

MEDICINE

Virus May Cause Cancer

Powerful cancer-causing substance grows on chick embryos like other viruses, providing new evidence of primary cause of this disease.

► **DISCOVERY** of new evidence that the primary cause of cancer may be a virus is announced by Dr. Alfred Taylor, of the University of Texas (*Science*, Jan. 27).

He has developed a method of obtaining a powerful cancer-producing substance from cancer tissue. The substance seems to have all the characteristics of a virus. When injected into mice it produces tumors or cancers that start and grow more rapidly than transplanted cancers. Many scientists have long believed that cancers or tumors of man and other mammals, as well as a certain type of chicken tumor, might be caused by a virus or virus-like principle. But this is the first clear-cut evidence, apparently, that mammalian cancers have been produced by injection of material that does not contain cancer cells.

Yolk sacs of chick embryos, on which so many other disease-causing viruses grow, gave the clue to Dr. Taylor's discovery which may prove an important step toward solution of the cancer problem.

If the cause of cancer is a virus, it also should grow on chick embryo yolk sacs, he reasoned. So he implanted slices of mouse cancer tissue on the yolk sacs. These cancer tissues grew readily and after 12 days the yolk sacs were centrifuged and the fluid at the top was passed through a filter, like those used to filter other viruses.

This filtered fluid was injected under the skin of mice. Cancers rapidly grew at the sites of injection and smaller cancers were also found on internal organs.

By using eggs of fowl which have relatively long hatching periods, Dr. Taylor hopes that this method of attack may be applied to human cancers.

Even if such future experiments show that human cancer is caused primarily by a virus, it need cause no fear that cancer is contagious in the way that virus-caused diseases such as smallpox are. Dr. Taylor does not mention this point in his scientific report, but cancer authorities state that there is no evidence in the whole history of clinical and experimental investigation of cancer to

show that it is spread in this way.

The term virus, broadly speaking, means anything that goes through a porcelain filter, is capable of causing changes in human or animal bodies, and is capable of multiplying. Viruses, however, differ widely from each other in size and other characteristics. Smallpox and infantile paralysis viruses invade the body from without. If cancer is caused by a virus, it is believed more likely to be one already existing in the body which becomes active under certain conditions.

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MEDICINE

Outcome of Severe Burns Influenced by Temperature

► **RECOVERY** from severe burns is decisively influenced by the surrounding temperature during the first 24 hours, Dr. Robert Elman, Dr. Warren M. Cox, Jr., Dr. Carl Lischer and Dr. Arthur J. Mueller, of Washington University Medical School and Barnes Hospital, St. Louis, and the Laboratories of Mead Johnson and Company at Evansville, Ind., have discovered.

The laboratory experiments with rats which led to this discovery, believed important in the case of war burns, are reported in the *Proceedings of the Society for Experimental Biology and Medicine*. (December)

The most favorable environmental temperature for recovery from severe burns is about 75 degrees Fahrenheit. At this temperature the lowest mortality (32%) occurred among the rats in the experiments. All burned animals in rooms at 32 degrees and 99 degrees Fahrenheit died within 24 hours after receiving burns.

With respect to application of the findings to treatment of human burn patients, the doctors point out that the commonly used heat tent which increases the temperature around the patient above 75 degrees Fahrenheit will be harmful by increasing the mortality in severe burns. For burn patients in the tropics, which would include many in the armed forces, the findings suggest, the doctors state, that it is important to

lower the temperature of the patient's room.

First hint that the temperature surrounding the patient for the first 24 hours after being burned influences recovery came from studies of dogs with severe burns. An increased mortality among the canine patients was noticed when the temperature rose to 95 degrees Fahrenheit. This observation led to the experiments with rats.

Science News Letter, February 6, 1943

INVENTION

Air-Cooled Gloves Protect War Workers

► **AIR-COOLED** gloves now protect the hands of workers and improve the manufacture of landing lights for airdromes.

It all came about when the head nurse at the Westinghouse Lamp Division went to the beauty parlor. If an air blower could be used to cool her head while getting a permanent, she reasoned, why not air cool the gloves used by workers who handle hot glass lamps?

Now a low-pressure air hose extends into the gauntlet of each asbestos glove. This air-conditioning banishes the possibility of burns and workmen can handle the hot lamps with greater speed.

Added protection of workers also permits use of higher temperatures in the preheating process. This reduces glass breakage due to "shrinkage" and assures a good seal.

Science News Letter, February 6, 1943



SAFE—This young lady in a war plant can take the hot glass landing lamp from the preheating temperature to the sealing temperature without burning her hands. The gloves are air-cooled.