

## MEDICINE

# X-Rays of Liver Possible Through Chemical Injection

## New Technique, Causing Organ to Show up Clearly On Photographic Plate, Aids Physician in Diagnosis of Case

PIONEER work in the use of a new method of diagnosing serious, often fatal, diseases of the liver and spleen was reported to the American Medical Association meeting at New Orleans. The new method detected conditions which could not be determined by any other laboratory or clinical methods now in use, Dr. Wallace M. Yater, professor of medicine at Georgetown University School of Medicine, said in discussing the result of a study made by himself and his associate, Dr. Laurence S. Otell.

In using the new test, a small amount of a solution called thorium dioxide sol is injected into the veins every day for three days. On the fourth day X-ray pictures are taken of the liver and spleen. Ordinarily these important organs do not show up well on the X-ray plate, but after the thorium dioxide injections the shape of both spleen and liver may be clearly seen. In this way physicians will be able to tell whether these organs are enlarged, whether there is fluid in the abdomen, whether such diseases as cancer, cirrhosis or syphilis of the liver are present, and whether a large mass in the left side of the abdomen is an enlargement of the spleen or a tumor of some other organ.

### Safe to Use

The substance which makes all this possible is a compound of thorium, a heavy metallic element related to radium. Thorium dioxide, however, has no radioactivity and is a perfectly safe compound to use. It was first investigated for this purpose by a German, Dr. Radt, of Berlin, in 1928. Two other foreign scientists have investigated it, but the Georgetown group is the first to try it in this country.

Being a foreign substance, the thorium dioxide is taken up by certain blood cells whose duty it is to fight infections and gather up foreign matter in the body. These cells are very highly concentrated in the liver and spleen. When they are full of heavy, opaque thorium dioxide, they and the whole organ show

up in the X-ray pictures, Dr. Yater explained.

Because these cells are also present in great numbers in bone marrow the new method may be used for diagnosing disease of this substance and of intracranial disease.

Most valuable of the older tests for determining how the liver is functioning is the icteric index, which indicates the presence of jaundice by showing the amount of bile pigment in the blood, Drs. William Egbert Robertson, William A. Swalm and Frank W. Konzelmann of Philadelphia stated at the same session.

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## ENGINEERING

## Huge Canal May Be Built Across Northern Florida

THE CONSTRUCTION of a great ship canal across northern Florida to save more than 800 miles, or three days sailing time on a round trip between North Atlantic and Gulf ports, is urged in a report made by Col. Gilbert A. Youngberg to the Florida Engineering

Society following a preliminary study.

He believes that the project is well worth a complete survey of the site by Army engineers. Col. Youngberg's study, made for the City of Jacksonville, was authorized by the 1930 River and Harbor Act. A special board of engineers is now making a study of the most practicable route.

The canal would be one of the world's largest engineering projects. It is roughly estimated that it would cost between \$125,000,000 and \$200,000,000. Vessels plying between Gulf ports and northern Europe would be benefited almost as much as those going to or from the Gulf and North Atlantic American ports.

### Immense Savings Possible

During 1929, Col. Youngberg said, 1,487 vessels made 10,341 voyages that would have profited by the canal. These ships are the larger portion of those sailing from the Gulf, it was pointed out, since only 1,971 vessels traded between ports on the Gulf and ports elsewhere.

The immensity of possible savings in tonnage the new canal will effect was emphasized by comparison with freight now carried by well-known inland waterways. The ton-mileage savings of the projected canal will exceed 20,000,000,000 statute ton-miles, it was stated.

"This is more than ten times the ton-mileage carried on that portion of the Mississippi River between St. Louis and New Orleans," Col. Youngberg said. "It is more than 13 times that on the Ohio between its mouth and Pittsburgh, and it is about eight times the ton-mile-



### ETERNAL SNOW IN CALIFORNIA?

*Looks like it, but the white banks are gleaming masses of pumice stone—the so-called Pumice Stone Mountain in northern California, east of Mount Shasta and southwest of the Modoc Lava Bed. Photograph by R. H. Finch.*