MEDICINE

Pneumonia Serum Acts By Medical "Blitzkrieg"

PNEUMONIA - CURING antiserum stops the spread of the disease in the lungs by a medical "blitzkrieg" invasion of the areas involved, Dr. W. Barry Wood, Jr., of Harvard Medical School, reports. (*Science,* July 5)

The serum contains antibodies, substances antagonistic to the pneumonia germs. After the serum has been injected into the vein in sufficient quantities, the antibodies, Dr. Wood has discovered, invade the pneumonia lesion in the lung and stop its spread by their antagonistic action on the pneumonia germs.

His tests, made on rats with experimental pneumonia, refute the previously held view that the antibodies of pneumonia serum could not penetrate areas of consolidation within the lung.

Science News Letter, July 20, 1940

MEDICINE

Surgical Lessons Learned From War Experiences

ONE of the most important and lasting results of war since ancient times has been the gain in knowledge of how to heal broken bones and torn flesh. It is too early to say whether victims of automobile and industrial accidents in future will be helped by the lessons surgeons learn from the present war, but a look at the past, even so recent a past as the war in Spain, suggests that this may be so.

"Experience gained in war has always been a factor in surgical progress," Dr. J. Trueta, late director of the department of surgery, General Hospital of Catalonia, Barcelona, points out in his just published book for surgeons, *Treatment of War Wounds and Fractures.*

The use of living maggots to clean up infected wounds, now widely practiced in modified form, was introduced by an American surgeon, the late Dr. William Baer, after his experiences as an army surgeon during the World War. But another, earlier army surgeon, Ambroise Pare, first advocated this method in the sixteenth century, Dr. Trueta states.

To another army surgeon, Pierre Percy, who studied bullet wounds, Dr. Trueta says modern surgeons owe "the first appreciation of the difference between wounds of entry and of exit, and of the characteristics of the wound track."

A method of treating war wounds, and their peacetime counterparts in automobile and industrial accidents, which was born out of the World War, proved its value in the Spanish war, in Dr. Trueta's opinion. He reports 1,073 cases treated by this method with only six deaths. The method, developed by an American surgeon, Dr. Winnett Orr, is known as the closed method of treatment of wounds of the limbs in which there is both a broken bone and torn flesh.

Science News Letter, July 20, 1940

ZOOLOGY

Rabbit-Sized Antelopes Headed for National Zoo

WITH a 700-pound pigmy hippopotamus as star of the passenger list, a rare and distinguished gathering of West African jungle animals is taking ship in Liberia, scheduled to arrive at Norfolk, Virginia, about July 20. Obtained by Dr. William M. Mann, director of the National Zoological Park at Washington, the collection will show America some species of Liberia's wild life seldom seen outside that country.

Included in the collection, which was obtained with aid of hundreds of natives, are antelopes no bigger than rabbits, rare crocodiles, big and little parrots, and several crates of monkeys.

Science News Letter, July 20, 1940

PUBLIC HEALTH

First Case In Oklahoma Of Relapsing Fever

A CASE of relapsing fever, serious tropical disease rarely seen in the United States, is reported by Dr. W. P. Neilson, of Enid, Oklahoma. (*Journal, American Medical Association,* July 13)

The case is the first ever reported in Oklahoma. How the patient got it is something of a mystery. The disease is caused by the kind of germ known as a spirochete and is generally transmitted to man by the bite of an infected louse or tick.

Dr. Neilson's patient, however, did not remember being bitten by any insect and did not show any signs on her skin of such a bite. She lives on a farm, but does no outside farm work where she might be bitten by ticks, and there are no rats or other rodents around to harbor the germs. She had not been away from her immediate vicinity and no foreign guest has visited the home.

She was cured of the ailment by the chemical, neoarsphenamine.

Science News Letter, July 20, 1940

IN SCIEN

PLANT PATHOLOGY

Chemical Found Effective Against Tobacco Disease

PARADICHLORBENZENE, a chemical now widely used in combating insect pests, has been found effective in preventing downy mildew, one of the worst diseases of tobacco, in a cooperative research project conducted by the Virginia Agricultural Experiment Station and Duke University.

PDB, as the compound is called for short, is introduced as a vapor over the seedbeds, which are covered with cotton sheeting to keep the vapor down during the period of fumigation. The odorous gas penetrates into the leaf tissues and kills the deadly fungus threads that are attacking them. At the concentrations used, the chemical is harmless to the young tobacco plants.

Associated in the research were J. A. Pinckard, Ruth McLean, F. R. Darkis, P. M. Gross and F. A. Wolf. Results will be published in full in the forthcoming issue of the technical periodical, *Phytopathology.*

Science News Letter, July 20, 1940

ANTHROPOLOGY

Europe's War Strikes Home To Indians—No More Beads

AMERICAN Indians face a bead shortage, the result of the European war.

Czechoslovakia, for years regarded by the Indian Service as the only satisfactory source of tiny beads used in Indian craftwork, has ceased sending bead imports, Commissioner of Indian Affairs John Collier has learned. A limited supply of these beads is on hand in this country.

Other beads on the market, including those from Italy and those made in this country, have never come up to Indian requirements, the Indian Service points out. Beads for Indian belts, purses, moccasins and other craft wares must be of even size, with smooth edges that will not cut the thread, an eye large enough to be easily threaded, and the beads themselves must be durable. Best Czechoslovakian beads for this purpose are of porcelain.

Science News Letter, July 20, 1940

CE FIELDS

PLANT PHYSIOLOGY

Plants Are Stimulated By Vitamin Treatments

TWO vitamins, already proved necessary for human health, are now shown in experiments to stimulate the growth of plants. One of the B vitamins, riboflavin, made eggplant grow faster and bigger, while ascorbic acid, or synthetic vitamin C, caused unusual gains in tobacco growth.

In the experiments reported by Dr. Raymond Dennison of the State University of Iowa (*Science,* July 5) the plants were grown in gravel and fed by nutrient solutions. When the vitamins were added increased growth was obtained.

Eggplants receiving riboflavin developed double-length stems with triple-weight tops. The leaves of the vitamin-treated plants were consistently coarser in texture, thicker and darker in color than those of the untreated plants. Tobacco leaf was more than doubled by the vitamin C additions.

These experiments recall the widespread use of vitamin B_1, or thiamin chloride, for treating plants, and the controversy as to whether this vitamin really aids plant growth.

Science News Letter, July 20, 1940

PHYSICS—MEDICINE

Gift of $200,000 Will Provide Cyclotron

CONSTRUCTION of a cyclotron, device for obtaining high energy particles of matter used in atom study, but in this case primarily for medical use, will begin soon at the University of Pennsylvania.

Dr. Thomas S. Gates, president of the university, has announced a gift of $200,000 from William H. Donner, retired industrialist, for the purpose. Three years ago Mr. Donner gave the University a similar amount to establish a department of radiology, in memory of his son.

In treating cancer, it is stated, two techniques will be used. In one, various chemicals will be subjected to the rays from the cyclotron and so made radioactive. Then they can be administered to the patient. In the second method, the patient will be directly subjected to a stream of neutrons, obtained by bombarding a plate of the metal beryllium. Because of the few facilities for medical use of a cyclotron now available, this possibility has only been slightly explored, and will, at the beginning, engage the principal attention of the University's scientists.

The new cyclotron will weigh 250 tons, and will equal the largest now in operation, at the University of California. With its completion, the University of Pennsylvania will become the first university in the world to have the two chief tools of atom smashing. A 5,000,000 volt electrostatic generator was installed last year by the department of physics.

Science News Letter, July 20, 1940

GEOLOGY

Greenland's Cliffs Made By Geological Revolution

GREENLAND'S towering cliffs, possible factors in strategy in later phases of this war, were prepared many ages ago by a geological revolution deep within the body of the earth, according to a hypothesis proposed in the science journal, *Nature,* by Prof. L. R. Wager of the University of Reading. (*Nature,* June 15)

The great and abrupt lift of the land and the depression of the adjacent Denmark strait, Prof. Wager suggests, were caused by a downward flow of the deepest parts of the rock material involved. Above it, an intermediate layer also flowed, becoming greatly thickened in one place and lifting the mass that has since become Greenland. Alongside this area it became correspondingly thinned, permitting the subsidence that is now the strait.

At the "hinge" between land and sea, the layers nearer the surface cracked under the strain, and the plastic magma from deep within flowed up, to form a swarm of wall-like "dykes" that have long been a puzzle to geologists who have studied Greenland's structure.

The total uplift, through the ages, amounted to more than ten miles, Prof. Wager calculates. Of course, the island never actually became that high, for erosion was constantly at work on the top as the mass was pushed up from the bottom. The present plateau of Greenland, which is still very high, represents today's balance between uplift and erosion.

Science News Letter, July 20, 1940

MEDICINE

Knock-Out Blow to Chin May Produce Brain Anemia

THE UNCONSCIOUSNESS that follows a knock-out punch to the chin or a blow elsewhere on the head may possibly be due to a short-lasting but complete brain anemia, Dr. W. W. Scott of Chicago, believes as a result of studies on changes in pressure within the cranium produced by blows on the head.

The "punch-drunk" state, Dr. Scott further suggests, may result from damage to the brain and nervous tissue caused by repeated short-lasting brain anemias produced by blows on the head. The anemic brain condition cuts off oxygen supply to the brain and this is known to produce serious damage to the brain tissue.

Because Dr. Scott's studies are of interest to physicians treating brain concussion caused by blows received in accidents as well as in the prize ring, the editor of the *Journal of the American Medical Association* calls attention to them in the issue for July 6. The studies were originally reported to the technical journal, *Archives of Neurology and Psychiatry.*

Science News Letter, July 20, 1940

AERONAUTICS

Diesel Airplane Engines Get Oxygen at Takeoff

STIMULATION of diesel airplane engines with oxygen just at takeoff may make possible widespread future use of such safer and more economical engines, Prof. Paul H. Schweitzer of Pennsylvania State College predicted following recent experiments.

Feeding oxygen into the intake air of a diesel engine increases its power output by 55% for a few minutes without undue strain, the tests showed. Airplanes usually require about a third more power for takeoff than for ordinary flight. Prof. Schweitzer suggested that oxygen boosting for takeoff might overcome the diesel's handicap of somewhat greater weight per horsepower when compared with gasoline engines. Diesels with lower fuel consumption and less fire danger have been used in many German and some American planes.

A 3000 horsepower transport plane would need about 160 pounds of liquid oxygen, costing less than $50, to supply an additional 1000 horsepower for two minutes required for takeoff.

Science News Letter, July 20, 1940