

MEDICINE

Develop New Cancer Serum That May Aid Diagnosis

Serum Is Prepared From Blood of Rabbits Injected With Aluminum Cream Containing Cancer Tissue

A SERUM that may aid diagnosis of cancer and may even have value for treatment of the malignant disease has been developed by Prof. William H. Welker and Dr. Lawrence S. Mann, of the University of Illinois College of Medicine.

Announcement of the serum is made to the medical profession in the *American Journal of Cancer* (July).

The serum gave positive reactions with the blood of cancer patients in a high percentage of cases. In cancer of the stomach the percentage was 57%. In cancer of the womb the percentage was 87%, or seven positive reactions in eight cases tested.

No cures nor attempt to cure cancer are mentioned in the technical report which describes the preparation of the serum. Prof. Welker, in a communication to Science Service, expressed the hope that the report would not have the "cruel" effect of raising false hopes in laymen who might expect more of the serum than can be guaranteed on the basis of present knowledge about it.

Blood tests with the serum were made by stratifying diluted human blood serum, from either normal persons or cancer patients, over the rabbit cancer anti-serum. A white ring developing at the zone of contact after a period of one hour indicated a positive reaction.

The serum is prepared from the

blood of rabbits injected with aluminum cream (aluminum hydroxides) containing ground and specially treated cancer tissue. This has the effect of mobilizing in the rabbits' blood the defensive troops called antibodies.

The particular accomplishment in preparation of the serum, which has been attempted many times before, was to cause mobilization of antibodies specifically capable of dealing with the protein of cancer tissue.

The difficulty in the past in preparing such a specific antiserum for cancer protein has been that when cancer cells were injected into rabbits, not only cancer-fighting antibodies but also antibodies for handling foreign blood were mobilized. This was because of the difficulty of separating cancer proteins from the blood proteins. As a result, the reaction of the serum with the blood of cancer patients might be a reaction with the blood and not just with the cancer proteins, if any were present in the blood. Consequently the previously prepared serums could not be used successfully in cancer diagnosis tests. The serum prepared by the Chicago scientists is specific for cancer protein, their tests show. It reacts only with cancer tissue or with the blood of cancer patients. It does not react with the normal tissues nor the blood from normal patients.

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POWERFUL

The tiny U-shaped piece is a new magnetic alloy developed at the Bell Telephone Laboratories, which is composed of vanadium, iron and cobalt, which will hold more permanent magnetism than any other commercial material. It can be machined, drawn and rolled. It is heat treated to develop its magnetic qualities, making it possible to weld pole pieces to the magnet and heat-treat both together.

the cream, went out into the fields near the National Institute of Health at Bethesda, Md., and pulled out poison ivy plants by the roots, plucked the leaves, and rubbed them over their skins. Neither volunteer suffered any ivy poisoning from this.

Dr. Schwartz and associates have no doubt the cream will be equally successful in protecting others against poison ivy if it is made and used according to directions.

It must be rubbed all over the face, hands, arms or any other part of the body likely to come in contact with poison ivy. After four hours, when the worker stops for lunch, it should be washed off with soap and water. Then after lunch, before going out into the fields or woods again, the cream should again be thoroughly applied all over the exposed skin, and again washed off at the end of the afternoon.

The reason for washing it off and reapplying it at the end of four hours is to make sure the skin is all covered and so protected against the poison ivy. Some of the cream is likely to rub off by the end of four hours and especially during the lunch hour.

In making the cream, and any drug-

MEDICINE

Anti-Poison Ivy Cream Made By U. S. Public Health Service

A VANISHING cream that gives protection against poison ivy has been developed by Dr. Louis Schwartz, Dr. Leon H. Warren and Frederick H. Goldman of the U. S. Public Health Service and the National Institute of Health. The formula for the cream, which is made by mixing either sodium perborate or potassium periodate with vanishing cream, will appear in a forth-

coming issue of the *Public Health Reports*.

Tests on nine volunteers showed that the cream protects against both the poison ivy extract, which is at least 30 times as powerful as any poison ivy leaf, and against the leaves and stems of the plant itself. Two of the nine volunteers, one the most susceptible and one medium susceptible to poison ivy, after rubbing on

gist can do so, 10% sodium perborate is used, or 2% potassium periodate. These two substances come in crystals which should be ground into powder first because the crystals will not mix well with the cream. The vanishing cream should be made first and then the chemical added, otherwise the chemical will react with other ingredients of the vanishing cream and the result will not be satisfactory. The cream should be freshly prepared at least once in two weeks to avoid deterioration.

The cream acts by filling the pores of the skin and forming a protective cover-

ing which prevents much of the ivy poison from penetrating the skin.

As perspiration comes in contact with the vanishing cream in the pores of the skin a soap is formed and in addition to washing the poison ivy off and out of the skin, the alkalinity of the soap liberates nascent oxygen from either the sodium perborate or the potassium periodate. This oxygen neutralizes the ivy poison. Tests made by Dr. Schwartz and associates showed that an alkali alone will not neutralize the ivy poison.

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FORESTRY

Forest Service Prepares For Worst Fire Season in Years

Conditions Worse Than Since 1934; Fire Fighters Experimenting With Parachutists Dropped on Fires

See Front Cover

THE U. S. Forest Service is preparing for the worst forest fire season in recent years.

Losses are not heavy so far because serious fires now raging in Oregon and Washington are mostly in logging slash and are outside the national forests. High, drying winds prevailing throughout the western part of the country during June, however, have made conditions favorable for fires to do terrific damage if they should happen to get started. The season is just about a month advanced by weather conditions.

Logging operations have been stopped in the area along the Columbia River below Portland, enforcing a law designed to reduce the fire hazard. It is not thought by experts that this action will affect the Government's defense plans. Although spruce was used extensively in airplanes ordered by the French, planes for American use depend more on metal. It is not known yet in Washington whether the area in which logging has been stopped is a spruce-bearing region, but it is not thought likely. Spruce usually grow in moister areas where fire danger is not so great.

This year, when fire conditions are worse than they have been for six years, the U. S. Forest Service is experimenting with new devices which, it is hoped, will greatly speed up the fighting of fires before they get beyond control.

Parachute troops, dressed in fire-resistant, padded suits are being trained to drop down on the fires from airplanes. With them is dropped food, fire-fighting equipment, and a portable radio. This radio, weighing only six pounds including antenna and batteries, enables the fire fighter to report back to headquarters within eight and a half minutes after he drops.

Parachutists are being taught to land in trees. This is not considered ideal for actual fire fighting. But since it might be necessary under some conditions, the men are being taught how. And they like it—call it a feather-bed landing. They carry a specially contrived rope device for letting them down from their perch and they are now able to get down in from eight to ten minutes.

Accuracy of "aim" has been perfected so that it is much greater than has ever been achieved with chemical dropped on a fire. First a ten-pound weight is dropped so that the wind drift can be observed. Then the parachutist takes off, using a special technique for leaving the plane so that he lands in an upright position that will avoid injury. Equipment is dropped separately on burlap parachutes.

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The drumming of the *ruffed grouse* was supposedly due to the bird's wings beating its body or a log, until motion pictures showed that the bird drums by fanning the air.

PSYCHOLOGY

Frustrated Forest Folk Set Fires for Excitement

MILES of forest fire running free in the South every year, destroying great treasures of woods and wildlife, are a burning signal of dangerous impoverishment in the lives of hundreds of thousands of American people.

Nine out of ten of these great, hazardous forest fires of the Southland are set by human hands, most of them deliberately.

The fire-setters would tell you that they burn the woods to kill snakes, to keep down the ticks, to destroy boll weevils. But the answer lies much deeper, it is revealed by a sociological - psychological study of the men and women in a typical forest-fire region just conducted for the U. S. Forest Service by Dr. John P. Shea.

The lives of these people are boresome. Families of as many as eleven persons live in three-room unpainted cabins, and their family income is about \$12 a month. They go undernourished and poorly clothed.

Psychologically, they are just as impoverished. Their education is equivalent to only third or fourth grade. Exhaustion of game and fish deprived them of their two main recreations. Music, even fiddling, is conspicuous by its absence. Only a few do basket weaving.

They whittle. They talk. And they just "set."

Living constantly on the verge of dangerous frustration, they crave the excitement of fire with all the unusual activity of those who try to put it out.

Remedies urged by Dr. Shea in the current *American Forests* include: Securing the cooperation of a few "Pappies" in a locality, make it possible for them to build a community center suitable for movies and dances. Supply it with soft pine sticks for whittling, also with cuspidors.

Provide simple games and contests such as horseshoe pitching and a shooting range. Organize 4-H clubs and local fish and game organizations. Let them feel that all these activities as well as any educational demonstrations are their own and not imposed on them by any external agency.

These Americans are willing to get their excitement in less destructive ways in they are available, and the forest fires may be looked upon as their unconscious signal for aid.

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