

PUBLIC HEALTH

# New Disease Is Reported; One Out of Five May Have It

## American Public Health Association Discusses Link Between Soot and Pneumonia, Prevention of Colds

**A** NEW disease, which may have affected as many as one out of every five adults in the country without their knowing what they had, came in for discussion at the meeting of the American Public Health Association in New York City.

The disease has the jaw-breaking name lymphocytic choriomeningitis. It is caused by a virus. In about half the cases it causes fever and symptoms similar to influenza. In the other half it affects the membranes that cover the brain and causes more severe symptoms, such as bad headaches, stiff neck, nausea and vomiting and even slight, temporary paralysis. So far, no death has been reported in a proved case of this disease.

It is difficult or impossible to distinguish this new disease by clinical means alone from another brain membrane inflammation, acute aseptic meningitis,

Drs. R. D. Baird and Thomas M. Rivers of the Hospital of the Rockefeller Institute for Medical Research pointed out at the meeting.

The disease was discovered and its virus isolated by Drs. Charles Armstrong and R. D. Lillie of the U. S. National Institute of Health. They found the virus while studying viruses from St. Louis encephalitis epidemic patients in 1934. Two years before this Commander Paul F. Dickens of the U. S. Navy Medical Corps had reported two cases of what looked like acute aseptic meningitis but which he thought might be another disease caused by a virus. Since then the virus has been recovered from patients and from monkeys, mice and other animals in this country, England and France.

Diagnosis of the disease, say Dr. Armstrong, Drs. Baird and Rivers and

others who have studied it, depends on examination of the spinal fluid and on a mouse protection test. This consists in mixing the patient's serum with the virus and injecting it into mice. If the patient had the disease, his blood would have antibodies in it that neutralize the virus. In that case the mouse would remain well. But if the mouse gets sick, it shows that the patient's blood had no virus-neutralizing antibodies, and therefore that he did not have lymphocytic choriomeningitis.

Dr. Armstrong and associates made this test on blood from nearly 2,000 well persons who were having routine blood tests for other reasons. They found that among the adults, almost 20 per cent. had neutralizing antibodies in their blood, although none (*Turn next page*)

PHYSICS-MEDICINE

## Super-Voltage X-Ray Doses Can Now Be Standardized

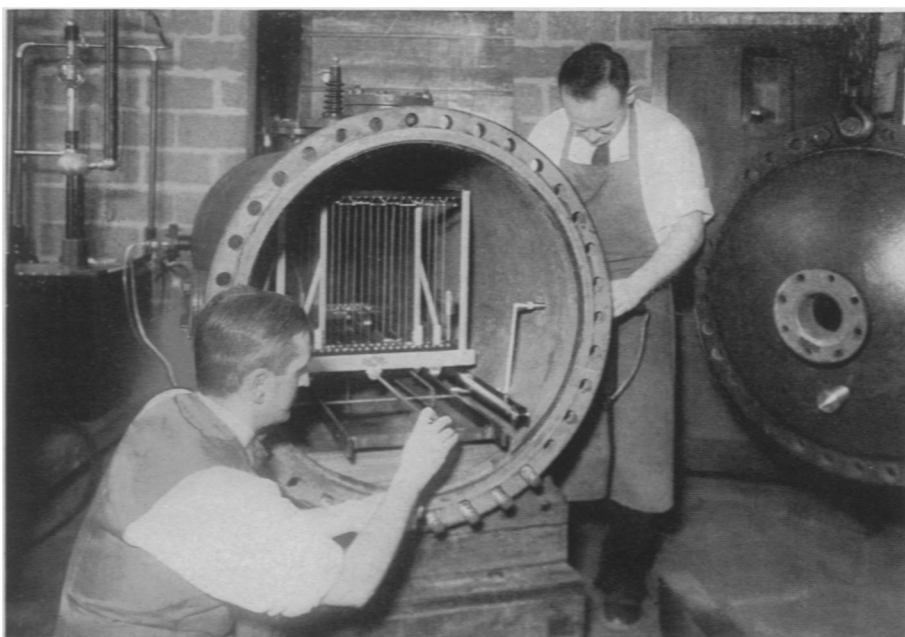
**T**HE super-voltage X-rays used in treating deep-seated cancers can be accurately standardized for the first time, the U. S. Bureau of Standards has announced. Measurements up to 400,000 volts have been made for such standardization by two scientists of the Bureau's staffs, Dr. Lauriston S. Taylor and George Singer.

The significance of the work, Dr. Taylor told Science Service, is that it takes the "chance" out of previous work in the field of high-voltage X-ray therapy. Previous experimenters have used 400,000 volt X-ray without knowing, truly, what dosage they were administering. They obtained different results with the higher voltage rays but were unable to know whether the effect was due to the characteristics of the more piercing radiation or to inequalities in X-ray dosage. The new Bureau of Standards work permits dosages of radiation up to 400,000 volts to be known accurately for the first time. Previously 275,000 volts was "tops" for such calibration work.

To measure the rays, a tube of special design was constructed and one of the world's largest pressure X-ray ionization chambers (shown at left) was built.

This research was necessitated by the building and operation, within the last 3 years, of several dozen X-ray plants operating at the higher voltages. Previously X-rays generated by voltages up to 200,000 volts were used in treating cancer and other serious diseases.

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**STANDARDIZING X-RAYS**

*Dr. Lauriston S. Taylor (left) and George Singer, Bureau of Standards experts, are shown with their machine for calibrating high-voltage X-ray machines. An ionization chamber is the core of the instrument which can measure for the first time voltages of 400,000. It takes the "chance" out of high voltage X-ray medical treatment.*