

giving their enemies. The U. S. Army ordnance scientists have been experimenting for a long time to get a boat-tailed bullet suitable for American weapons, for the French ammunition, in spite of its virtues, had some offsetting faults. Now they have found what they were seeking, and the great stocks of rifle and machine-gun ammunition held in reserve against the possible war everybody hopes will never come will be loaded with the most highly educated bullets that have been evolved to date.

Science News Letter, August 19, 1933

To make quicker tests of how weather affects roofing and water proofing materials, engineers now use artificial rain, sunshine, cold and heat.

Three silver crowns studded with jewels were among the royal treasures recently found by archaeologists in Egypt when they explored a tomb of about 600 A. D.

BACTERIOLOGY

Bacteriophage Recruited For Fight Against Disease of Fish

SALMON and trout are to get their share of medical treatment according to recent bacteriological work. Dr. Charles Todd has reported in *Nature* the possibilities of wiping out the disease of furunculosis, an affection which yields skin ulcers and attacks the internal organs. This disease has caused a high mortality in salmon streams and it is proposed to eliminate it—at least in restricted waters—by means of a specific bacteriophage.

The bacteriophage is an element, specific in each case to some special strain of bacteria and which is deadly to that strain. Its nature is still in dispute. Whether it is a chemical product of the bacteria, or an animate form which preys on the germs, is debated. It is agreed, however, that the 'phage comes into evidence only after the bacterial "sponsor" has been at work. At any rate, it serves a highly practical purpose in actually killing off the strain with which it is allied.

Dr. Todd has isolated a bacteriophage which is very active against the germ (*B. salmonicida*) causing the salmon disease. This has been found in samples of several rivers throughout England. The strength of the 'phage is tested by applying it to cultures of the bacteria. Very soon the deadly element "eats holes" in the growth, and,

in large enough amounts, may annihilate the culture.

Healthy salmon are known to carry the disease, and therefore mortality is not a gauge for its occurrence. Dr. Todd suggests a test to measure the presence of the disease by examining the drain-water from a hatchery. If this water had been put in phage-free, any traces of the bacteriophage in the drain would indicate that the infection was present in some of the fish.

This work was performed at the National Institute for Medical Research.

Science News Letter, August 19, 1933

ASTRONOMY

Year's Second Eclipse Is Far Distant

THE SECOND eclipse of 1933 will be seen from points in Europe, Africa, Asia and Australia on August 21, when the moon passes between the earth and the sun, producing a solar eclipse. But unlike the much advertised eclipse of last August, this one is attracting practically no scientific attention. This is not because of its inaccessibility, because often astronomers travel halfway around the earth to observe one.

When the moon passes in front of the sun this time, it will be farther from the earth than usual, so that its apparent diameter will be a little smaller than that of the sun. As a result, a ring of sunlight will be seen around the dark disc of the moon, even where the eclipse is most complete. This is called an annular eclipse.

The path over which the ring of sunlight is seen, will begin at sunrise in the Sahara Desert, will pass eastward across Palestine, through Baghdad across Afghanistan, through Delhi, thence southeastwards through Burma, Borneo and North Australia, ending at sunset on the east coast of Queensland. The sun will be seen partially eclipsed over all of Asia and Australia, northeastern Africa and central and eastern Europe.

Science News Letter, August 19, 1933

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MILLIONTH OF A SECOND
an address by
Dr. J. W. Beams
Professor of Physics at the University of Virginia
To be given Friday, August 25, at 1:45 p. m. Eastern Standard Time over stations of the Columbia Broadcasting system. Each week a prominent scientist speaks over the Columbia System under the auspices of Science Service.

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