

MEDICINE

New Potent Antibiotic

Preliminary trials show that it holds promise of conquering diseases which streptomycin and penicillin have not proved effective against.

➤ A GOLDEN-YELLOW DRUG, cousin to streptomycin but promising to conquer diseases which streptomycin and penicillin do not touch, was announced at the New York Academy of Sciences.

The drug is called aureomycin, the "aureo" part of its name coming from the Latin for gold, and the "mycin" showing that it comes from a kind of fungus, like streptomycin.

Aureomycin was discovered by Dr. B. M. Duggar of the Lederle Laboratories division of the American Cyanamid Company. These are the same laboratories that produced the new sulfa drug now being tried in cases of infantile paralysis.

The golden-yellow fungus drug is effective against germs of the staphylococcus family, such as cause eye infections, against some viruses and some germs called rickettsia. Q fever, Rocky Mountain spotted fever and both typhus and scrub typhus are among the diseases caused by rickettsias.

Trials of aureomycin on patients have been made in Boston, Minneapolis, at Columbia University, at Johns Hopkins in Baltimore and Gallinger Municipal Hospital in Washington, D. C.

"Excellent results" in treatment of patients with Rocky Mountain spotted fever have already been obtained with aureomycin, a group of Johns Hopkins medical researchers reported.

The members of the Hopkins group are Drs. Morton S. Bryer, Emanuel B. Schoenbach, Caroline A. Chandler, Eleanor A. Bliss and Perrin H. Long.

This group has also used the new drug to treat patients with urinary tract infections. Again, they report, excellent results were obtained.

"A valuable addition" to other drugs such as penicillin and the sulfas is their summing up of their nine months' experience with it.

Its first public announcement at the New York Academy of Sciences was followed by other enthusiastic reports from the physicians who have been testing it clinically.

Some of the patients treated for eye infections were physicians. These doctor-patients had had recurrent conjunctivitis, commonly known as pink-eye, for many years and had come to believe that no drug was any good for these infections. Aureomycin treatment was given to them by Dr. Alson E. Braley and Dr. Murray Sanders of Columbia University.

"They were emphatically enthusiastic about the drug and thought the cure was even more rapid than with penicillin," the Columbia scientists reported.

Aureomycin was effective in all staphylococcus eye infections, provided it was used over a period of several days, and produced excellent results in influenzal conjunctivitis.

All of a group of 25 patients suffering from another disease, lymphogranuloma venereum, were helped in varying degrees by the drug, Drs. Louis T. Wright, Myra A. Logan, Aaron Prigot and Lyndon M. Hill reported. These patients were treated at Harlem Hospital.

In eight cases of buboes, one form of this usually stubborn disease, all patients showed reduction in the size of the gland after four days of treatment.

"This was an event which in our experience over 24 years with several hundred cases of early lymphogranuloma has never occurred spontaneously in so short a time," the physicians declared.

They believe that the 25 cases represent infections with multiple strains of the virus causing the disease. The activity of aureomycin, therefore, may not be limited to a single strain.

Much of this work is still in the preliminary stage. But trials in Q fever, mixed

bacterial eye infections and a virus-caused venereal disease called lymphogranuloma venereum have reached the stage where the drug may soon be released generally for use in such ailments.

Aureomycin and the anti-polio sulfa drug are the two latest weapons that have been made available to doctors in the past decade. They promise to join the other sulfa drugs, penicillin, streptomycin, polymyxin, and chloromycetin in combatting infections.

Aureomycin should not be confused with the new anti-polio drug, Darvisul. It is not an antibiotic but a modified sulfa drug.

Science News Letter, July 31, 1948

CHEMISTRY

Penicillin Trade Names Becoming too Numerous

➤ "WE NOW OFFER five to one on P. O. B."

It may sound like the latest from the race track, but it comes instead from the editor of the *Journal of the American Medical Association* (July 17).

"P. O. B." is the trade name of a penicillin product. The journal editor, Dr. Morris Fishbein, says it's five to one doctors won't know the nature of the product from that name. Previously he offered, editorially, odds of eight to five that doctors would not guess the nature of a product called "Penioral."

The point of his editorial spoofing is that trade names for penicillin are becoming so numerous and confusing even doctors cannot keep up with them. In protesting a



AUREOMYCIN DISCOVERER—Dr. Benjamin M. Duggar, microbiologist at the Pearl River Laboratories of Lederle Laboratories Division, American Cyanamid Co., first isolated the fungus from which was obtained the new golden-colored drug.

trend to combine the name of the manufacturer with "cillin" he points out that there are almost 30 manufacturers, which offers almost 30 possible names for penicillin.

And here's our tip to anyone wanting to take up the five-to-one offer on P. O. B.: It should pay off on penicillin in oil and beeswax.

Science News Letter, July 31, 1948

METALLURGY

Ceramics in Jet Nozzles

High temperature metals are undergoing investigation in order to develop ceramic coatings which will enable them to resist the high heat of jets and rockets.

► MORE dependable ram jet, pulse jet, turbo-jet and rocket engines will result from investigations under way to develop ceramic coatings for high-temperature metals to protect them from the excessive heat in these devices used in high-speed planes, guided missiles and rockets.

The studies are being conducted by the National Bureau of Standards under the sponsorship and with the financial aid of the National Advisory Committee for Aeronautics. The first of them was with ceramic-coated molybdenum, and results now announced indicate that the oxidation of this metal is greatly retarded by some of the coatings tried.

Molybdenum is a logical metal for use in these high-temperature applications because it is available commercially in substantial quantities and it has the extremely high melting point of 4,750 degrees Fahrenheit. In order to use it at high temperatures in the presence of oxygen it must be protected against what otherwise would be a rapid oxidation.

Many high-temperature alloys have been developed during the past few years, but most of them begin to melt within the temperature range of 2,400 to 2,600 degrees Fahrenheit and, while suitable for some applications, are not for others. Of the metals having melting points greatly exceeding this temperature range, only platinum and iridium, melting at 3,180 and 4,260 degrees respectively, withstand oxidation at high temperatures without protection. Their cost, however, is prohibitive.

Other metals that have high melting points, but do not have good oxidation resistance, include titanium, thorium, zirconium, boron, molybdenum, tantalum and tungsten. The last three are of special interest from the standpoint of potential application in very high-temperature service. The first four have high melting points but below that of molybdenum, tantalum and tungsten have higher melting points, 5,160 and 6,100 degrees Fahrenheit respectively.

Preliminary tests have indicated that both tungsten and tantalum may be coated to protect against oxidation; however, the more complete tests have been made on molybdenum, not only because this metal is available in substantial quantities but

because there are comparatively large ore deposits in the United States. The coatings, which contain various combinations of such compounds as zirconium oxide, Florida kaolin, calcined kaolin and sodium nitrite, and methods of application to the metal, are described in a recent report of the National Advisory Committee for Aeronautics.

Science News Letter, July 31, 1948

MEDICINE

Neutrons Disappointing In Cancer Treatment

► NEUTRONS, the fundamental atomic particles which are so important in fission, have turned out to be less effective in the treatment of cancer than was once hoped.

Rather discouraging results from the only series of cancer patients treated with fast neutrons are reported by Dr. Robert S. Stone, of the University of California Medical School, San Francisco, in the *American Journal of Roentgenology and Radium Therapy* (June).

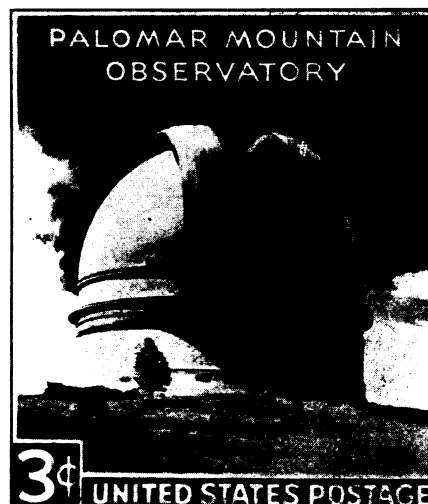
The radiologist said that the 249 incurable cancer patients in the series were treated after animal experiments showed the neutron beam from the cyclotron was highly destructive of cancer tissue, indicating that neutrons might help cancer victims who otherwise had no hope of survival.

A lack of any appreciable differentiation by neutrons on cancer and healthy tissue is given by Dr. Stone as the reason for the disappointing results.

Neutrons were effective in destroying cancer tissue, but Dr. Stone said that serious damaging after-effects also showed up some time after treatment. These after-effects were more severe than expected, there being no basis in either X-ray therapy or animal experimentation with neutrons to expect such after-effects.

The five-year survival rate of the incurable patients treated with neutrons was 7.5%. If left untreated, the rate would have been somewhat less than 5%.

Eighteen patients were kept alive for more than five years. All of these patients had severe late reactions, some of them so



PALOMAR COMMEMORATIVE STAMP—The central motif is an exterior view of the Palomar Mountain Observatory. It goes on first-day sale at Palomar Mountain, Calif., on Aug. 30. An initial printing order of 50,000,000 stamps has been authorized.

severe that the patients were partially incapacitated.

However, Dr. Stone added that experimental work should be continued to determine if there is some way the cancer-destroying power of neutrons can be eventually applied.

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CHEMISTRY

Plastic Containing Rubber Has Unique Qualities

► A LIGHT, hard, somewhat brittle resin, to which rubber has been added, has unique properties that make it suitable for use in football helmets, bowling balls and many industrial applications.

The new plastic, called tuf-lite and developed by the Goodyear Tire and Rubber Company, was announced to the American Chemical Society in Los Angeles, by H. R. Thies of the company's chemical division.

The raw materials for the new plastic are butadiene-styrene resins. These are plasticized with synthetic or natural rubber. The final product is at first soft and pliable, flowing readily. It molds cleanly, with little trimming necessary, and handles easily as long as it is kept warm.

The tuf-lite product is one of the toughest of the high-hardness rubbers, or plastics. It has high-impact resistance, low water-absorption, good tensile strength and excellent electrical properties. It is also readily machinable.

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