

orated and passed over a very fine porcelain clay known as kaolin. This breaks it up into ethylene gas, and this gas is mixed with the bromine to form pure ethylene dibromide. This final product of the treasure-from-seawater factory is packed in steel drums and loaded into the company's boat, the Ethyl Dow, for its short voyage up river to Wilmington and thence out to the wide world's highways and their endless appetite for ethyl gasoline.

The company's chemists and officers have made man's first direct profits out of sea water. They are as yet extracting only one of the many things it contains; for there are in sea water, besides bromine, such elements as gold, silver, copper, nickel, cobalt, lead, strontium, tin, phosphorus and many others, including even radium. All of these, some in known quantities, some in unknown, are daily pumped into the company's plant and allowed to flow back into the sea, simply because nobody has any idea how to extract them. It is like standing on the bank of a river crowded with all kinds of good fish, equipped with a net that will catch only herring. Herring are good—but it's a shame to see all the others getting away, since we have the river anyway, all bought and paid for. The Dow chemists feel that if even a very small quantity of any of these valuable elements could be extracted from the same water as a by-product, it would be just that much "velvet."

Naturally, their thoughts turn first to the gold, though that is present only in a few parts per billion, instead of about 70 per million, as the bromine is. Even if they got the gold, the bromine they are already sure of is worth twelve or fifteen times as much. Nevertheless, the age-old human hankering for the yellow metal asserts and reasserts itself.

And what though nobody has the least idea about how to go after it? Ten years ago nobody had much of an idea how to go after the bromine. Maybe, ten years hence—who knows?

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A Canadian scientist says: "In spite of the fact that weeds probably cost us more than plant diseases, animal diseases and insect pests combined, we left them to be the last of the pests of agriculture to occupy serious attention as a subject of scientific investigation."

MEDICINE

## Reports Improved Tests For Diagnosing Tuberculosis

**A**N IMPROVED test for tuberculosis, discovery that the disease is less prevalent in the United States than generally supposed, improvement in taking X-ray pictures of tuberculosis patients—these are the major advances in the fight against the white plague discussed at the meeting of the National Tuberculosis Association.

The improved diagnostic aid is a new kind of tuberculin used to detect the presence of tuberculosis. One difficulty with tuberculin tests in the past has been the fact that a number of different kinds of tuberculin were used. Not all of them were reliable. Tested with one product, a person might be found free from tuberculosis whereas a test made with another tuberculin might show the presence of tubercle bacilli in his system.

The new tuberculin, prepared by Dr. Florence Seibert of the University of Pennsylvania and the Henry Phipps Institute, Philadelphia, was described at the meeting by Dr. Esmond R. Long of the same institution. This tuberculin is considered more accurate and otherwise superior to any of the products previously used.

The Medical Research Committee of the National Tuberculosis Association has persuaded two drug firms to manufacture this product and hopes to have it universally adopted for tests. This would make the diagnosis of tuberculosis more certain. It would also enable health officials to determine accurately the amount of tuberculosis throughout the country.

Tuberculin tests sift out the persons who have tuberculosis from those who have not. But after the disease has been diagnosed further examinations must be made to determine the extent of the disease and the kind of treatment needed.

Most important in this respect is the X-ray picture. Here again wide variations in the way the pictures were taken made it difficult for physicians to compare pictures and judge the extent of the disease. The Medical Research Committee, under the chairmanship of Dr. William Charles White of Washington, has sponsored research to improve

X-ray picture taking and is trying to have the improved method here also made standard throughout the country.

Tuberculin tests are already being made on a large scale, Dr. Long reported. An entirely new view of the situation in the United States has appeared as a result.

Fewer persons are infected with the tubercle bacilli, with or without symptoms of actual disease, in the West than in the East. The number of persons so infected is steadily decreasing in both sections.

Contrary to general belief, very many adults are entirely free from tuberculous infection. It used to be thought that by the time a person had grown up, he had many tubercle bacilli or germs in his body, the result of picking up a few at a time from chance contact with tuberculosis patients. Because he got the germs in small, repeated doses, he developed a resistance to them which kept him from getting ill with tuberculosis. The tests now being made in schools and colleges all over the country indicate that adults generally are not infected with the tuberculosis germs.

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ASTRONOMY

## MacDonald Observatory Disc Not Damaged

**R**EPORTS that the glass disc of the mirror of the MacDonald Observatory has been damaged during manufacture at Corning, N. Y., are erroneous, Dr. Otto Struve, director of the MacDonald and Yerkes Observatories, has informed Science Service.

The incorrect report probably arose because it has been decided for greater safety to repeat the process of slow cooling or annealing, thus giving the glass the benefit of two annealings. The glass is of excellent mechanical quality, Dr. Struve said, and relatively free from bubbles and other defects.

The MacDonald Observatory is being erected in Texas by the University of Texas, and it will be operated jointly with Yerkes Observatory.

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