

MEDICINE

Accurate Cancer Detection

➤ A NEW and promising aid in the detection of cancer was reported by a four-man University of California at Los Angeles scientific team to the American Association for the Advancement of Cancer Research meeting in Atlantic City.

Dr. Harry S. Penn, research associate in zoology at U.C.L.A., began the original experiment 15 years ago. The test is called the "Penn sero-flocculation reaction."

To make the test, a small amount of blood is withdrawn from a patient and the plasma separated out. This plasma is then mixed with the lipid fraction, a fatty-like substance derived from the liver of a patient who has died of cancer. If the plasma remains clear, the reaction is positive. But if it clouds up and becomes murky, the reaction is negative.

The serum reaction has been tried on more than 4,500 patients. Among these were 1,000 normal persons who showed a 99.5% negative reaction; and 830 known cancer cases that gave 98.6% positive reaction.

More than 2,500 cases of non-cancerous diseases and conditions were studied. Hospitalized cases of arthritis, liver disease, active tuberculosis, syphilis, pregnancy and others produced, on the average, approxi-

mately 13% "false positive" reactions.

The new reaction is not now available as a practical blood test for cancer. Much additional work remains to be done in the technical refinement of the reaction. The supply of the lipid fraction is extremely limited. All presently available lipid material is needed for future evaluations of the reaction. The Penn sero-flocculation reaction cannot now be substituted for diagnosis of cancer by examining tissue under a microscope.

Work on the new reaction began in 1935 in a basement room in Dr. Penn's Los Angeles residence. There it continued under difficulties for nearly 10 years. In 1944, however, the study became affiliated with U.C.L.A. and since then has been supported by the Jewish Fund for Medical Research, David R. Trattner of Los Angeles, the Veterans Administration and the U. S. Public Health Service. Approximately \$150,000 has been spent on the research to date.

Joining Dr. Penn in the research were: Dr. George C. Hall, director of the Tumor Control Center, Veterans Administration Facility, Los Angeles; Dr. Andrew Dowdy, professor of radiology; and Dr. Albert W. Bellamy, professor of zoology.

Science News Letter, April 29, 1950

MEDICINE

Chemical for Cancer

➤ SEARCH for a chemical cure for cancer has led scientists to investigate fungi; disease-causing viruses; male, female and adrenal hormones and synthetic chemicals from the textile industry.

One of these synthetic chemicals, called SK 1133, caused complete regression, or disappearance, of almost 100% of the highly malignant cancers called sarcomas, about 80% of carcinomas and about 40% of carcino-sarcomas in rats, Drs. Kanematsu Sugiura and C. Chester Stock of Sloan-Kettering Institute for Cancer Research, New York, reported at the meeting of the American Association for Cancer Research, Atlantic City, N. J.

A related chemical, SK 1424, was almost as effective. The value of both chemicals in treating animal cancers was definitely greater than that of nitrogen mustard.

The virus of Russian Far East encephalitis, cause of the brain disease sometimes called sleeping sickness, also showed striking anti-cancer activity, completely checking the growth of some animal cancers, though it was ineffective against others. The anti-cancer activity of the virus, however, is tied up with its disease-causing activity. The cancer in the mouse would be completely destroyed but the animal would always die of the virus infection. Study of this virus

was reported by Dr. Stock and Dr. Alice E. Moore.

Anti-cancer but also toxic to the test animals was a substance from a fungus, *Aspergillus fumigatus* 943, investigated by Dr. Stock with Dr. H. Christine Reilly.

More encouraging was the report that mice expected to develop cancer of the outer part of the adrenal gland can be protected from this fate by pellets of male and female sex hormones and adrenal cortical hormones. Search for a substance with strong tumor-preventing effect without being a "strong sex hormone" is continuing and the outlook, Dr. George W. Woolley of Sloan-Kettering reported, is hopeful.

Science News Letter, April 29, 1950

NUTRITION

Farm Animals Better Fed than People

➤ RECENT developments in feeds for America's farm animals have brought better diets to the barnyard than most people enjoy, the National Farm Chemurgic Council was told in Washington.

Progress in vitamin studies, particularly on vitamin B-12 in the so-called "animal protein factor," in wider use of amino acids

and in knowledge of mineral requirements of farm animals was described by Dr. H. J. Prebluda, nutritional chemist for New York's U. S. Industrial Chemicals Corp. He predicted that the coming decade would be called "the fortified fifties."

"If as much interest could be aroused in feeding our population as in baby chicks and hogs," said Dr. Prebluda, "we would not only be the best fed nation on earth, but we wouldn't worry over crop surpluses."

Dr. Karl D. Butler, farm counselor from Ithaca, N. Y., said much the same thing in a second speech: "Livestock are fed better, from the standpoint of nutrition, than are people."

Science has boosted U. S. food output even though total acreage of vital crops has dropped in the past two decades, he said. Among developments to come, he predicted much greater use of yeast fermentation methods for producing protein foods from present crop and forest wastes.

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MEDICINE

Disease Germs Tried In Battle against Cancer

➤ DISEASE germs are the latest weapon now on trial in the battle against cancer and cancer-like diseases such as leukemia.

A young man near death from leukemia got two more months of life after infection with a red blood-cell-destroying strain of staphylococci. During the extra two months he felt fine, showed no sign of disease and played tennis and football. Then the leukemia started up again and eventually he died.

Trials of this kind with a few patients dying of cancer or leukemia are under way at the University of California. Object of the trials is to learn more about the ability of some disease germs to stop cancer temporarily in some cases.

For more than 50 years there have been occasional cases of cancer patients recovering temporarily after getting some germ-caused disease. Now that sulfa drugs, penicillin and other antibiotics are available to control the infectious disease, the doctors feel they can start the infection in a few cancer cases for study of this situation.

The studies are under the direction of Dr. Michael B. Shimkin.

A few transient improvements have been achieved so far in a small percentage of the cases.

Seven children, fatally ill with acute leukemia, enjoyed temporary remissions and lowered white blood counts after virus therapy. Two of them, one in dying condition, staged rallies which lasted two or three months after they contracted chicken pox. Five others were given a cat panycytopenia—a virus-caused disease of cats which knocks out white blood cells. For a while it stopped the bleeding in some of the patients and made them feel better.

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