

September. Total meningitis cases since the first of this year were 14,523, compared to a five-year median figure for the year to date of 1,602.

Infantile paralysis cases dropped to 679 for the week ending Oct. 2, from

818 the preceding week. Decreases were particularly notable in those states previously reporting the largest number of cases: California, Texas, Kansas and Illinois.

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MEDICINE

Vaccines Against Virus

Protection against certain virus diseases, such as virus pneumonia, may be provided by serums and vaccines from the blood of hens and roosters.

➤ **VACCINES** to protect against certain virus diseases, such as virus pneumonia, parrot fever and lymphogranuloma venereum, or antisera to cure the diseases may some day be developed from chicken blood, it appears from a report by Maurice R. Hilleman and Dr. F. B. Gordon, of the University of Chicago. (*Science*, Oct. 15)

A chicken antiserum that definitely protects mice against a virus pneumonia peculiar to these animals has been developed by the Chicago scientists. A single dose of the antiserum given either before or after a dose of pneumonia virus has a protective effect, but an even greater effect is obtained when several doses of the antiserum are given during the first three days after the pneumonia virus infection.

This mouse pneumonia is caused by a virus which is very definitely related to the viruses that cause the human diseases, parrot fever, lymphogranuloma venereum, meningopneumonitis, trachoma, inclusion conjunctivitis and some of the atypical pneumonias now being re-

ported in increasing numbers of cases.

So far it has been impossible to produce vaccines or antisera for these diseases by the usual methods, such as inoculating horses or rabbits to produce virus-fighting antibodies in their blood. In fact, not even enough virus-fighting antibodies can be produced in the blood of such animals to provide good material for diagnostic tests or tests to help distinguish various unfamiliar virus diseases from each other.

Inoculating the virus into roosters seems to do the job, at least to the extent of producing a plentiful supply of mouse pneumonia virus antibodies in the rooster's blood. Serums with enough human disease virus antibodies for test purposes at least can probably be produced from chicken blood by the same methods.

"It is also possible," the Chicago scientists state, "that such serums would prove of value in treatment of human infections with these agents. Further investigation along these lines is under way."

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ative of diaminodiphenylsulfone. Both Promin and the chemical from which it was derived were developed after attempts to cure tuberculosis with sulfanilamide failed. The hope was that some chemical modification of sulfanilamide might give it tuberculosis-conquering powers.

Diaminodiphenylsulfone itself is toxic to mice, but can be detoxified, Dr. Raiziss discovered, by combining it with sodium formaldehyde sulfoxylate.

The detoxification which apparently makes it safe does not reduce its power as a germ-fighting remedy. In mice Diasone is as effective as sulfanilamide in curing streptococcus infections, Dr. Raiziss reports, and almost as effective as sulfadiazine in curing Type II pneumonia.

Its most important property as a germ-fighter, however, is its action against experimental tuberculosis in guinea pigs.

"With its background of low toxicity and effectiveness in experimental infection," Dr. Raiziss states, "this drug gives promise of favorable clinical application in tuberculosis."

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MEDICINE

New Plaster Cast Treatment Of Burns Has Good Results

➤ **GOOD RESULTS** with a new plaster cast treatment for burns of arms, legs, feet and hands are reported by Dr. Stanley M. Levenson and Dr. Charles C. Lund, of Boston City Hospital and Harvard Medical School. (*Journal, American Medical Association*, Oct. 2)

Possibility that the method may in the future be used for treating burns in the armed forces appears from the fact that the work reported was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and Harvard University. Further suggestion of this appears in the emphasis the doctors put on the wide availability of the materials needed for the treatment, their lack of bulk and the fact that the cast will protect the burned extremity from injury if the patient has to be moved.

Healing is as rapid as with other methods of treating burns, the doctors state and ability to move the burned arm, leg or hand returns more rapidly.

The lack of pain felt by the patients, from the start of treatment to complete healing is described as "remarkable." As soon as the cast is on, the pain disappears. A slight dull ache was felt for

MEDICINE

Hope for TB Conquest

Expectation that new drug, Diasone, may wipe out dread disease is strengthened by the favorable results in tests on guinea pigs.

➤ **HOPE** that a chemical may yet be developed which can conquer tuberculosis as the sulfa drugs have conquered pneumonia and other infections appears in a report by Dr. George W. Raiziss, of the Abbott Laboratories. (*Science*, Oct. 15)

Diasone is the short name of the drug which is the latest white hope for a medicine that will cure tuberculosis. Tests on

guinea pigs of this and various other compounds, including Promin which has also given promise of curing tuberculosis, show that Diasone "produced the most beneficial" results in treating tuberculosis in the guinea pigs, Dr. Raiziss reports.

The full chemical name for Diasone is disodium formaldehyde sulfoxylate diaminodiphenylsulfone. Promin is a deriv-

three days by three of eight patients whose cases are reported. A total of 22 patients have had burns treated in this way with "very satisfactory" results.

The casts do more than give the burned part rest and protection from further injury. They prevent swelling, which other scientists have recently reported as a harmful feature of burns, and prevent slowing of the blood circulation in the burned area. The preven-

tion of swelling also means that less plasma is being lost from the burned area, and in large burns this would lead to considerable saving in the amount of plasma that would have to be given the patient.

Applying the cast is relatively easy. The casts used for the burn cases are thinner and lack the bulky padding of casts for broken bones.

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MEDICINE

Meningitis Stopped

Epidemics of meningitis can be halted almost instantly by using sulfadiazine as a prophylaxis; methods for Army can be applied to civilians.

► **MENINGITIS EPIDEMICS** can be stopped almost immediately by prophylactic use of sulfadiazine, Col. Dwight M. Kuhns and Capt. Harry A. Feldman, of the Army Medical Corps, reported at the wartime conference of the American Public Health Association, from their experience in the Fourth Service Command.

Chief difficulty heretofore in stopping a meningitis epidemic has been that, although the patients were isolated, it was impractical if not impossible to find and isolate all the healthy carriers of the germs.

Giving small doses of sulfadiazine to all the personnel of a single unit at the same time immediately after the first cases signal the approach of an epidemic will immediately eliminate all the carriers and at the same time reduce the attack rate, or new cases, almost to zero, the Army medical officers found.

Careful laboratory methods for detecting the carriers and identifying the type of meningococcus they carry are important, they emphasized. The type of germ predominating is a forecast of the extent and rapidity of the impending epidemic.

The laboratory and prophylactic methods worked out for the Army, they state, can be applied equally well to certain civilian groups, such as schools, orphanages, asylums, camps and the like.

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Salmonellosis Danger

Ordinarily not considered a serious health problem, salmonellosis, or diarrheal diseases due to infection with salmonella, become a constant threat under war conditions, Dr. A. Daniel Rubenstein and Dr. Roy F. Feemster of Bos-

ton, Mass., warned. Paratyphoid fever is caused by some members of the salmonella germ family. Often infection with these germs is mild and the patient may not even see a doctor, but about half of 294 cases Dr. Rubenstein and Dr. Feemster studied were serious enough to require hospitalization. The disease may be fatal in the aged and debilitated.

The infections are spread through the population in small family outbreaks, the doctors believe. Almost half the patients are infectious and capable of spreading the germs for at least four weeks after onset of their illness, and often the infection persists for two, three or four months even though the patients are no longer sick.

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Sterilization of Air

Fighting epidemics of influenza and similar air-borne disease by chemical sterilization of the air seems nearer to practical application as a result of studies reported by Burgess H. Jennings and Dr. Edward Bigg, of Chicago at the wartime conference of the American Public Health Association.

Triethylene glycol vapor can instantaneously kill all the bacteria in the air of a room of 10,000 cubic feet capacity, they report. The ability of this chemical, familiar as a relative of a popular antifreeze mixture for automobile radiators, to sterilize the air has previously been shown in small, experimental chambers.

The studies reported show that it can be used in fairly large rooms of about classroom or hospital ward size, or offices in which a number of people work. Whether sterilizing the air in this way will keep infections from spreading has yet to be determined, but experiments so

far, the scientists state, "leave little doubt that this will be the case."

The triethylene glycol was used in the form of a vapor.

This vapor distributed itself readily throughout the room, in a manner similar to water vapor. Fans aided in a more rapid and uniform distribution. Maximum killing effect on the bacteria is obtained with a relative humidity of 35% to 40%.

One device used to generate the glycol uses the principle of atomization and can be incorporated into the pre-existing duct systems of air-conditioning units. Another device generates the vapor by heating a solution of the chemical.

The rate and concentration of the vapor generated must be determined by the number of air exchanges in the room air. For practical use, an instrument must be developed to control operation of the generator, starting and stopping it as the concentration of the glycol in the air changes, something as a thermostat regulates a furnace.

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Shortening Convalescence

► **SICK** and wounded men of the Army Air Forces get well faster and go back to military duty in "top" physical condition as a result of the convalescent-rehabilitation training program in Air Forces hospitals, Brig. Gen. David N. W. Grant, the Air Surgeon, reported at the wartime conference of the American Public Health Association.

The program has been in operation for the past seven months, General Grant reported. During this time approximately 16,000,000 man-hours in physical and educational training have been given and the teaching rate at the present time is about 2,500,000 man-hours per month.

The sick soldiers are reconditioned physically by a planned and organized physical rehabilitation program. At the same time, the many hours of convalescence that are usually wasted are used for the educational program designed to disseminate knowledge and thereby make these men better soldiers. If the man can not go back to military service, he is helped by this program to return to productive civilian life.

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Vaccine Affects Wassermann

► **PREVIOUS** vaccination against smallpox may cause a false positive reaction to the Wassermann test for syphilis, Dr. J. M. Lubitz of Chicago warned.