spite of the present healthy situation, there is always a good possibility of the disease spreading swiftly from one country to another. In these days of fast plane travel it can jump across oceans easily. So an outbreak seems likely though no one can predict when and where it will strike.

Following reports of the outbreaks on the Pacific Islands, health officers of the three west coast states were alerted by the U. S. Public Health Service. The California state health officer has replied that he is "very much on the alert" and presumably the others are also.

Science News Letter, January 13, 1951

RESOURCES

Phosphorus Lack Relieved

New mine and processing plant in Montana promise to make up shortage of chemical used for matches and in medicine and fertilizer.

➤ RELIEF from the shortage of phosphoric acid that has existed during the past ten years is promised with the opening of a new phosphate rock mine in Montana and a processing plant near Butte which will be ready for operation in about a year.

The ore to be mined runs about 27% phosphate which is not high enough in grade for making economically superphosphate for fertilizers. However, it can be successfully processed in an electric furnace into elemental phosphorus, and then eventually into phosphoric acid.

Hydroelectric power for the furnaces of this new plant will be brought over the Rockies from the government-owned Bonneville dam on the Columbia River near the Pacific coast in the Northwest, according to the U. S. Bureau of Mines. Some power will be obtained from the Montana Power Company. Mine and processing plant will be operated by Victor Chemical Works of Chicago.

Phosphorus is an essential for both animal and vegetable life. Man gets the phosphorus needed from compounds in the vegetables eaten. Plants get it from the soil, principally from phosphates. It is supplied to the soil very largely in superphosphates made from natural deposits of phosphate rock. The largest use for phosphorus itself is in making matches. Quantities are used, however, in medicine, rat poison, phosphorus compounds and in metallic alloys.

The manufacture of superphosphate for fertilizer is big business in the United States, and growing larger each year. The annual production of phosphate rock mining is around 10,000,000 tons. The superphosphate is a soluble calcium phosphate made from the insoluble rock by treatment with sulfuric acid. Approximately one-third of the sulfuric acid produced in the United States is used in the fertilizer industry.

Science News Letter, January 13, 1951

ENGINEERING-LANGUAGE

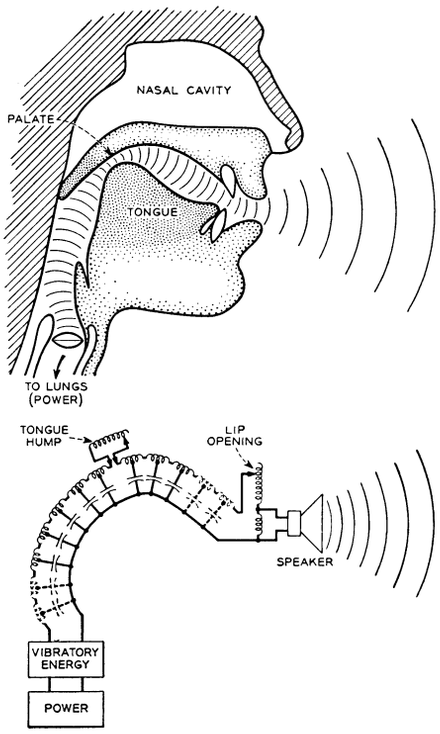
Machine That Speaks To Aid Science Study

➤ HUMAN-LIKE speech sounds that come from a machine are now being made. An energy source, electrical circuits and a loudspeaker in a certain combination do the trick. These roughly correspond to the lungs, the voice tract and the mouth.

The machine, now producing mainly vowel sounds, will be able to create other speech sounds as well, its designers, Dr. H. K. Dunn and L. O. Schott of the Bell Telephone Laboratories predict.

The near-human tones come from a system that mirrors electrically the mechanical system of the human speech organs. Unlike other machines that have been built to produce human-like sounds, this system creates speech, does not just ape it.

Other "voices" have built up speech sounds by duplication, that is, by analyzing the frequency of the vibrations that produce the sound, then making an exact copy of these vibrations.



SPEECH MACHINE—Showing position of vocal organs (above) in pronouncing "n" and equivalent adjustment of the electrical vocal tract (below).

This machine creates sounds by combining an energy source with an electrical system and a loudspeaker. It does so in a way specifically designed to imitate the human throat and mouth passage. This electrical vocal system includes the equivalent of the lip opening, the length of the speech tract and the tongue hump.

The function of each of these parts that make our speech sounds can be examined separately in the electrical counterpart. The machine will be used to investigate the similarities and differences among speech sounds and the how and why of these differences.

Sound patterns taken of real speech and of the created speech show striking similarities, Mr. Schott states. How the electrical voice should be built was based on measurements made from X-rays of the human voice tract. Between the energy source and the loudspeaker are a number of sections of series inductance and shunt capacitance.

Science News Letter, January 13, 1951

The California *condor* is a slow-breeding bird and there are only approximately 60 alive today.

September is the name of a new red *raspberry* whose principal crop matures in that month.