

MATTER, ELECTRICITY, AND ETHER.

THEORIES OF ATOMIC STRUCTURE.

The final of a series of three extension lectures on "Matter, Electricity, and Ether" was delivered by Professor Kerr Grant at the Prince of Wales Theatre, Adelaide University, on Tuesday evening.

Professor Kerr Grant stated that the Rutherford Bohr type of nuclear atom, i.e., a nucleus of small dimensions, but correspondingly large mass, positively charged with a number of negative electrons equal to the number of uncompensated positive electrons in the nucleus, explained all the properties of the hydrogen-atom.

The ordinary physical and chemical properties of atoms depended directly upon the electrons in the outermost ring or shell, and only indirectly on the nuclear charge.

The number in the outer ring might increase up to a certain limit—eight, in fact; but any attempt to increase this number made the ring unstable, so that the addition of one more electron resulted in the formation of an external ring corresponding to the mono-valent character of an alkali metal.

The problem of most interest for the future was perhaps that of the structure of the nucleus itself. The phenomena of radio-activity indicated that both helium nuclei ("Alpha" rays) and electrons were component parts of its structure.

The interesting possibility was thus opened up of effecting by artificial means a real transmutation of the elements, with conceivably a gain of energy enormously greater than was furnished by any chemical action.

I should be glad if you will, at your convenience, grant an interview to me and the Committee which drew up the accompanying report.

In accordance with the letter the Premier received a deputation from the University consisting of the Chancellor and Vice-Chancellor and two members of the Finance Committee, Sir George Brookman, and Mr. H. S. Hudd.

The Premier promised to place the subject matter of the deputation favorably before Cabinet.

PRACTICAL HIGHER EDUCATION.

Thoughtful South Australians will be greatly interested in the communications from the University of Adelaide relatively to the munificent bequest of the late Mr. Peter Waite to the cause of agricultural education.

A powerful case is formulated for additional Governmental patronage and assistance in the carrying out of the late Mr. Waite's far-seeing educational designs, among other noble University projects.

used as Mr. Waite intended. In the documents appended to the report it will be seen that the Director of Agriculture has classified under 14 heads the kinds of problem that can be investigated with immediate economic advantage.

—An Arboretum—

The University is required to maintain half the area of the Urrbrae portion of the estate as a public park. It has been decided to make this an arboretum, and to plant about six acres a year for the next twelve years.

—Private Endowments—

The situation would be adequately met if the Government were to grant a petition which the Council presented in 1920 and was then requested to repeat when the restriction in the University Act of 1874 became operative.

—Additional Income Required—

1. In order to complete the undergraduate schools in the University so that the future professional men of the State should be as well equipped as if they had been trained in Melbourne or Sydney, it was estimated in detail that an additional income of £20,000 was required.

—Additional Buildings—

2. In its request for additional buildings the Council pointed out that the Governments of all the other Australian States took this charge on themselves and that the Government of New South Wales had just set aside £300,000, and the Government of Victoria nearly as much, for immediate additions to their University buildings.

—Research—

3. There remained the matter of research, a duty on every University, and with a bearing of its own in a country whose resources are still undeveloped.

—Land Tax—

The Council takes this opportunity to recall another anomaly. No other University in the Commonwealth pays land tax.

bold. course, would be subject to the availability of suitably trained men to conduct the research under the direction of the professor.

FROM PROFESSOR HARVEY JOHNSTON. Veterinary entomological and zoological work which could be undertaken by the Zoology Department in connection with the Urrbrae Bequest.

FROM PROFESSOR CLELAND. The Department of Pathology can render assistance and co-operation in any veterinary investigations that may be undertaken under the Waite Bequest.

WAITE BEQUEST ADVANCEMENT OF AGRICULTURE CASE PRESENTED TO GOVERNMENT

The following letter has been received from the Premier (Sir Henry Barwell) to the Chancellor of the University (Sir G. J. R. Murray):—