cathode rays. They had the remarkable property of exerting mechanical pressure and of causing phosphorescence in many substances. The study of the discharge of electricity in vacuum had produced evidence that in those conditions matter was broken down, and among the disintegrations produced were negatively charged particles, microscopic as compared with the atom, and whose average speed was 90,000 miles a second. The study of the cathode rays should that when a stream of rapidly moving particles struck against a solid substance, not only was that substance heated, but it gave rise to a new radiation which had the property of penetrating solid bodies. These rays were first discovered by Rontgen in 1895, and were shown to arise from the fluorescent glass in vacuity—Crookes' tube. At first they were thought to be quite a new type of ray, and were shown not to be material particles like cathode rays to which they owed their origin. Later, however, Leue, and then Sir William Bragg and his son, found that the rays behaved like light rays. They were shown to have a very small wave length, which accounted for their penetrating power, as they passed through the interstices in so-called solid matter.

The work of Professor Bragg and his son gave a method by which the wave-lengths of X-rays could be measured, and it was possible to form a spectrum of the X-rays, just as a glass prism split up a beam of light in a set of ordered wave-lengths. Elements had been found to be capable of an arrangement in which each differed by one unit from its predecessor in the list. If atomic numbers of the known elements were determined, any missing number would represent an undiscovered element, and the total numbe: of different types of matter that could exist between the atomic weight limits of hydrogen and uranium had been shown to be 92. Uranium, the last element on the list, was discovered by Becquarel in 1896 to possess a new property, that of emitting a continual stream of radiations analagous to those discovered by Rontgen in the previous year. Madame Curie then found that the element next above the list to uranium was giving out some radiations. She and her husband discovered an element hitherto unknown, emitting radiations immensely more powerful than uranium. These they called radium. The energy evolved by an ounce of radium during its lifetime of 2,500 years was equal to that given out by burning 10 tons of coal. Referring to the difficulty of defining the atom, Professor Soddy had suggested to the Chemical Society that it could safely offer a prize of £1,000,000 to any member who could shortly and satisfactorily define the atom and the elements for the benefit and understanding of first year students of chemistry. Fortunately for chemistry, however, the definition did not matter—the laws governing chemical change remained sufficiently accurate for practical purposes, and, as Solomon said, "It is the glory of God to conceal a thing, but the glory of a King to search it out."

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THE DISCOVERY OF MATTER

LECTURE BY PROFESSOR HICKS.

On Tuesday evening, at the Adelaide University, Professor C. Stanton Hicks gave the final lecture of his course of extension lectures on "The Discovery of Matter," before a large audience. He mentioned that experiments in electricity in high vacuum had greatly added to the understanding of the relationship between ether and ponderable matter. It had been possible as the result of the observation of certain phenomena in such conditions to show that there must be "something" in what appeared to be a complete vacuum. The current was conveyed from one end of the tube to the other. Professor Goldstein had called that "something" the cathode rays. These had the remarkable property of exerting mechanical pressure and causing phosphorescence in many substances. The study of the discharge of electricity in vacuum had produced evidence that matter in those conditions was broken down. It was found that among the disintegration produced were negatively charged particles microscopic as compared with the atom, whose average speed was 90,000 miles a second. The study of the cathode rays showed that when a stream of rapidly-moving particles struck against a solid substance, that substance was heated, and it gave rise to a new radiation which could penetrate solid bodies. These rays were discovered by Rontgen in 1895, and were shown to arise from the fluorescent glass in vacuity—Crookes's tube. For several years they were thought to be a new type of ray, and were shown not to be material particles, like cathode rays, to which they owed their origin. Later, however, Lene and then Sir William Bragg and his brilliant son, found that the rays behaved like light rays. They were very small in wave-length, and this accounted for their penetrating power. They could pass through the interstices in so-called solid matter. The work of Professor Bragg and his son gave a method by which the wave-lengths of X-rays could be measured, and it was possible to form a spectrum of the X-rays, just as a glass prism split up a beam of light in a set of ordered wave-lengths. Known elements had been found to be capable of an arrangement in which each differed by one unit from its predecessor in the list. If atomic numbers of the known elements were determined, any missing number would represent an undiscovered element, and the total number of different types of matter that could exist between the atomic weight limits of hydrogen and uranium had been shown to be 92. Uranium, the last element on the list, was shown by Becquerel in 1896 to possess the property of emitting a continual stream of radiations analogous to those discovered by Rontgen in the previous year. Madame Curie then found that the element next above the list to uranium was giving out some radiations. She and her husband discovered an element hitherto unknown, emitting radiations immensely more powerful than uranium. These they called radium. The energy evolved by an ounce of radium during its lifetime of 2,500 years was equal to that given out by burning ten tons of coal. Referring to the difficulty of defining the atom, Professor Soddy had suggested to the Chemical Society that it could safely offer a prize of £1,000,000 to any member who could shortly and satisfactorily define the atom and the elements, for the benefit and understanding of first-year students of chemistry. Fortunately for chemistry, however, the definition did not matter—the laws governing chemical change remained sufficiently accurate for practical purposes. Some interesting illustrations were shown.

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Mr. T. H. Jones, the well-known Adelaide musician, has resigned his position as organist at Pirie-street Methodist Church, which he has held for many years, and has accepted a similar post in Perth, where he intends to settle. Mr. Jones, who did much for music in this State by his connection with the University, and during the time he was city organist, recently married Mrs. Johnson-James in Perth. The second wife is the sister of the first Mrs. Jones. It is understood that when Mr. Jones left Adelaide he had no idea of becoming a resident of Western Australia. He is now the organist of the Perth Presbyterian Church, with the choir of which the present Mrs. Jones has long been connected.

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THE INDUSTRIAL COURT.

RESIGNATION OF DR. BROWN.

ILL-HEALTH THE CAUSE.

It was announced in the Assembly on Tuesday that a letter had been received from the President of the Industrial Court, tendering his resignation, owing to ill-health.

Mr. Anthoney stated in the Assembly on Tuesday that there was a rumor that the President of the Industrial Court (Dr. Jethro Brown) had resigned his position as President of the Industrial Court. He asked if the rumor was correct.

The Attorney-General (Hon. H. Homburg) said a letter had been received from Dr. Brown, intimating that he desired to be relieved of his work. A portion of the letter stated:—"I find the work of the Industrial Court and the Board of Industry in my present state of health such that I regret that I must ask the Government to accept by resignation as President of the Industrial Court and the Board of Industry." He was sure members of the House regretted that Dr. Brown had found it necessary to take such a step. (Hear, hear.)

A Brilliant Career.

Dr. Jethro Brown was born at Mintaro in March, 1868. He was brought up on the land, and at one time he thought of adopting agriculture as a career; but fate in the shape of a schoolmaster intervened, and directed his aspirations along other paths. He was educated at the Stanley Grammar School at Watervale, the headmaster of which was Mr. Cole. The influence of that gentleman on his pupils was very great, and Dr. Brown, speaking of him later in life, said he was one of the greatest teachers he had ever met. After he left school Dr. Brown taught in State schools for a time, and afterwards went to Oxford, and from there to Cambridge. He won an Inns of Court studentship in 1889, being then in his 22nd year. A year later he graduated with double first-class honors in the Cambridge Law Tripos. Having eaten the required number of dinners in the Temple contemporaneously with his university course, he was called to the bar at the Inner Temple in 1891, and a year later was elected McMahon student of St. John's College, Cambridge. In 1893 he was appointed professor of law at the Tasmanian University, which chair he filled, along with that of modern history until 1900, although he was absent in Sydney in 1898 for a while as acting professor of law. He left Tasmania in 1900, and studied for some months at the Sorbonne in Paris. From there he received an appointment to the chair of constitutional law and history at the London University College. The following year (1901) he was made professor of comparative law at the University College of Wales, which position he retained until 1906, when he came to the Adelaide University as professor of law. He retained that position until 1916, when he was appointed president of the Industrial Court.

An Extensive Writer.

Dr. Brown has been an extensive writer on legal subjects, his "Underlying Principles of Education," and his "Austinian Theory of Law" having run into three editions. The former has been widely read in India, and has also been translated into Japanese. In 1900 the University of Dublin, in recognition of his work as author of "The New Democracy," conferred upon him the degree of Litt. D. He has written extensively for legal periodicals, among which may be mentioned "The Law Quarterly Review," "The Hibbert Journal," "The Judicial Review," "The International Journal of Ethics," "The Westminster Review," and the "Independent Review." From 1912 to 1914 Dr. Brown was chairmaan of the Sugar Commission, and he has at times been chairman of the Prices Regulation Commission and chairman of the Foodstuffs Commission. By virtue of his appointment as president of the Industrial Court he has been president of the Board of Industry and chairman of the Gas Commission.

Though admitted to both the English and South Australian bars, Dr. Brown has never practised as a lawyer. He was admitted as a practitioner of the local Supreme Court on April 20, 1912, while Professor of Law at the Univerity, and on that occasion the Chief Justice paid the following tribute to his attainments:—"This morning is marked by a striking reinforcement to the strength of the bar, which encourages those who, like myself, have been associated with the administration of justice for a good many years, to hope that its prestige and learning in this State will not be diminished in the coming years. I am specially gratified, Professor Brown, at your admission. You are South Australian born, and your academical career has rarely been surpassed. I cannot remember a member of the bar, either here or in England, whose student career was marked by higher achievements. I remember very well that the Lord Chief Justice of England, on the occasion of your call, said that what you had done as a student was a sure precursor of a distinguished career—a forecast that has been admirably verified. It is within my own knowledge that you have been a professor of five universities. To the great advantage of the Law School of the Adelaide University you have been at its head since 1906. My learned colleague and I are both glad to welcome you to the ranks of the bar. We know you will not be a general practitioner, but in great cases we may expect to have the assistance of your learning and research."

Dr. Brown has not been in good health for some time, and in 1923 he was granted six months leave of absence, during which he visited England. About 12 months ago he found it necessary to apply for leave of absence for three months, which was granted, and on a number of occasions recently he has been unable to attend the court.

Resignation Regretted.

The Attorney-General (Hon. H. Homburg) on Tuesday afternoon said he was sorry, on behalf of the Government, to hear of the doctor's unfortunate illness.

Mr. J. J. Daly, who has represented the employes in most of the cases before the Industrial Court and the Board of Industry, said:—"The resignation of Mr. President Brown creates a vacancy in the Industrial Court judiciary which will be extremely difficult to fill. He possessed such extraordinarily exceptional qualifications for the office that his loss may be justly described as a national calamity. Arbitration is of vital importance to the nation, but it is difficult to find men who, while appreciating its importance, are prepared to use their talents towards its advancement. South Australia was privileged to have a man—a jurist and economist—who stood out as probably the foremost judge in the Commonwealth industrial judiciary. His close attention to duty and his unswerving loyalty to his cause has apparently—temporarily, I hope—undermined his health. My sincere wish is that, relieved from the responsibilities of office, he will soon regain his former health and vigor, and that in the very near future he may be found laying down those sound progressive principles which have been up to now quoted with approval by wage-fixing tribunals in every part of the British Empire and of America."

The secretary of the Employers' Federation (Mr. G. Hebbert Boykett) said the retirement of Dr. Jethro Brown was to be regretted, especially as it was through ill-health. He had appeared before Dr. Brown as advocate for the Employers' Federation on a number of occasions, and also met him in conferences between representatives of employers and employes, over which he presided, and had always found him gentlemanly, competent, and highly courteous.

Mr. R. Frisby Smith, secretary of the Law Society, said that as a jurist Dr. Brown had served South Australia faithfully and well for many years, and many men in the profession to-day would remember him with kindly feelings as their professor and lecturer at the University of Adelaide. He had a world-wide reputation as a text writer, particularly on matters touching the principles of law and legislation. As President of the Industrial Court he conscientiously endeavored to settle many of the industrial problems which had arisen in South Australia. It was to be regretted that ill-health, the result of his arduous labors, had necessitated his retirement from the bench.

The secretary of the Trades and Labor Council (Mr. T. P. Howard) said he regretted to hear of the resignation of Dr. Brown. The learned judge at all times had performed his duties as President of the Industrial Court in a most able manner. His judgments were literary gems, which had been commented on all over the world. In his opinion Dr. Brown was the most able arbitration judge in the southern hemisphere. His judgments would stand as monuments to his wonderful talent. All things considered, it would be difficult to find a man of the same ability both as a lawyer and an author. He hoped that the illness of the doctor would be of short duration, and that he would live many years to enjoy the rewards of his labors. No doubt his illness had been brought about by his strenuous work in the court.

Mail 30-7-27

Sir Joseph Verco

Next Monday will be the seventy-sixth natal anniversary of Sir Joseph Verco, M.D., one of Adelaide's best-known and beloved physicians. Dr. Verco began the practice of his profession in this city half a century ago, and retired from practice some seven or eight years since.

The doctor was born at Fullarton. After attending the Adelaide Educational Institution (which was conducted by the late J. L. Young), and St. Peter's College, he proceeded to London University, where he took his degrees in medicine and surgery with great distinction, winning scholarships and four gold medals. Then he studied at St. Barthlomew's Hospital, where he was house physician in 1876 and midwifery assistant the following year, when he was made a Fellow of the Royal College of Surgeons.

For nearly 30 years Dr. Verco was Lecturer on Medicine at Adelaide University, and since 1915 he has been Honorary Lecturer. For a great many years he was honorary physician to the Adelaide Hospital, and the Adelaide Children's Hospital, and he is now honorary consulting physician to both institutions.

Sir Joseph was president of the first Intercolonial Medical Congress at Adelaide 40 years ago, and he has also been twice president of the British Medical Association (South Australian branch). For 18 years he was president of the Royal Society of South Australia, which he has always supported most liberally.

Conchology is his principal hobby. He is curator of mollusca at the National Museum on North terrace. The doctor was created Knight Bachelor in 1919.

x Mail 30-7-27

Expert in Forestry

Mr. Norman W. Jolly, who was born at Mintaro, South Australia, on August 5, 1882, was in 1904 the first South Australian Rhodes Scholar to Oxford. After graduating in science in Adelaide University he took his B.A. at Balliol College, Oxford in 1906 with first-class honors in physics, and the Diploma of Forestry the following year. He is an old Prince Alfred collegian. He was Director of Forests in Queensland for seven years, then a member of the New South Wales Forestry Commission of three for eight years. Subsequently he was Professor of Forestry at Adelaide University. Since October of last year Mr. Jolly has been Commissioner of Forestry in New South Wales.

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