

# THE STORY OF A LABORATORY

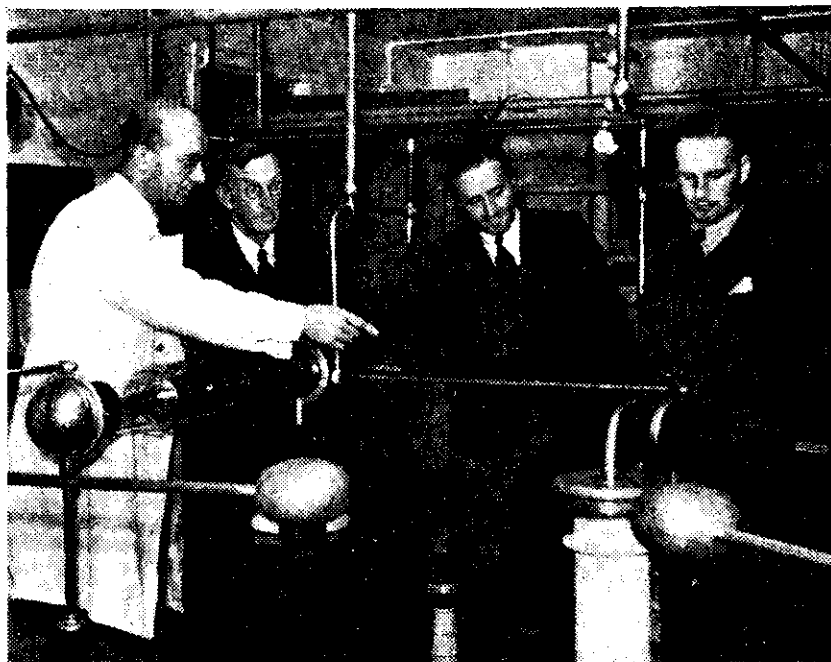
## Cancer Research in Christchurch

WITH the permission of the Canterbury Laboratory Committee of the British Empire Cancer Campaign Society, a broadcast describing some of the activities of the laboratory, and the apparatus used in it, will be heard from 3ZB on Sunday evening, July 20, at 5.45 p.m.

The Dominion X-ray and Radium Laboratory (as it is called) occupies a key position so far as clinical research into the treatment of cancer by irradiation is concerned. It is responsible for the calibration and standardisation of all X-ray therapy plant throughout the Dominion and in this not only provides a basis for therapeutic research in New Zealand, but enables work done here to be correlated with that done overseas. The action of X-rays and radium on living tissues is such that the success or failure of radiation treatment of cancer depends on the ability of the therapist to deliver a very closely defined amount of radiation to the exact site of the tumour to be destroyed. Too little radiation fails to affect the malignant cells; too much might permanently

damage the surrounding healthy tissue from which regeneration has to start. The accurate determination of the dosage to be applied is therefore of crucial importance, and the exact evaluation of the physical and technical factors in this treatment is of equal importance if further progress is to be made.

The laboratory is also concerned with the prevention of some forms of "occupational" cancers. Hundreds of pioneer X-ray and radium workers died as a result of over-exposure to radiation. Serious hazards in any work with high-energy radiation require that constant and careful checks be made of the dosage of harmful radiation received by such workers, and this checking is carried out for New Zealand by the Canterbury laboratory. Elaborate equipment has also been installed in the laboratory to provide a supply of "radon" gas. This heavy gas, which is continuously given off by a solution of more than a third of a gramme of radium kept in the laboratory, is pumped off, refined, and put into "applicators" which are used in clinics throughout the Dominion for the treatment of some forms of malignant tumours.



PART of the high-voltage generator at the Dominion X-ray and Radium Laboratory. This generator supplies 250,000 volts to the X-ray tube used for primary standards. From left: G. E. Roth (physicist in charge of the laboratory), Sir Hugh Acland (chairman of the Canterbury Division of the British Empire Cancer Campaign Society), Dr. F. C. Chalklin (chairman of the laboratory committee), and H. T. Schou, of 3ZB, who prepared the broadcast



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