PHARMACOLOGY

Clue to Antibiotic Source

➤ THE STEADY tippling of marauding armies in the Mediterranean basin from Caesar to Napoleon has led a pharmacy student of the University of California to the discovery that wine may be a source of germ-killing antibiotics.

In addition to opening up a new possibility in the search for drugs, the work may throw new light on an important phase of human history during the past 2,000 years.

The student, John Gardner, received the Kilmer Prize, a national award for outstanding undergraduate research in a college of pharmacy, at the meeting of the American Pharmaceutical Association in Salt Lake City.

Mr. Gardner got his idea from several sources. He knew the people in the Mediterranean and Near East had always had a high rate of intestinal infection—typhoid, paratyphoid, dysentery, etc. While in the Navy serving in the area in World War II, he witnessed the high incidence of such infections among U. S. service personnel in spite of modern health measures.

A keen student of military history, he observed that Roman armies seemed to have been well protected against such diseases. Their relative handfuls, policing hostile lands full of people loaded with intestinal infections, could not have stood heavy casualties from such diseases.

Mr. Gardner also noted that Roman soldiers drank wine under military orders. In one case the native wine of an area to be invaded was brought to Rome to condition invasion troops.

These things suggested to Mr. Gardner that wine might contain anti-bacterial substances which would protect against intestinal infections.

He put the idea to the test in his research, and came up with an agent which inhibits four representative species of bacteria—*escherichia coli, staphylococcus aureus, bacillus megatherium* and *pseudomonas aeruginosa.*

The inhibition is weak in comparison to penicillin. But the substance is still crude, and may gain strength with purification. The inhibition is in the test tube, and not yet in animals.

It is too early to say that anti-bacterial substances are present in wine in sufficient strength to have protected the Roman soldier from intestinal infection. It is also too early to say what antibiotics will be found in wine.

Science News Letter, August 29, 1953

PHARMACOLOGY

Unique Anti-Fungus Drug

➤ A UNIQUE drug is effective against serious systemic fungus infections, studies at the Los Angeles Veterans Administration Center and the University of California at Los Angeles Medical School have shown.

The new drug is called Nystatin. It is unique in that it is obtained from the pellicle formed by the growth of a mold rather than from cultural extracts as are other antibiotics. E. R. Squibb and Sons of New Brunswick, N. J., own the rights to the drug, which is not yet available commercially.

Biological cures of coccidioidomycosis in mice have been effected with Nystatin. The disease is ordinarily 100% fatal among the animals. The human disease, sometimes known as Valley Fever, has never responded to any drug and often results in a chronic lung condition similar to that of tuberculosis.

In some advanced cases among the mice biological cures were not effected, but in all the course of the disease was favorably altered by the drug. Clinical evaluations are now under way.

In recent years an increased need for fungicides has become apparent. In addition to such fungus diseases as Valley Fever, histoplasmosis, actinomycosis and blastomycosis, a new fungus problem has arisen, which may have been created by widespread use of antibacterial drugs.

Conducting the research were Drs. Victor Newcomer, Edwin Wright, Alvin Leeb, Josephine Tarbet and Thomas Sternberg.

Science News Letter, August 29, 1953

PHOTOGRAPHY

Fast "Ortho" Film Serves Photographers

➤ A NEW sheet film has been developed that permits unusually short exposures, that gives strong tonal rendition and that can be retouched without special negative preparation.

Described at the meeting of the Photographer's Association of America in Chicago, the film is especially suited for portraits of men and children. It is an orthochromatic film, a type insensitive to red light. Because of this quality, the new High Speed Ortho brings out delicate colors in faces not worked over with make-up.

The film was developed by Du Pont Company scientists to meet the photographer's need for an ortho film that is "fast," that is, one which permits shorter exposures than present ortho films require.

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• RADIO

Saturday, Sept. 5, 1953, 3:15-3:30 p.m., EDT

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Paul V. Smith, research chemist, chemical division, Standard Oil Development Co., Linden, N. J., will discuss "The Origin of Petroleum."

ENGINEERING

Heat Pump Developed For Mild-Winter Climates

➤ A NEW type of household air-conditioning-and-heating plant has been created for service in areas where winter temperatures are not extreme or of long duration.

Known as the heat pump, the electric device cools in the summer and heats in the winter. Westinghouse engineers of Hyde Park, Mass., who developed the machine, report it is more efficient than most air conditioning units, and that it is more than three times as efficient as other electrical heating plants in the winter.

Placed in the basement or utility room, the three-horsepower machine is housed in a cabinet that occupies 10 square feet of floor space and that stands six feet tall. The complete device weighs 1,400 pounds.

In operation the machine circulates filtered air through the house, dehumidifying and cooling the air in the summer, heating it in the winter. A special metering tube automatically switches the machine from air conditioning to heating service as the weather changes from summer to winter.

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SURGERY

Patients Cooled Down for Surgery, Then Rewarmed

➤ SURGEONS COOL down patients to slow their rate of living and allow direct operations on the heart with little interference by circulating blood. Then they warm them up again with electronic equipment devised for the purpose by the Canadian National Research Council in Ottawa.

In a Toronto General Hospital operation directed by Dr. W. G. Bigelow, special cooling blankets were used to drop the body temperature to 90 degrees Fahrenheit. Then surgery was performed on the heart while the blood did not interfere. The patient regained consciousness, and usual hospital procedures were resumed after diathermy and blanket heating, supervised by C. F. Pattenson and J. A. Hopps, of the National Research Council, brought the temperature to 94.5 degrees Fahrenheit in 40 minutes. For diathermy an 800-watt radiofrequency oscillator was used.

Rewarming methods are expected to be of use in the northern regions of Canada for use on frostbite and for resuscitation after exposure to severe cold.

Science News Letter, August 29, 1953