

ANIMAL PATHOLOGY

Foot and Mouth Disease Fought In New California Outbreak

WAR against an invader, no less deadly and relentless than it would be if the invader were a hostile foreign nation, has broken out in southern California. The first battle has been won by forces of the U. S. Department of Agriculture and the State of California, in the mass slaughter of 5,000 hogs, in two herds at Guena Park, Orange County, known to be infected with foot and mouth disease or to have been exposed to it. The luckless squealing animals were driven into great trenches dug to receive them, shot down to the last pig, covered with quicklime and buried. No cure is known for foot and mouth disease, and it spreads like wildfire among any kind of hoofed animals; so immediate massacre and quick burial constitute the only possible treatment.

Several times have different parts of

the United States been threatened with this disease, which attacks human beings as well as livestock, and which is widespread in Europe, South America and other parts of the earth. Each time it has been stamped out by the same Spartan methods of mass killing and rigid quarantine of the areas known to contain the infected soil—for the virus lives for some time on the surface of the ground.

The general in charge of the Federal forces in California is Dr. Rudolph Snyder, of the Department of Agriculture, who was in Texas when the outbreak was discovered and flew to the fighting front by airplane. In charge of the California forces is Dr. J. J. King, State veterinarian. The invasion was first discovered by Dr. L. M. Hurt, who notified State and Federal authorities. Positive diagnosis of foot and

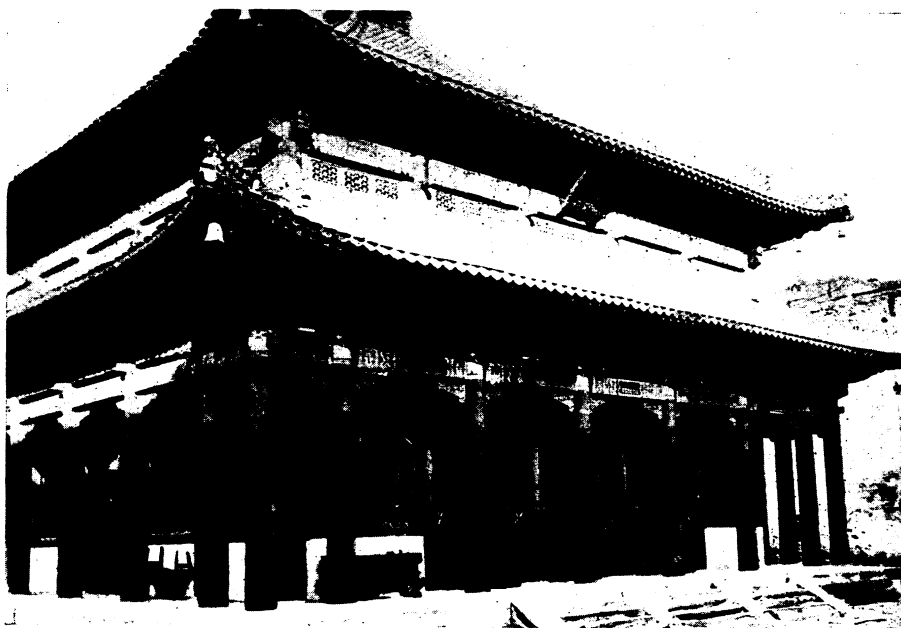
mouth disease was made by Dr. Jacob Traum of the University of California.

In the background, in Washington, stands the chief of the bureau of animal industry of the Department of Agriculture, Dr. John R. Mohler, ready to speed to the assistance of his lieutenant if necessary. He has confidence, however, that Dr. Snyder will have the situation in hand; for Dr. Snyder had charge of the Federal work during the California outbreaks of foot and mouth disease in 1924 and 1929, and therefore rates as a veteran in this kind of warfare. For sinews of war, there remains a sum left over after the 1924 outbreak had been put down, and Dr. Mohler is hopeful that it will suffice for the present emergency.

It is not known how the present invasion broke into the country. It seems probable, however, that it was imported, for Orange County lies on the sea-coast, between Los Angeles and San Diego counties, and within easy trucking distance of several seaports. The hogs were known to be garbage-fed; and it was garbage from a coastwise steamer from South America that started the 1929 foot and mouth disease epidemic in California.

One encouraging feature in the present situation is found in the relative isolation of the two infected herds of hogs which have been destroyed. With a strict quarantine in force, it may well be that the first battles will also be the last.

Science News Letter, May 7, 1932



CHINESE MASTERPIECE FOR CHICAGO FAIR

The beautiful Golden Pavilion of Jehol, finest Lama temple in China, is to be brought to Chicago and re-built on the Lake front for the Century of Progress exposition of 1933. The temple is of teak and other rare woods heavily carved. Its greatest splendor is the roof of gilded copper which is so picturesquely embellished. Jehol, where the temple stood, was the summer home of the Manchu emperors.

Arrangements for erecting the temple are being made by Dr. Sven Hedin, noted Swedish explorer, and his assistant Dr. Gosta Montell, who brought it from China for Vincent Bendix of Chicago. A Chinese architect and skilled Chinese workmen will assist the Chicago contractor who rebuilds the shrine.

In the temple, Dr. Hedin will install many Oriental treasures which he has collected, including Buddhas of bronze and gilt wood, a throne of the Grand Lama, prayer wheels, priestly robes of rich stuffs, masks used in sacred dances, temple bells, parchment writings, and rare wall hangings of painted silk.

PHYSIOLOGY

After-Dinner Thirst Lasts Only Few Hours

EXPLANATION of why you get thirsty right after dinner was given in a report by Dr. Magnus Gregerson of Harvard University Medical School to the Federation of American Societies for Experimental Biology. Right after eating, water is withdrawn from the blood and tissues of the body and used to increase the digestive fluids. This leaves the body in a dried-out condition and makes you feel very thirsty. As digestion progresses, the mixture of food and digestive fluids is absorbed, the water is restored to the blood and tissues, and you gradually lose your thirst. So if you cannot get a drink to quench your after-dinner thirst you may console yourself with the thought that the thirst will diminish within a few hours anyway.

Dr. Gregerson studied after-dinner

thirst in dogs. Under ordinary conditions a dog does almost all of his drinking within two or three hours after eating. During this time there is a marked reduction of the flow of saliva, corresponding roughly to that occurring if the animal does not get any water for 48 hours. But in four or five hours the secretion of saliva returns to normal,

even though the dog has had nothing to drink in the meantime.

Furthermore, if the animal is deprived of drink for five or six hours after feeding and then allowed to drink freely, his entire intake of water for the 24 hours is only about one half or one quarter of the amount he usually drinks during 24 hours.

Science News Letter, May 7, 1932

ASTROPHYSICS-METEOROLOGY

Climatic Cycles May Allow Long-Range Forecasting

Sunspots and Other Phenomena Show Regular Fluctuations Which May Have Practical Significance in Future

CLIMATE here on earth varies in cycles and there is hope that future generations may use the knowledge and records being accumulated by science to predict their weather and climatic environment for long periods in advance.

The National Academy of Sciences devoted one session to reports from the leading investigators of climatic cycles. While they presented evidence from sunspots, tree rings, clay layers, solar radiation and other phenomena showing regular fluctuations, they joined in placing the wide-spread practical application of these methods of prediction some years in the future.

The importance of knowing the regular fluctuation of climate was emphasized by Dr. John C. Merriam, president of the Carnegie Institution of Washington, chairman of the Academy's committee on the subject.

Weather Abnormalities Periodic

Summarizing forty years of study of the sun's radiation, Dr. C. G. Abbot, secretary of the Smithsonian Institution, reported that the sun's output of radiation is variable, that its variation is periodic, that the United States weather departures from normal are periodic, and that nearly all the ranges of weather departures from normal are comprised in a series of periodicities which are identical to those found in the sun.

"We have not yet tried the bold venture of long-range forecasting that might even enable meteorologists to forecast long in advance the fat years and the lean years as Joseph is said to have done in Egypt," Dr. Abbot ex-

plained. "We expect to discover by a little more research whether we have real cause and effect in these relationships."

The variations in solar radiation as measured daily from high mountain peaks in this country and South America can be reproduced by seven regular periodicities of 7, 8, 11, 21, 25, 45 and 68 months, Dr. Abbot's studies show.

Dr. Walter S. Adams, director of the Mount Wilson Observatory, upheld the reality of the sunspot cycle of about 11 years but declared the real cycle is from the time the spots are fewest until the sun is again free of spots. This is about 22 years long. The period of any one rise from minimum to maximum may vary from 9 to 14 years and the amplitude of the maxima may vary by 50 per cent. A longer period of 60 to 80 years also has been detected.

"It seems probable that both the quantity and quality of solar radiation vary during the sunspot cycle and many attempts have been made to correlate terrestrial phenomena with sunspots," said Dr. Adams, who has worked in collaboration with Dr. S. B. Nicholson. "Definite correlations have been found with the variations of terrestrial magnetism and its related phenomena. There is evidence of a slight correlation between sunspots and atmospheric temperature in certain regions on the earth and with other factors of weather and climate for limited regions and for limited time intervals. These correlations are so uncertain that, in the majority of cases at least, predictions based on them have very little weight."

Tree rings that record climate varia-

tions extending 3,000 years into the past were analyzed by Dr. A. E. Douglass of the University of Arizona. He explained how graphical analysis of the records had shown convincing evidence of the reality of climatic cycles, including one that corresponds to that of the sunspots.

Hope that the layers of clay sediments left by the receding glaciers of Ice Ages may be made to reveal the climates of those ages was expressed by Dr. Isaiah Bowman of the American Geographical Society. As yet these climatic indicators have not yet been tied into the present time or with the tree-ring records. Scientists are now attempting to link these natural records through study of the mud layers left in old lake bottoms in western United States and the trees that grew nearby.

Science News Letter, May 7, 1932

MEDICINE

Bad Cold May Nullify Liver Treatment in Anemia

WHY the effect of liver in treating pernicious anemia is checked by an acute infection, such as a bad cold or an acute attack of sinus trouble or any other infectious disease, was explained by Dr. Gulli Lindh Muller of the Thorndike Memorial Laboratory, Boston City Hospital and Harvard Medical School, who reported results of his studies to the American Association of Pathologists and Bacteriologists at Philadelphia.

The reason seems to be that acute infection has exactly the opposite effect on blood formation to that of liver or liver extract. The liver stimulates the blood-forming organs to produce new red blood cells. The infection seems to have a restraining effect on the blood-forming organs.

In the first series of patients treated with liver, Drs. Minot and Murphy, first to use the method, noticed that infection checked the response of the blood cells and the general improvement in the patient. Seeking an explanation for this, Dr. Muller studied pigeons, the only animals yet found to be peculiarly sensitive to liver.

Liver extract given to pigeons produces a condition of blood and bone marrow similar to that in pernicious anemia patients after treatment with liver, Dr. Muller explained. An acute infection will inhibit the response to liver treatment in these animals.

Science News Letter, May 7, 1932