BIOCHEMISTRY

New Antibiotic

Penicillin-like substance, effective against germs of boils, tuberculosis and undulant fever, found in bacteria that cause bee disease.

➤ NEWEST addition to the rapidly growing family of antibiotics, or germ-stopping substances of the penicillin family, has been found in pure cultures of the bacteria that cause one of the most troublesome of bee diseases, American foulbrood. Discovery of the new antibiotic is announced by Dr. E. C. Holst of the U. S. Department of Agriculture. (*Science*, Dec. 7)

Dr. Holst was led to suspect that this bacterium might produce an antibiotic by the fact that honeybee larvae dead of the disease almost invariably contain this microorganism and no others, suggesting that the causal bacterium produced something that would keep competing species from growing. Test plantings of the foulbrood bacteria in growths of a considerable number of other bacteria proved this to be the case: the foulbrood bacterial growth would surround itself with a zone in which the other species could not grow.

Among the microorganisms that were thus prevented from muliplying in the presence of foulbrood bacteria were the germs of common boils (also the cause of food-poisoning in cream pastries); tuberculosis, both human and bovine strains; undulant fever; also a number of bacterial species that do not ordinarily cause disease.

Although the new antibiotic substance has not yet been isolated in pure state, some facts have been determined about it. It is soluble in water but not in the alcohols or other organic solvents. It does not pass through a membrane of cellophane or parchment, which indicates that its molecules are at least fairly large.

It can stand a moderate degree of heat, and can be sterilized by pasteurization without appreciable loss of potency. Age does not seem to harm it: foul-brood specimens four years old yielded active preparations. Glucose hinders its action, but ordinary cane sugar does not, nor does glycerin. It had some poisonous effects when injected into mice, but gave no evidence of toxicity when fed to them by mouth.

Dr. Holst states that experiments to determine possible use in the treatment of disease are in progress.

Science News Letter, December 15, 1945

INSURES COMFORT—The cabins of Pennsylvania Central Airlines Capitaliner planes are being lined with down-like glass fiber blankets to protect passengers from both noise and cold. The blankets are similar to those used during the war to provide sound and heat insulation for multi-motored bombers.

MEDICINE

Relief From Hayfever

New drug brings prompt relief in hives and hayfever. While not a cure, it may point the way to even better drugs for allergic sufferers.

➤ VICTIMS of two kinds of allergic suffering, hayfever and hives, may in future be getting relief from their misery by taking two or three pills daily of a new drug, it appears from studies reported by Dr. Earl R. Loew, of the University of Illinois College of Medicine, and by a group of scientists at the Mayo Clinic.

The new drug is known as benadryl. Its chemical name is beta dimethylaminoethyl benzhydryl ether hydrochloride. It was first made, for other purposes, by Dr. George Rieveschl, Jr., of the Parke, Davis and Company laboratories in Detroit. Dr. Loew and associates tested its action and degree of poisonous effect on laboratory animals and Dr. Loew, the Mayo Clinic group and Drs. A. C. Curtis and B. B. Owens of the University of Michigan have since tried it on human patients.

Benadryl is not a cure for hayfever or hives. Its action is to relieve the stuffy nose, smarting, watering eyes, itching and other symptoms of these allergic disorders. Hayfever patients presumably will have to take it daily during their seasonal bouts of suffering. Victims of chronic hives treated at the Mayo Clinic broke out again with bumps, swellings and itching when they stopped the drug, so apparently they also, including sufferers with angioneurotic edema, will have to continue taking the drug daily to be assured of relief.

Some asthma patients were helped by the drug, but others were not. The reason for this and various other features of the drug need further study, it is pointed out in the reports from the Mayo Clinic.

A wide margin of safety exists between the dose needed to relieve the patient and that which would produce serious toxic effects. Sleepiness, dizziness and a dry mouth may be felt after taking the drug but these symptoms quickly go away.

Relief of the hives and hayfever symptoms comes quickly, usually within 30 to 60 minutes after taking benadryl. The relief lasts for several hours, so that three doses daily may be enough.

Benadryl is believed to achieve its results because of an antihistamine action. Histamine is a chemical normally present in the body. It is believed that overproduction of this chemical causes the symptoms of hayfever and other allergies. Exactly how this happens is not yet known.

The development of benadryl, and of a series of other antihistamine drugs

which French scientists have been developing and investigating before and during the war, seem to point toward even greater future success in relieving allergic sufferers.

Mayo Clinic scientists reporting on benadryl are: Drs. T. W. McElin, Bayard T. Horton, P. A. O'Leary, F. M. Farber, G. A. Koelsche, L. E. Prickman, H. M. Carryer, H. L. Williams, G. B. Logan, and C. F. Code.

Science News Letter, December 15, 1945

ELECTRONICS

Locates Storm Areas

Static Direction Finder, using cathode tube similar to radar and perpendicular receiving loops, locates storms within a radius of 2,000 miles.

➤ STORM areas within a radius of 2,000 miles may be located by a new special electric equipment called a Static Direction Finder, which was used with success in the Pacific war theater, it is now revealed. The apparatus consists of a cathode-ray indicating tube similar to those used in radar and television, and two mutually perpendicular receiving loops and amplifiers.

For a long time it has been known that certain types of storms are accompanied by severe electrical disturbances, which, incidentally, are responsible for the crackling and grinding noises often heard by radio listeners. In the Static Direction Finders, called Sferics for short, these disturbances give a visual indication of a storm's direction.

An incoming static signal to the direction finder produces a straight-line flash on the face of the cathode ray tube. The angular position of this flash gives the direction of origin of the static crash. Several stations in a network taking observations at the same time on the same flashes can locate their source and spot the storm position within a 2,000-mile radius.

In its advance stages of development the direction finder was tested at the Army Air Force Center, Orlando, Fla. Although finding its first use in warfare, Sferics began as a scientific project at the University of Florida in 1934. At that time, Dean Joseph Weil at the college of engineering started work on tracking hurricanes by means of the static associated with them. Similar work was also undertaken on thunderstorms both in this country and abroad.

The U. S. Weather Bureau and the U. S. Navy soon became interested in the work and helped obtain funds and equipment to carry on the study. Apparatus built by the English National Physical Laboratory was secured through the Navy. A network of stations in Florida and Cuba was put into operation with improved equipment constructed at the University.

Eighteen of these Static Direction Finders saw action during the war. They proved of high value, Army officials state, in securing information of weather and bombing conditions over enemy territory, and in routing planes around storm areas.

Science News Letter, December 15, 1945

ASTRONOMY

Comet Friend-Peltier To Become Brighter

➤ THE COMET Friend-Peltier will pass nearest the sun on Dec. 17, according to an orbit computed by Dr. L. C. Cunningham, of Aberdeen Proving Grounds, and reported to Harvard Observatory Clearing House. This is the comet discovered by amateur astronomer Clarence Friend of Escondido, Calif., on Nov. 22 and independently observed by Leslie C. Peltier of Delphos, Ohio, two days later.

Indications are that the comet will become brighter than it was at discovery, when it was of the seventh magnitude, just below the limit of naked eye visibility. It is approaching so close to the sun in the sky, however, that it will practically be impossible to observe for several weeks to come. Its brightness after that time cannot be predicted with any certainty.

The present path of the comet is carrying it southward from the constellations of Corona and Hercules, where it was when discovered, into Ophiuchus and Sagittarius. It will pass the perihelion point in its orbit, when it will be nearest the sun, on Dec. 17, and after that time will be observable, if at all, in the southern hemisphere.

The apparent path of the comet as computed by Dr. Cunningham, when plotted on a map of the sky, swings in an arc shortly after the comet has gone south of the ecliptic. Probably the path of the comet through the latter part of December and the early part of January will nearly parallel the ecliptic, and the comet will take some time to get far from the sun. By then its distance from the earth will have increased considerably. At perihelion the comet will be about 18,000,000 miles from the sun but many times this distance from the earth.

Science News Letter, December 15, 1945

SCIENCE NEWS LETTER

Vol. 48 DECEMBER 15, 1945 *No. 24*

The weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St. N. W., Washington 6, D. C. NOrth 2255. Edited by WATSON DAVIS.

Subscriptions—$5.00 a year; two years, $8.00; 15 cents a copy. Back numbers more than six months old, if still available, 25 cents. Monthly Overseas Edition: By first class mail to members of the U. S. Armed forces, $1.25 a year. To others outside continental U. S. and Canada by first class mail where letter postage is 3 cents, $1.25; where letter postage is 5 cents $1.50; by airmail, $1.00 plus 12 times the half-ounce airmail rates from U. S. to destination.

Entered as second class matter at the post office at Washington, D. C., under the Act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

The New York Museum of Science and Industry has elected SCIENCE NEWS LETTER as its official publication to be received by its members.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., PEnnsylvania 6-5566 and 360 N. Michigan Ave., Chicago, STAte 4439.