



RECORD CHANGER

Phonograph records are played from the bottom as well as the top with this new record changer. As it starts, the bottom record of the stack drops into position, and is played in the usual way. When finished, the record is lifted, the direction of turning is reversed, and the other side is played from the bottom. That over, the record is deposited in a felt-lined compartment, a new one drops into place, and the process starts over. When the last record has been played from the bottom, the mechanism is automatically stopped.

ZOOLOGY—ARCHAEOLOGY

Sumerians Liked Pork, Bones From Ruins Show

IRAQ'S earliest known inhabitants, the Sumerians, were fond of pork. They also ate a good deal of mutton and beef, and smaller quantities of game and fish.

These facts are brought out in a study of animal bones found in buried city ruins at Tell Asmar, a site near the Tigris river a few miles from Baghdad. The study was made for the Oriental Institute of the University of Chicago by Dr. Max Hilzheimer, noted German zoologist. (*Reviewed, SNL, this issue.*)

Groupings of the bones found in the ruins of houses, palaces and temples indicated 14 or 16 pigs, 10 gazelles, 6 sheep or goats, 5 wild asses or onagers, 4 or 5 cattle, 3 deer and 2 dogs, besides a number of bones of unidentifiable species of birds and fish.

The most interesting thing about the finds is the high proportion of pigs. You couldn't sell pork for a cent a ton in that neighborhood now: the inhabitants are all Mohammedans.

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One way to tell a *huckleberry*. If it crackles when you eat it, it's a huckleberry, not a blueberry.

SEISMOLOGY

Earthquake Risks Can Be Lessened by Right Building

Made Land and Fills, Especially When Water-Soaked, Are Dangerous; Structures on Rock Usually Safer

EARTHQUAKES can neither be prevented, hastened nor delayed. They cannot even be reliably predicted. Nevertheless something can be done about them, declares Dr. Harry O. Wood, research associate of the Carnegie Institution of Washington.

The things that can be done, Dr. Wood points out, are to learn all we can about where earthquakes are most likely to occur, what kind of ground is safest to build on, and what kinds of construction best resist the wrecking effects of quakes. Considerable data on all these points have already been accumulated.

It is known, for example, that made land and fills, "especially when water-soaked, are certainly dangerous in some localities and probably everywhere; that loose water-charged natural ground is more dangerous than dry compact ground; that soft rock is less dangerous, and hard rock least dangerous of all. A well-designed and well-built structure on a good rock foundation near the source

of a strong earthquake is, in general, in much less danger than a poorly designed, poorly built structure on bad foundation ground considerably more distant from the source."

People tend to forget or disregard the lessons of past earthquakes, Dr. Wood complains. Most of the buildings that were wrecked in the Long Beach earthquake of 1933 were built after the San Francisco disaster of 1906. Had the lessons of that catastrophe been applied, most of the damage in the Long Beach area would not have occurred, he declares.

On some ground of known seismic proclivities, as for example in a narrow zone near the San Andreas fault, no important buildings at all should be erected. Elsewhere, all new buildings should be compelled to conform to earthquake-resisting specifications worked out by engineering specialists. In this way the risk can be gradually reduced to a minimum.

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BIOLOGY—PHYSICS

New Sonic Generator Kills Bacteria With Short Waves

A NEW generator, that kills bacteria and other microorganisms with very short sound waves, has been built at the University of California. The new device, developed by Prof. A. P. Krueger, consists of a nickel tube within a magnetic field, activated by electrical impulses. The tube is first elongated, then contracted by the alternate pulls of the magnets. So rapid is this oscillating motion that the nickel tube emits sound waves with a high frequency of 9,300 cycles a second.

The tone is deadly to bacteria and viruses. Prof. Krueger subjected staphylococci, bacteria that cause boils and carbuncles, to this penetrating sound. The

bacteria were all killed. Bacteriophage, a virus disease of bacteria, was also destroyed, and the cellular secretion from which bacteriophage is formed was made permanently inert.

Prof. Krueger's new generator was developed in the intensive study of bacteriophage which he has been carrying on for the past fourteen years. Dr. E. J. Scribner, research associate, and B. B. Brown, technical assistant, aided Prof. Krueger in his new sonic studies.

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The U. S. Army figures that it has saved 27,500 pounds of *aluminum* by using plastic handles for 500,000 knives.