

## AGRICULTURE

# Radioactive Antibodies

**Fighting cancer with radioactive antibodies reported one step closer. Other radiomedicines show promising results in treatment of glandular cancers and lung cancer.**

By WATSON and HELEN DAVIS

► **FIGHTING CANCER** with radioactive antibodies seems a step nearer as a result of studies reported by Drs. W. F. Bale and I. L. Spar of the University of Rochester, N. Y., at the International Conference on the Peaceful Uses of Atomic Energy in Geneva.

The antibodies would not fight cancer directly in the way that polio antibodies, for example, fight crippling infantile paralysis. Instead they would serve to carry cancer-killing radioactivity to cancers located deep within various body organs.

These radioactive cancer-fighting antibodies may not even be antibodies in the strict sense. Antibodies are substances formed in the body to fight off foreign material, such as invading disease germs.

Antibodies also develop against foreign tissues, and attempts have been made in the past to develop antibodies to cancers with the idea that such antibodies, with radioactive iodine attached to them, would be carried directly to the cancer after injection into the body. So far, however, these studies have not reached the stage of application to human cancers.

The Rochester scientists were able to immunize rabbits against rat kidney tissue, so that the rabbits developed antibodies to rat kidney. Material from kidneys of these rabbits and from normal rabbits was labeled with radioactive iodine. This material, when injected into the veins of rats and rabbits, localized preferentially in the kidneys of the rats and rabbits.

When prepared in one way, over 10% of the radioactive iodine from the preparation was found in the kidneys of recipient rabbits three days after injection. The radioactive iodine-labeled kidney material from immunized rabbits localized in the small intestine as well as kidneys of rats.

The studies were made with assistance of R. Moore, D. E. Wolfe and R. L. Goodland, also of the University of Rochester.

## Radiodrugs for Tumors

► **PROMISING RESULTS** with use of radioactive chemicals in treatment of certain cancerous conditions of lymph nodes, popularly called glands, were reported for the first time by Dr. John H. Lawrence of the University of California, Berkeley, Calif.

The conditions are Hodgkin's disease and lymphoblastoma.

Radioactive phosphorus is "probably the treatment of choice," for selected cases of giant follicle lymphoblastoma, Dr. Lawrence told the conference.

About 10 out of 30 patients with the other ailment, Hodgkin's disease, have responded favorably to the radioactive phosphorus. Two are still living more than 15 and 20 years after the start of the treatment. Both had the advantage of diagnosis and treatment early in the course of the disease and both had X-ray treatment as well as the radioactive phosphorus.

Reported also for the first time is Dr. Lawrence's medical use of colloids of radioactive chromic phosphate and radioactive yttrium.

These colloids can be made so that the particles of radioactive material in suspension are of different sizes. When injected into a vein, they are picked up by scavenger cells of the body, known as phagocytes, and carried to certain organs in the body where they localize and give off radioactivity. The large particle colloids localize in liver and

spleen and the intermediate sized ones in the bone marrow primarily in rats, rabbits and mice.

Results from these in treating leukemia and in a condition of too many red blood cells, polycythemia vera, were no better than with radioactive phosphorus except in the unusual case, Dr. Lawrence reported.

## Radiogold for Cancer

► A **BETTER** attack on lung cancer may come through injections into the veins of a suspension of radioactive gold or radioactive zinc.

The radioactive gold and zinc particles in the suspension are about a thousand times larger than the colloidal size particles used in treatment of other forms of cancer.

As a result of this larger particle size, the radioactive gold or zinc is localized almost quantitatively in the lungs. The particles become little plugs, or emboli, in the capillary blood vessels of the lungs. Ordinarily, emboli plugging these small blood vessels are highly undesirable, but the radioactive ones have the advantage of theoretically being able to destroy cancer in the lung.

The method was reported to the Geneva conference by Dr. J. H. Muller of the University of Zurich, Switzerland.



**HEAT BARRIER ASSAULT**—Designed to exceed the record 1,650 miles an hour set by the Bell X-1A supersonic research airplane, the rocket-powered Bell X-2 is scheduled to begin flight tests soon at Edwards Air Force Base, Calif. Built particularly for heat barrier studies, the sweptwing plane is made of stainless steel to withstand aerodynamic heating and has many new design features.