MEDICINE

Chickens Are Incriminated As Source of Encephalitis

This Summer's Epidemic, Largest on Record and Affecting Three Thousand Persons, Traced to Fowl

CHICKENS are the probable source of encephalitis, or "sleeping sickness" attacks of man and horses.

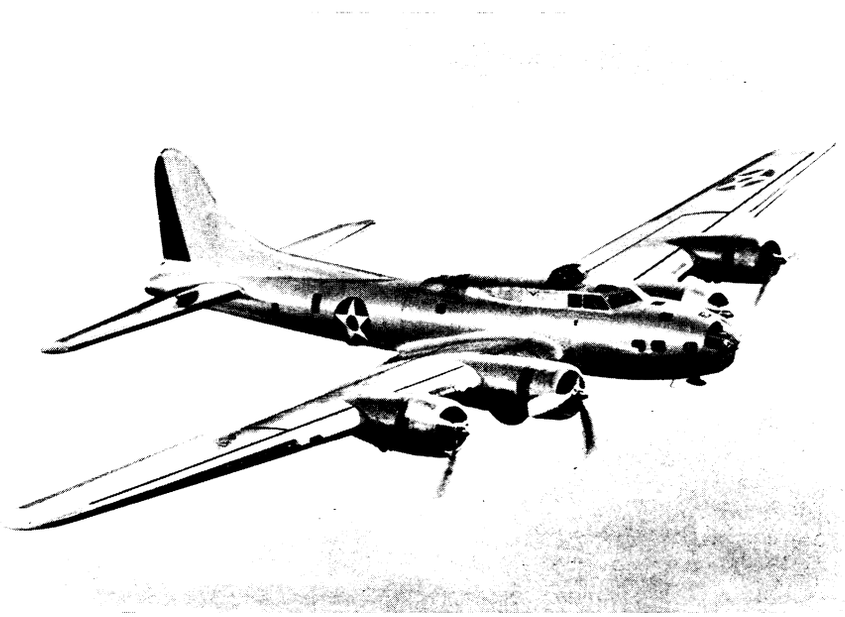
Evidence strongly incriminating domestic barnyard and wild prairie fowl appears in two reports, one from the U. S. Public Health Service (*Public Health Reports,* Sept. 26) and the other from scientists of the University of California and State College of Washington. (*Science,* Sept. 26.)

The virus or germ of the disease was found in the brain and spleen of a prairie chicken shot on Aug. 27, 1941, near Rugby, N. D., then the center of an encephalitis epidemic, Herald R. Cox, William L. Jellison and Lyndahl E. Hughes, of the Public Health Service's Rocky Mountain Laboratory at Hamilton, Mont., announce. This marks the first time the encephalitis virus itself has been found in an animal other than horses and man.

A much more widespread reservoir than previously suspected for both the horse encephalitis virus and the virus that caused a severe epidemic of encephalitis in St. Louis some years ago is indicated by the findings of William McD. Hammon, John A. Gray, Jr., Francis C. Evans and Ernest M. Izumi, of the University of California, and Howard W. Lundy, of State College of Washington.

They found evidence of encephalitis infection, though not the virus itself, in a significant proportion of domestic fowl from areas where encephalitis cases occurred in 1939, 1940 and 1941.

"It would appear," they state, "that barnyards and fowl runs, found in large numbers in small towns, rural and suburban areas, are the principal foci (centers) of infection for encephalitis of either Western equine or the St. Louis type."



"MASS PRODUCTION" FLYING FORTRESS

This is the new four-engine Boeing B-17E, described by the War Department as "bigger and more deadly" than any of its predecessors in the famous Boeing Flying Fortress series. It will be built in quantity by Douglas Aircraft Company and Vega Aircraft Company as well as by Boeing.

Encephalitis, epidemic in the Northwest this summer, attacked more than three thousand persons, killing at least 190 and probably many more. It was "the largest encephalitis epidemic of record," according to a statement from Dr. James P. Leake, medical director of the U. S. Public Health Service.

The approximately four-to-one ratio of attacks of men and boys of working age over females of the same age, plus the heavy mosquito infestation in North Dakota this summer, Dr. Leake pointed out, indicates strongly that mosquitoes spread the disease from the prairie chickens to the men and boys working in the wheat fields.

Science News Letter, October 4, 1941

RADIO

Radio Static Is Used To Locate Hurricanes

STATIC is just a disagreeable noise to most of us. But, in the hands of Dr. G. W. Kenrick of the University of Puerto Rico, it has become a useful servant for locating and predicting the course of a hurricane.

A method of triangulation similar to that of the land surveyor is used. Stations in Puerto Rico and in Florida pick up the static of the storm, and determine the direction from which it comes. Two lines drawn on a map in the proper directions from the stations determine, by their point of intersection, the position of the source of the static.

Several stations in Puerto Rico are experimenting with this method.

By making continuous photographic records of the flashes of the static receiving tubes at the several stations, the course of a storm can be followed. The camera films are driven by synchronous motors, like those that actuate electric clocks, and the time of receiving a flash is recorded at each station to one-tenth of a second. In this way, Dr. Kenrick explained, it has been possible in several cases to follow the course of a hurricane for more than a thousand miles.

The method is still in the experimental stage, but may become eventually a valuable aid to our Uncle Sam.

Science News Letter, October 4, 1941

PUBLIC HEALTH

Infantile Paralysis Rate Unchanged Over Nation

THE infantile paralysis picture remained practically unchanged throughout the nation during the week ending Sept. 20, with 596 cases reported

to the U. S. Public Health Service, as compared with 595 during the previous week.

Except for Alabama and Maryland, which reported increases, the number of cases in the southern states decreased, as did the number reported from New England. Reports from the East North Central states were about the same as for the previous week. Increases were reported from New York and Pennsylvania.

Both North Dakota and Minnesota reported increases in encephalitis. North Dakota had 37 cases and Minnesota 17.

Influenza cases in Texas, which have been running high ever since last winter's outbreak and keeping the national total above the five-year median figure, dived from 530 to 254. This was still, as the Texas cases have been for the past several weeks, about 40% of the Nation's total of 672 cases.

Science News Letter, October 4, 1941

MEDICINE

Sulfa Drugs May Substitute For Quinine for Malaria

Studies Made in Panama by Rockefeller Foundation And Gorgas Hospital Indicate We May Be Free of Imports

THE SULFA drugs may free the Americas from dependence on non-American sources of that strategic medicinal chemical, quinine, for the treatment of malaria.

This is one important, though unstated conclusion to be drawn from a report by Dr. L. T. Coggeshall and Dr. John Maier, of New York, and Major C. A. Best, U. S. Army Medical Corps. (*Journal, American Medical Association,* Sept. 27.)

Promin and sulfadiazine, two of the newest sulfa drugs, may be regarded as "important substitutes" for quinine or atabrine in treatment of malaria, these scientists state as a result of studies made jointly by the Rockefeller Foundation International Health Division and the Gorgas Hospital, Canal Zone, Panama.

These two remedies were used to treat 30 malaria patients, both native and foreign residents of Panama. Promin was definitely effective in 17 cases, and sulfadiazine was effective in 10 out of 13 cases.

"It should be emphasized," the three doctors state, "that at present there are no reasons for giving the drugs in preference to quinine or atabrine for the treatment of malaria, and they should be regarded only as important substitutes."

The drugs may become vitally important substitutes, it appears, though the scientists do not mention this, in the event that the world's supply of quinine from the Dutch East Indies is cut off by war and present domestic stockpiles are exhausted.

Further study of the drugs as malaria remedies is suggested. Better anti-malarial drugs than either quinine or atabrine are needed, scientists have long known. Although of great importance to the person with an acute attack of malaria, neither of these drugs can be relied on to remove the germs completely from the patient's blood. Neither have they true preventive action, although when taken in advance of the bite of an infected mosquito, they temporarily suppress an attack of malaria. It may be that some as yet untried or undiscovered sulfa drug will prove a better anti-malarial than any chemicals now available.

Science News Letter, October 4, 1941

PSYCHOLOGY

Proper Order of Lessons Would Speed Training

THE EASE with which you learn a new subject such as physics or mathematics may depend a great deal on the order in which your lessons come, research by Dr. George Katona, fellow of the John Simon Guggenheim Foundation, has revealed. Application of this finding might step up the efficiency and permanence of the learning of students training for defense, he indicated.

If you were studying dancing and Chinese history, it would not matter a bit which lesson you had in the morning and which in the afternoon, he said.

But if one of your lessons makes you understand the general idea of a subject or a principle and the other gives you facts that you can fit into that general framework, the general lesson should come first. If you learn them in the wrong order, your score on an examination testing your knowledge of both will actually be lower than the average of two other persons who had each had only one of the lessons.

In one of the experiments described by Dr. Katona, lesson A consisted of an explanation of simple geometrical rules concerning angles. Lesson B required the students to learn by heart the data given for certain building lots—their form and size of their angles.

The unfortuniate students who had lesson B first had to memorize all the angles in a mechanical way, almost as if they were learning nonsense. Later learning of the geometrical rules did not seem to clear up what they had already memorized.

Students who learned the general rules first were able soon to cut down on their work because they realized they needed to memorize only some of the angles—the others could be figured at any time from the rules.

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ENGINEERING—PSYCHOLOGY

Light Colors Painted on Machinery Improve Seeing

BRIGHTER colors than the conventional dark green or battleship gray of machine tools increase the accuracy of seeing, provide more comfortable working conditions, and also increase production and reduce accident hazards.

These were the findings of a two-year investigation reported before the Illuminating Engineering Society by Arthur A. Brainerd of the Philadelphia Electric Company, and Matt Denning of the du Pont Company.

Color contrast was also found helpful. Of all the solid colors tried, light buff and light gray gave the best results, with aluminum color standing high and light blue next in line. But the best result of all was given by a two-tone scheme in which all machines were painted "Horizon Gray" and the working area "spot-lighted" with light buff.

The psychological effect on the workers was determined by a questionnaire. Photometric measurements were made of the brightness of the surfaces and rates of production were recorded. The work is still going on, the experimenters said, in several industrial plants and further data will soon be available.

Science News Letter, October 4, 1941