

are available, have higher cancer death rates than Australia; but the records of seventeen others are better, and, in several cases, very materially better, than ours. This country suffers from a sufficiently horrible average cancer mortality; and, of all the States, only Victoria shows slightly worse figures than South Australia. If the matter could be placed on no higher plane than this, there would be ample reason for South Australia's vigorous participation in the world-wide campaign against this abominable and increasingly deadly disease. Dr. Hone's letter shows that this State has not done as much as, upon general principles, it should, or as much as, from the simple motive of self-protection, it might. Cancer research, as he very properly points out, is not only a question of theory, and a science of abstractions. In many of its most encouraging aspects, it is concerned with the very practical business of applying remedies, or at least of administering relief, to the suffering.

In this State, therefore, as elsewhere the study of the causation and prevention of cancer should proceed simultaneously with its treatment, by well-understood methods which even now yield wonderful results, and from whose further development much more is expected. In this direction, it is extremely to be regretted, even for our own sakes, that we should be so lamentably out of step with the march of progress. If the fact is due less to apathy than to ignorance, the movement initiated by Dr. Hone must have happy results. The Government, it seems, has first to be convinced of the urgency and importance of this question. At present, it seems rather in the mood to consider an economic difficulty, to the exclusion of a proper realization of a social menace. The Commonwealth's offer of a supply of radium for use at the Adelaide Hospital, has produced what, in other circumstances, one might be tempted to describe as a certain amount of haggling about the price. Some radium has at last been accepted temporarily, but not altogether without a show of reluctance. This fight against cancer is not wholly a matter for the Government, however; nor is it the Government only that must be galvanized. Two years ago, a committee was appointed by the Adelaide University, to supervise the experimental treatment of cancer by a new and hopeful method involving the use of colloidal lead. "This committee," says Dr. Hone, regretfully, "has not been functioning with any great activity." For these and other reasons, it is a matter for congratulation that the council of the University should have accepted Dr. Hone's excellent suggestion, recommended to it by the Faculty of Medicine, to set up a cancer treatment and research committee for South Australia. Only such a committee as that proposed can supply the force necessary to overcome the present official and general inertia, and bring South Australia into the front line of forces which are being directed against the stronghold of a cruel and implacable foe of all mankind.

# CANCER RESEARCH.

## Action by Government.

The Chief Secretary (Hon. H. Tassie) was questioned on Tuesday morning on the announcement in The Register regarding the decision by the Council of the University to adopt the report by the Faculty of Medicine recommending that a cancer treatment and research committee should be appointed to carry out a proposal contained in a letter sent to the Dean of the Faculty by Dr. F. S. Hone (Chief Quarantine Officer for South Australia). He said that an offer had been received by the Government from the Commonwealth Government to make available for use in Adelaide radium on loan in connection with cancer research work. Certain conditions had attached to the offer which involved so large an expenditure of money that the Government had been unable to comply with them. As a result of further negotiations on the matter, a tentative offer had been made by the Commonwealth to supply radium for a temporary period under less onerous conditions than in the previous proposal, but at the end of the temporary period the original scheme to be carried out. He was obtaining a report upon the matter, which had not yet been finally decided by the Government. He was afraid that without financial support from the public the larger scheme would have to be left alone, but he hoped that as a result of the negotiations now in progress it would very shortly be possible for the Government to obtain the use of radium as latterly suggested, and he trusted that it might lead to the establishment of some authority in the State to undertake more extensive research. That was all he desired to say on the subject until he received the report to which he had referred.

## ESTABLISHING RADIUM CLINICS.

The Federal Minister of Health (Sir Neville Howse), who came to Melbourne on Thursday and left again for Canberra on Saturday, said that arrangements were proceeding for the distribution of the Commonwealth's £100,000 parcel of radium (states The Melbourne Argus of Monday). Dr. Burroughs, who was in charge of the distribution, was now on his way to Townsville to supervise the establishment of a radium clinic in Townsville Hospital. After making similar arrangements at Brisbane, he would return south, and give his attention to Melbourne Hospital, where the present clinic would be extended. Adelaide and Hobart Hospitals would be dealt with in that order, and eventually Dr. Burroughs would visit various country hospitals for the same purpose.

## LONDON CANCER CONFERENCE.

LONDON, July 16. Delegates to the British Empire Cancer Campaign Conference number 360, including the dominions, 16 of whom are from Australia, which has the preponderant representation, with Drs. C. B. Blackburn, S. J. W. Darsey, T. P. Dunhill, L. M. McKillop, and C. L. Park.

REC. 18.7.28

## "ANATOMY OF THE CELL."

## Lecture by Professor Woollard.

Many popular beliefs in the pre-natal determination of sex were reviewed by Professor H. H. Woollard, Professor of Anatomy at the University of Adelaide, in an address at the Prince of Wales lecture room of the University on Tuesday night. On the subject of the sterilization of the feeble-minded, Professor Woollard said if this course were followed it would take 60 generations to reduce feeble-mindedness from one a thousand to one in ten thousand.

Professor Woollard described the anatomy of the structure of the cell, and touched upon the technique of micro-dissection, by means of which the cell itself and the structure it contained could be dissected. This construction, he said, had greatly facilitated investigation, for elements of the size of one-tenthousandth of an inch could be dealt with by means of it. The investigations of Mendel, a priest in Silesia, had been rediscovered. Mendel had formulated certain laws of heredity, which were now called by his name. The first proposition was that human beings inherited all their qualities as units. It was a startling idea that a quality like longevity should be inherited as a unit factor. It seemed to be so, and all sorts of things like fertility, colour, size, resistance to disease, abnormalities, and diseases, should behave as Mendelian units. Each of those factors was represented in the body by two units, or

genes, one coming from each parent. The two genes might be the same in kind, or they might be opposite—as one for tallness, and one for shortness, or both for the same thing. The essential point, however, was that when the germ cells were formed only one gene, and never two, entered the cell. That was known as Mendel's first law of the segregation of the genes. The second law stated that when the genes entered the germ cells, each did so independently. That also had been modified by recent work, so that it was now known that genes assorted themselves in groups. The group unit was a chromosome, and also was assorted independently. That independent assortment made the offspring a mosaic of the characters of both parents.

## Causes of Sex.

Speculations about the causes of sex, said the professor, had been many. Sex had been supposed to be due to diet, relative ages of parents, the vigour of the parents, and it had been supposed that the right ovary produced boys, and the left, girls. They now knew that sex depended on a chromosomal difference between male and female. When fertilization occurred, if the egg received the X bearing sperm, the female was produced, and if it received Y, the male resulted. A daughter received the X chromosome from the father, and the son received the X from the mother. In general it might be said that so-called sex-linked diseases were transmitted by the mother and that sons suffered from them. The question whether the changes occurring in an individual in his lifetime became inherited by his offspring had been hotly debated. Numerous experiments bearing on that question were discussed, and the lecturer said the answer could be confidently given at the moment that acquired characteristics were not inherited, and that maternal impressions could not be transmitted to the offspring. Karl Pearson, in his eugenics laboratory in London, had invented a mathematical method to calculate the mental and physical characteristics of offspring and parents. The net result of that work was to diminish the part played by environment, and to exalt that of inheritance. They, however, only knew one way by which the individual or the species could be changed and that was by variation in the chromosomes.

## Sterilization of the Feeble-minded.

The practical enforcement of selective breeding in the human race, proceeded the lecturer, was being forcibly argued. There was nothing to be said against persuasive eugenics. The statutory enforcement of eugenic ideas was more dangerous and many of those enthusiasts appeared to have little regard for human liberty. Compulsory sterilization of the feeble-minded had also been advocated. Despite horrible records, like that of the celebrated Jukes family, the majority of the feeble-minded turned up sporadically in good families. That was because feeble-mindedness was a recessive characteristic, and both parents had to carry the gene, though they themselves appeared to be normal. If they assumed that such a gene was uniformly distributed through the population, and that marriage was a random choice, calculations showed that it would take 60 generations to reduce the rate of feeble-mindedness from one in a thousand to one in 10,000 by sterilization. Another instance was the Nordic cult. Anatomists were agreed that there was a distinct variety of man called the Nordic race in north-western Europe. Exponents of the Nordic cult asserted that the race possessed all the excellences, that no other race had any good qualities, and that all great men had been Nordics. They even went so far as to assert that Jesus Christ must have been a Nordic. It was true that, pictorially, Jesus was always represented as being fair, but it was difficult to believe that he was not a Jew, and, according to Rendell Harris, he was short in stature. The evidence was not good enough to compel all men to march to the tune of "Gentlemen Prefer Blondes." (Laughter.)

REC. 19.7.28

## RESEARCH SCIENTISTS' CONFERENCE.

Workers in mathematics, physics, astronomy, and physical chemistry will gather in conference at Canberra from August 15 to August 18. The meeting is being arranged by the Australian branch of the Institute of Physics. Invitations are being issued to those who have published or are engaged upon original work in the subjects outlined. Papers are being contributed from the physical laboratories of the Australian universities and from the Solar Physics Observatory, Mount Stromlo, Canberra. Invitations to South Australian delegates and visitors are being issued through Professor Kerr Grant at the Adelaide University.

# FIGHTING CANCER

## Treatment by Radium

### SUPPLIES FOR ADELAIDE

Dr. B. H. Morris (Inspector-General of Hospitals) today said that it had been decided to accept on behalf of South Australia the limited and amended offer of the Commonwealth Government for the loan of radium for the treatment of cancer and other diseases. "The matter now only requires to be clinched by the signing of an agreement by representatives of the two Governments, which will deal with the arrangements for the custody and control of the valuable element," he continued. "When that is done the radium should be made available for use in Adelaide. The fine offer of the Commonwealth Government should enable work to be done in Australia with radium on a scale that has not previously been attempted. Dr. A. Burrows, an eminent English radium expert, has been brought to Australia by the Commonwealth authorities to demonstrate the latest methods of using radium. He is now at Toowoomba (Queensland), and will visit Brisbane, Melbourne, and Sydney before coming to Adelaide. I cannot say when the radium will actually come to hand, but it should certainly be received in the near future. The radium research work to be done under the supervision of the Adelaide University authorities will be performed in co-operation with the medical staff of the Adelaide Hospital. When Dr. Burrows visits Adelaide he will impart to those responsible for using the radium the latest practice as developed in England," he concluded.

ADV. 19.7.28

## AN EMPIRE CONFERENCE ON FORESTRY.

### FORESTRY.

Four weeks hence the Empire Forestry Conference will assemble in Perth, and already some of the delegates from overseas have reached Australia, including Major Furse, of the British Colonial Office, and Mr. R. L. Robinson, Technical Commissioner on the British Forestry Commission. The conference will be as representative of arboricultural science as either of the two already held, the first in Britain, and the second in Canada. As the delegates, comprising among others Lord Clinton (Chairman of the British Forestry Commission), Sir William Furse and Professor Troup (directors of the Imperial Forestry Institute), and Sir Peter Clutterbuck (formerly Inspector-General of Forests in India) will subsequently tour the Commonwealth, it will not be for want of skilled advice if our timber resources are not developed in future to their utmost capacity. Mr. Robinson's presence in the Commonwealth is particularly interesting, for he is a South Australian Rhodes scholar, and having, after a brilliant career at Oxford, given his mind and energies to tree-culture, and acquainted himself at first hand with afforestation methods in the leading countries of Europe, and having also during the war rendered such services in meeting the timber requirements of the British army as to have earned him the O.B.E., he was assigned an important position on the British Board of Agriculture.

Consultation with the experts of the Commonwealth is far from being the only object of the conference. The quickening of public interest in the subject which followed the Ottawa Conference five years ago has encouraged a hope that the experience will be repeated in Australia, and that our "forest consciousness," which has become rather dim of late years, will be rekindled by next month's gathering and the discussions in all the States which are certain to follow it. Such a revival of interest is assuredly very much needed, for in spite of its possession of 1,200,000,000 acres of forest lands the Empire has done little hitherto towards averting the world famine in soft-woods which Mr. Robinson says has now become an imminent peril. What has caused the dearth is the growing demand for soft-woods for the manufacture of paper