MEDICINE

Test for "Silent" Cancer By Vitamin A in Blood

➤ A NEW test for detecting "silent" cancers in time for successful treatment may come from studies at the Warwick Memorial Clinic of Washington, D. C.

Cancer of the stomach, which rarely shows symptoms in the early stages, is one kind that the new test might pick up. The test would be made by measuring the amount of vitamin A in the blood. If this is less than normal, the person would be given vitamin A either by special diet or capsules or both.

If he responded to this treatment and the amount of vitamin A in his blood came up to normal, it probably would mean he had been having a vitamin A deficiency due to poor diet. But if his blood did not show an increase in vitamin A content after treatment with the vitamin, it would mean he had cancer.

The test "looks good on paper but it may turn out to be a dud," Dr. Calvin T. Klopp, medical director of the clinic, warned.

Basis for the test is the finding some years ago by the late Dr. J. Abels of Memorial Hospital, New York, that 87% of patients with certain kinds of cancer, including stomach cancer, had blood low in vitamin A. In persons without cancer, 11% were found to have this low vitamin A level in the blood. Treatment with vitamin A did not bring the amount in the cancer patients' blood to normal, but did bring the vitamin level to normal in the non-cancer group. Dr. Abels' study was aimed at learning what was wrong in the body chemistry of patients with cancer. Dr. Klopp is using his finding from the opposite approach of trying to detect "silent" cancer in apparently healthy people.

The vitamin A study is one of 10 projects the Warwick Memorial Clinic will undertake with aid from the American Cancer Society. A grant of $50,000 to the clinic was just announced by Douglass Poteat, ACS executive vice president. The clinic is about to become affiliated with George Washington University School of Medicine.

Science News Letter, March 13, 1948

BACTERIOLOGY

Bacteria Are Paralyzed By Penicillin Attack

➤ PICTURES of what happens to bacteria attacked by penicillin have been obtained by two French bacteriologists, Drs. R. Tulasne and R. Vendrely, of the University of Strasbourg. They present their results in the British science journal, *Nature* (Feb. 28).

Drs. Tulasne and Vendrely first developed a chemical method for making visible the nuclei of bacteria, the very existence of which was regarded as doubtful a few years ago. Sometimes two or four nuclei appear in cells when growth and multiplication are rapidly taking place.

Using this technique on bacteria grown on food substances to which penicillin had been added, they found that the bacterial cells swelled up a great deal, and that the nuclear material appeared in several distinct masses, but that the cells did not divide. The bacteriostatic effect of penicillin therefore seems to be a paralysis of the cell's general protoplasm, rather than a stoppage of nuclear division.

Science News Letter, March 13, 1948

CHEMISTRY

Vitamin A Originates in Young Plants, Vegetables

➤ YOUNG plants and vegetables are the original source of vitamin A. This finding, which upsets previous scientific teaching on the subject, was made by Prof. Edith A. Roberts and Miss Mildred D. Southwick of the Vassar College department of plant science, Poughkeepsie, N. Y.

The electron microscope, modern scientific tool for studying things so small they cannot be seen even with high powered light microscopes, was used in the discovery.

Heretofore, the livers of fish were considered the main source of vitamin A. Plants were believed to furnish only a chemical parent of the vitamin, called carotene. The vitamin itself was believed formed in the liver from plant foods.

This belief is disproved by the Vassar scientists' discovery. Vitamin A, they showed, is first formed in the plant and there built into carotene and stored as such. So vitamin A is really the chemical parent of carotene, instead of carotene being the vitamin's parent chemical. Carotene can, however, be reconverted to vitamin A.

From the standpoint of human nourishment, this means that young green and yellow plants, which contain quantities of the vitamin itself, are the practical source of it.

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IN SCIENC

CHEMISTRY

New B-Group Vitamin Reported Discovered

➤ DISCOVERY of a new vitamin, believed to be a member of the vitamin B group, was announced by Prof. S. M. Hauge of Purdue University at a conference on feeds of the beverage distilleries in Cincinnati.

Existence of the vitamin was first suspected in studies on chicks. Later work leading to positive knowledge of its existence was done with rats. It is a growth factor for rats, chicks and a micro-organism, Lactobacillus arabinosis, but what human use it may have was not reported by Prof. Hauge. The vitamin was discovered in an animal food called distillers dried solubles which is derived from distillery wastes. This material and also condensed fish solubles may contain still other growth factors, or vitamins, Prof. Hauge said.

Science News Letter, March 13, 1948

RADIOLOGY

New Germ-Killing Lamp Doubles Previous Potency

➤ A RADICAL change in design features a new germ-killing ultraviolet lamp which is twice as effective in destroying bacteria and viruses in the air as previous types. It is a 36-inch-long tube which emits twice the usual amount of ultraviolet radiation.

The new lamp, developed in Bloomfield, N. J., by Westinghouse, not only produces more ultraviolet radiation for each watt of electricity consumed but it also provides an almost uniform level of radiation throughout its life. These radiations are generated by passing an electric current through the three-foot tube containing mercury vapor and other gases.

The glass used in the tube is a type with a remarkable resistance to what scientists call solarization. This is an invisible "suntanning" in glass which reduces the amount of bacteria-killing radiation. The rated life of the new lamp is 6,000 hours, or almost a year of normal usage. The previous average rated life of similar lamps has been 4,000 hours.

Science News Letter, March 13, 1948

E FIELDS

MEDICINE

Allergy Remedy Suggested As Viper Venom Antidote

➤ USE of one of the modern allergy remedies, benadryl, as an antidote for viper venom poisoning was suggested by Drs. J. S. Chowhan and D. P. Ghosh of Calcutta at the Indian Science Congress held in Patna, India.

Viper venom, they point out, acts mainly on the blood circulation system and the collapse that follows is like that caused by histamine. The anti-histamine action of benadryl led the Indian scientists to test it as an anti-venom drug in laboratory animals poisoned by Russell's viper venom. The animals were in collapse. But small doses of benadryl injected into their veins restored their blood pressure to normal and relieved the breathing distress they suffered.

Benadryl was effective in the animals whether injected mixed with viper venom or immediately after a big dose of the venom. The Calcutta scientists suggest using it by mouth or by injection into muscles or veins of human viper venom victims.

Science News Letter, March 13, 1948

IMMUNOLOGY

New Vaccines for Plague, Cholera Prepared in India

➤ NEW and more powerful vaccines against plague and cholera have been developed at the Haffkine Institute of Bombay, India. Preparation of the cholera vaccine in a casein medium (casein hydrolysate) was shown by Major-General Sir Sahib Singh Sokhey, director of the Institute, to a group of foreign scientists who had attended the Indian Science Congress at Patna.

A biological method for measuring the protective action of the cholera vaccine has been worked out and shows it to be 100 to 1000 times more powerful than the vaccine in use before.

The cause of the recurring plague epidemics in Bombay province has been traced to certain endemic areas with special conditions of temperature and humidity. From these areas infection is carried to adjoining areas when climatic conditions permit epidemics to occur.

By preparation of vitamins and various chemical remedies such as sulfa drugs in substantial quantities and sale of some of them to hospitals and government institutions, the Haffkine Institute has become self-supporting.

The manufacture of a polyvalent anti-snake venom serum against the venom of the four common poisonous snakes of India, the cobra, Russell's viper, the saw-scaled viper and the common krait, is also carried out at the Institute. The drawing out of the venom from the fangs of the snakes is one of the more spectacular activities of the Institute staff.

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GENERAL SCIENCE

Form New Society for Scientists in Industry

➤ A NEW scientific organization designed for scientists in industry and technical schools has been organized in New Haven, Conn., under the sponsorship of Sigma Xi, a national honorary scientific organization in American universities.

The new group, called the Scientific Research Society of America, is planned to fill a gap in scientific organizations, and extend the benefits of the university society to scientists in research laboratories outside institutions of higher learning. The Scientific Research Society of America will be modeled on Sigma Xi, and its activities will include local group functions, national lectureships, publications and grants-in-aid.

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GENERAL SCIENCE

French Atomic Scientist Named to UNESCO Position

➤ PROF. Pierre Auger, French atomic energy expert after whom cosmic ray bursts are called Auger showers, is the new head of UNESCO's natural sciences section, succeeding Dr. Joseph Needham, British biologist who is returning to his professorship at Cambridge University.

Dr. Clarence E. Beeby, New Zealand director of education will coordinate UNESCO's educational activities as assistant director-general while Prof. Pedro Bosch Gimpera, archaeologist, formerly dean of philosophy at University of Barcelona, and recently professor at the University of Mexico, is the new director of UNESCO's section of philosophy and humanistic studies.

Science News Letter, March 13, 1948

TECHNOLOGY

Diamond Tool Cuts Curves Into Spectacle Lenses

➤ A NEW diamond tool to cut highly accurate curves into spectacle lenses used in correcting poor eyesight decreases by half the time required in lens grinding.

This new optical machine is a development of the American Optical Company, of Southbridge, Mass. and functions automatically after a few adjustments. It generates both spherical and cylindrical curves on the lens surface in one cutting operation. The lens is then ready for final finishing operations.

In describing the operation of the machine, W. A. Bonin of the company said the lens is first imbedded in pitch covering a curved metal block attached to a spindle. A magnetic chuck on the machine locks the spindle in the correct position for the diamond-impregnated tool to cut the prescribed curves in the lens. The head of the machine holds the diamond tool and is rotated in an arc.

Science News Letter, March 13, 1948

ENGINEERING

Need No Wire Connections In Interlocking Battery

➤ TINY cells that interlock to form a miniature dry cell battery, eliminating the need for wire connections and the necessary soldering, were revealed by W. S. Allen, Electrical Division of Olin Industries, New Haven, Conn. When the cells are stacked together they interlock automatically.

The new interlocking cell, to be known as the Olin cell, was described by Mr. Allen as one of the principal advances in the manufacture of the modern dry cell battery. The tiny cells are made of plastics and are rectangular in shape. When stacked, they make a battery which occupies much less space than those of the usual cylindrical shape.

Each individual battery cell, regardless of size or shape, produces approximately one and one-half volts of electricity. Because of this, it has been possible to reduce the size of some of the new cells to almost wafer-thin dimensions without reducing voltage. They range in size from about half the area of a postage stamp to about one and one-half inches square, and from three-sixteenths to three-eighths of an inch thick. These batteries are designed primarily for use in hearing aids and small radios.

Science News Letter, March 13, 1948