

MEDICINE

Penicillin vs. Syphilis

Expectation that both syphilis and gonorrhea may be conquered by penicillin, germ-killer from mold, results from apparent cure of four cases.

► **FIRST NEWS** that penicillin, the germ-killing chemical from a common mold, may prove the weapon that will eventually conquer both syphilis and gonorrhea was announced at the meeting of the American Public Health Association in New York.

Apparent cures of four cases of early syphilis by penicillin were reported by Dr. John F. Mahoney, Dr. R. C. Arnold and A. Harris of the U. S. Public Health Service's Marine Hospital on Staten Island. Other patients are now being treated, but in only four cases has enough time elapsed for the doctors to be sure the disease has been cured. The penicillin is injected into the patient's muscles every four hours, day and night, for nine days. At the end of the first seven hours of this treatment, the spirochetes that cause syphilis can no longer be found in the syphilitic sores. Blood tests are strongly positive at the start, negative by the 15th day. By the 100th day after treatment had been stopped, no trace of the disease could be detected in the patient's blood by any of the ten most delicate tests for this disease now known.

This speedy cure of syphilis can also be achieved, but not so safely, by the intensive treatment methods devised in recent years. These methods all depend on giving the patient massive doses of arsenic in some form and are consequently dangerous. Penicillin seems to be absolutely safe. No one using it has yet discovered any sign of a poisonous effect from this mold chemical. Some of the patients getting it for syphilis felt a little sick and feverish the first day but that, Dr. Mahoney explained, was due to the large scale destruction of syphilis spirochetes and not to the penicillin itself.

Gonorrhea is also yielding to attack by penicillin but that is not so surprising. The germs that cause gonorrhea belong very far down in the scale of living organisms. The spirochetes of syphilis are much higher in the biologic scale, close to the protozoa which are not far from animal forms of life. For a chemical to be able to kill such higher forms of life without carrying any threat to human life is so remarkable that Dr.

Mahoney and associates feel "stunned" by the results they have achieved. Only the fact that they have had long experience in the anti-syphilis fight and have facilities and ability for doing very precise work makes them feel that successful results of treatment in only four cases can be presented as cures.

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ASTRONOMY

New Exploding Star Discovered by German

► A NOVA, or new exploding star, has been discovered by the German astronomer, Dr. C. Hoffmeister. Located in the constellation of Aquila, the eagle, the nova was of the twelfth magnitude when discovered on Sept. 5.

The nova was found near Altair, the bright star in the constellation of Aquila. Dr. Hoffmeister reports that the out-

burst occurred between April 13 and May 2 of this year, at which time the nova attained the seventh magnitude.

Aquila is now visible in the evening sky in the southwest, but the nova is too faint to be seen without a telescope. Even at the time of its greatest brightness, the star was invisible to the naked eye, as only those of the sixth magnitude or brighter can be seen without aid.

Novae are not really new stars at all, but old stars which suddenly increase in brightness. The increase in light from minimum to maximum takes only a few days, but the decline is much slower. The cause of the explosion which creates this flare-up in the star has not been established.

News of the nova was telegraphed to Harvard College Observatory, clearing house for astronomical news in the Western Hemisphere, by way of Dr. A. Korff of Berlin, Dr. E. Strömngren of Copenhagen and Dr. K. Lundmark of Lund, Sweden.

Photographs in the Harvard collection indicate, according to Dr. Sergei Gaposchkin, that the nova reached its greatest height about April 28. Since that time it slowly declined in brightness from between the sixth and seventh magnitude to the twelfth magnitude.

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X-RAY CHECKER—A hand grenade will explode prematurely if the powder charge is less than the required amount. To prevent this, the General Electric Company devised this machine to check the powder charge in each fuse. When a bad fuse is found by an electric eye, a bell rings, a red lamp is lighted, a dab of red paint is placed on top of the bad fuse and a recording is made on a chart. Four thousand tubes pass through the machine in an hour.