

generosity. Unfortunately, no such munificent benefactor came to the help of the physics and engineering departments, and when their urgent need for more space for classrooms and laboratories had been placed before the Government of the day, it met with a sympathetic hearing. The result had been that the present structure was the first University building of which the Government had borne the whole cost. (Applause.)

### The Building Described.

As regards the building itself, the Premier observed the designs had been prepared by the Architect-in-chief and his staff in consultation with the professors of the two departments. The work had been carried out by Mr. F. Fricker, of Queenstown, and the cost of the building, including fittings, had been £50,000. The finished product reflected credit both upon those who designed, and those who had carried out the work, and the University now had an addition to its laboratories of which it might well feel proud, and which would bear comparison with those of any other University in Australia. (Applause.) The structure was a two-storied building, and the main block had a frontage of 311 ft. by a depth of 52 ft. It was built of brick with reinforced concrete floors, staircases, and so on, the top of the walls carrying a cornice finished in light colour and topped with a roof of red tiles, so as to be in harmony with the adjacent Darling Building. In the physics department provision had been made for a large lecture theatre to accommodate approximately 300 persons, and this had been equipped with fireproof bioscope room and lantern screen. There were also laboratories, apparatus, preparation, and research rooms, and workshops. A temperature room had been provided in the basement, and the staff and students had also been allotted rooms. There was also a smaller lecture room capable of seating about 60 students, and an optical room and optical laboratory had also been provided. Many of the rooms had been provided with special darkening apparatus which would totally darken such rooms when required. In the engineering department two lecture rooms, laboratories, workshop, surveying room and metallography room, drawing rooms, and a museum had all been provided, and a flat roof on one portion of the building had been constructed for the purpose of survey observations. Each of the two departments had a main entrance from the north of the building with offices, and so on, and the entrance halls had tiled floors and polished maple windscreen doors, glazed with bevelled plate-glass panels. Private rooms and laboratories had also been provided for the professors and lecturers connected with each department.

### Importance of Engineering.

The importance of engineering to the development of South Australia was obvious, the Premier went on. They covered a large area of 380,000 square miles, but unfortunately about 86 per cent. of that area has a rainfall of only 10 inches or less, and the importance of water conservation, saving every gallon of water that they possibly could, was fundamental to their progress. They could not possibly make use of the country without it. Then they must have railways and good roads and efficient means of transit and communication. They had large areas of country yet to be drained, and thousands of acres that might possibly be irrigated. Although they had not yet succeeded in finding good coal they had large deposits of brown coal that must be utilized in the future, and the problem of providing power at a cheaper rate for their growing industries was of first importance. They hoped that there were yet many mines to be developed, and there were certainly mineral deposits that were likely to be a source of wealth to them in the future if worked under the guidance of competent men. They had ample work for structural engineers able to design and construct the bridges, wharves, and buildings of all kinds required by their growing population. Then there were problems to be faced in electrical engineering. And for all these purposes they should be training their own men. It must be particularly pleasing to those who had the interest of Australia at heart to see that the work was being undertaken under the guidance of Australian or South Australian engineers. The work of railway rehabilitation had been largely in the hands of a South Australian engineer, and in connection with that work the Murray had been spanned once again by the strongest bridge in Australia and the second largest. The young man who had been the guiding hand was a son of Professor Chapman. (Applause.) They had plenty of talent among the youth of the State if the young men were only given the opportunity to gain the necessary knowledge and equip themselves for these tasks that must be done, and in providing these buildings it was the object of the Government to provide facilities for the young men of South Australia who had the energy and inclination to enable them to obtain an engineering education in their own State that would fit them to take leading parts in the great works of engineering required for the development of their own country. (Applause.)

### Long-felt Want Met.

The Commissioner of Public Works (Hon. L. L. Hill) stated that he naturally felt some pleasure at being present in view of the Ministerial offices he held, which had some connection with the building. He publicly thanked the University Council for their assistance in establish-

ing night lectures for school teachers. That would undoubtedly improve their efficiency. Only a few yards away had been erected a teachers' college, which would be a great aid in the improvement of their teaching staff. Their Technical Apprentices' College was in course of erection, and both these buildings had cost £200,000. The erection of the physics and engineering building was meeting a long-felt want. The Government had willingly voted £5,000 so that the building could be equipped properly.

### Scientific Advance.

In the long history of scientific advance, there had never been a time when the study of physics had been so ablaze with brilliant discoveries. From the realm of the infinitely great, as in astronomy, as in the realm of the infinitely little, as in the study of the atom, these discoveries had been extended with a zeal unmatched in any other age. It was a matter of pride for them to remember that in these great discoveries students of Australian universities had played no mean part. It was of special interest to know that among among the leaders in these discoveries, famous in all centres of learning in the world, were two men whom they might claim as their own—Professor Sir William Bragg, and his illustrious son, Professor W. L. Bragg. (Applause.) It was not inappropriate, also, that at this time, when the study of physics was at its zenith, the people of South Australia should become possessed of such a magnificent building to be devoted to the study of this great science. They extended to Professor Kerr Grant and his students all good wishes for the future. The matter of applying the discoveries of physics to the use of man constituted a great separate branch of scientific study, called engineering. The engineer counted his profession in some respects as one of the youngest in the world. It was also one of the most important. Consider, for instance, what the engineer meant to their own State—in water conservation, irrigation, mining, railways, and so on. They had every reason to be thankful that the selection of the site of their capital city was in the capable hands of an engineer. (Applause.) There was a fascination in the very names of the different types of engineers—the hydraulic engineer, who planned their great reservoirs and reclamation schemes; the civil engineer, who built their roads and bridges, tunneled the mountain, and spanned the river, and made rapid transport possible; the electrical engineer, who organized and controlled those great schemes of electric supply that meant so much to their comfort and convenience. The list could be multiplied. There was, for instance, the irrigation engineer, the marine engineer, the mining engineer, and so on.

### Angas Engineering Scholarship.

It was interesting to note (Mr. Hill continued) that one of the early benefactions received by the University had been one of £4,000 from the Hon. J. H. Angas for the purpose of founding the Angas Engineering Scholarship, the object of which was to "encourage the training of scientific men, and especially engineers, with a view to their settlement in South Australia." The scholarship was awarded every two years the scholar going to England or America for that period to gain further engineering education and experience. Eighteen awards had been made, and of these scholars, all but four were now in Australia. Dr. Duffield, the Angas Scholar of 1901, was in charge of the new Solar Observatory at Canberra. Five of the scholars were in South Australia, three as engineers in the Government service, and two as lecturers at the University. When the Angas Scholarship had been given first, the University had had to award it to men trained in arts or science, and they had to begin their engineering education when they had gone away. Now the award was made to men already trained as engineers, and the scholarship was utilized to enable them to gain experience abroad. The University of Adelaide, under Professor Chapman, had turned out many capable engineers in the past. With this great new school and equipment, they might confidently look forward to an even more brilliant future. The ambitious young men of South Australia whose thoughts turned towards this important profession were indeed fortunate in having this magnificent building and equipment placed at their disposal. The opening of these lecture rooms and laboratories in physics and engineering undoubtedly marked one of the most important forward movements recorded in the history of this University.

### A Triumphant Phase.

Professor Chapman moved a vote of thanks to the Premier and the Minister of Education. Their presence, he said, was a tangible indication that the Government extended its sincere sympathy to the council of the University in its work for the intellectual progress of the State. So far as the engineering side was concerned, that day marked a triumphant phase in a long struggle. They had been for long labouring under disadvantage with regard to accommodation and equipment, but the Government and the council had remedied that, and they now had a school which would compare favourably with those of the other States. (Applause.) It did not necessarily follow, however, that with poor equipment they had turned out poor graduates. They were proud at the way these graduates had held their own in all parts of the world. (Applause.) The young men coming on would have greater

facilities than their predecessors. The engineering school should work in close co-operation with Government departments because so much engineering work was undertaken by the Government. Some years ago men could go into a Government department, and without too much qualification, work their way up to the position of Engineer-in-Chief. That was not the way competent engineers could be trained to-day. They must have scientific as well as practical training. Fortunately, now a scheme had been arranged by which all the young men entering the engineering department of the State must take certain subjects, and pass certain fundamental examinations before they became eligible for the higher places in the service. (Applause.) That was a step forward, and he hoped as they progressed they would work in still closer co-operation and that the University engineering school would prove to be the main recruiting ground, as it should be, for the engineering offices of South Australia. The professor referred in eulogistic vein to the sympathetic assistance rendered in connection with the design of the building by the Government Architect (Mr. A. E. Simpson).

### Intolerable Old Conditions.

Professor Kerr Grant, in seconding, said that the conditions in the old building had become intolerable, and certainly exasperating. It had been impossible to do satisfactory experimental work. One result in the increase of the accommodation was that already they had four men doing post graduate work. The speaker referred to the growing importance and world-wide extension of physics. At the conclusion of the ceremony the visitors were entertained at morning tea in the new building.

### BRILLIANT FUNCTION.

#### Dinner at Town Hall.

The Adelaide Town Hall was the scene of a brilliant and successful function on Tuesday evening, when the Chancellor of the Adelaide University (Sir George Murray), the Vice-Chancellor (Professor W. Mitchell), and members of the Council, tendered a dinner to members of the staff and delegates from other States who have visited Adelaide in connection with the jubilee celebrations of the University. There were nearly 200 guests, including knights, members of the State and Federal legislature, prominent civil servants, members of the professions, and educationists.

The Chancellor, who presided, had on his right the Governor (Sir Tom Bridges) and on his left the Premier (Hon. J. Gunn). Visiting delegates who occupied seats at the Chancellor's table were Sir William Cullen (Chancellor of Sydney University), Sir Mungo MacCallum (Vice-Chancellor of Sydney University), Sir John McFarland (Chancellor of Melbourne University), Sir Henry Barraclough (Sydney), Professor J. R. Kay-Mouat (Singapore), and Professor R. S. Wallace (Melbourne). Also seated at the head table were Sir Henry Barwell, Sir Langdon Bouynton, Sir George Brookman, Sir Joseph Verec, Sir Josiah Symon, Sir Lancelot Stirling, the Commissioner of Public Works (Hon. J. L. Hill), the Chief Secretary (Hon. J. Jelley), the Attorney-General (Hon. W. J. Denny), the Commissioner of Crown Lands (Hon. T. Butterfield), the Lord Mayor (Mr. Wallace Bruce), the Ven. Archdeacon Whittington, the President of the Industrial Court (Dr. W. Jethro Brown), Professor W. Mitchell (Vice-Chancellor of Adelaide University), Professor E. H. Rennie, and Professor H. Darnley Naylor.

### Expressions of Loyalty.

The loyal toast was proposed by the Chancellor. It was "to our Gracious Sovereign and our most illustrious graduate—the King," and was most enthusiastically honoured.

He next proposed, "His Excellency the Governor." His Excellency, he said, was not only the representative of His Majesty in this State, but also an official visitor of the University of Adelaide. He (the speaker) was not aware of the duties of an official visitor, and he did not intend to enlighten His Excellency on the subject (laughter), but if he also felt inclined to enquire into those duties he could put him on to a book on the "Law of Corporations," which would bring him visions of delight—and he would not say they would be dreams such as, if DeQuincy had known of them he might have reverted from the narcotic drug, and a masterpiece of English literature might have taken a different form. His Excellency was endowed with literary gifts of a high order. (Applause.) He would be forgiven for saying so in his presence that he had never read anything more beautiful than the speech he made at the dedication of the soldiers' cemetery in Adelaide, no had he read anything more graphic than his account of the Battle of Waterloo, written for a magazine some years ago, and published in the local press last Waterloo day. If His Excellency would add to their obligations to him by writing an article on the powers and duties of an official visitor. (Laughter), he could assure him of at least one appreciative reader. Of His Excellency's career as a soldier, it was

hardly necessary to remind them. They had on no less an authority than Lord Allenby that he was one of the greatest cavalry leaders in the war. At the retirement from Mons to the Marne, he served on the headquarters staff of the Fourth Army during the return from Antwerp. He went to the United States with Mr. Balfour as military member of his delegation, and in the following year he headed the British war mission to the United States. On Monday he had paid the university the compliment of accepting an ad eundem degree, and the university was then able to claim the firm distinction of having on its roll of graduates the son of one poet Laureate in Alfred Lord Tennyson, and the nephew of another in Sir Tom Bridges. (Applause.)

On rising to respond, His Excellency was awarded an ovation. In the course of a happy speech, he said that when the Chancellor had bidden him kindly but firmly, to dine with him that evening, he felt sure there was a catch some where. It was extremely trying for a man of common clay to rise and speak to an assembly of such concentrated culture as was present that night. Continuing, he said the business of the jubilee celebration was now over, and they could relax. Even the Chancellor did not look as austere as he had earlier, and he was glad to see that he had dropped his battle axe (referring to the mace) behind him. (Laughter.) It was a great pleasure to see so many friends of the university present that night, especially those who came from over the border. (Applause.) was Dr. Johnson who said, "We must keep our friendships in good repair." How better could they do that than by making merry together? He thanked the Chancellor for the very grateful way in which he had proposed his health, and the gathering for the manner in which they had honoured it. He felt there must be some answer to the remarks of the Chancellor, but what it was, he (the Governor) could not think. (Laughter and applause.)

### "Parliaments of Australia."

The Vice-Chancellor (Professor Mitchell), in submitting the toast of "The Parliaments of Australia," said two important matters which were applicable at their own University had been discussed at the Universities' Conference in London. Had he been at that gathering and had the opportunity, he would have spoken of the history of the University of Adelaide and its policy during the last 50 years. The two matters discussed were the control and the conduct of the university and its financial support. The speaker instanced the splendid monetary assistance that was accorded many universities in America, and their phenomenally rapid growth, and gave one example in which a university had trebled its income in 10 years, and in 18 years had multiplied it by nine. That amount, he said, from the American point of view, that that university must have been justifying itself all that time. He added that 25 out of 30 universities in the United States were larger than the University of Adelaide in 1917. Referring to the support that the University had enjoyed from the Government, he said that the Adelaide University might have been a very great danger to the community. The doctors on North terrace were all men that the University had made, and the same applied to many of the other professions. What would the country have been, he asked, had the University not been equal to its pretensions, if it had produced all the professional men in the country in an inferior manner? He had the best reasons for saying that whatever Parliament might be in other respects, so far as the University of Adelaide was concerned, its members had not been merely party men or politicians, but in the deepest and best sense, true statesmen. (Applause.)

### Important Measures.

Sir Henry Barwell responded on behalf of the Federal Parliament. The Vice-Chancellor, he said, had referred to the assistance which his Government (when he was State Premier) was able to render to the University. That assistance was very slight, but it had been limited by the financial resources of the Government. He was comparatively new to the Federal sphere, and he was diffident of speaking upon any matter which might be considered to be of a controversial nature. There were no doubt some guests present that night who pinned their faith to one political party, and some to another. Again some might say, "A plague on all your parties, we will have none of them." However, he thought that there were some matters with regard to Parliament, and the Government of the country with which they would all concur, regardless of party ties and feelings. He was sure, for instance, they would agree that in the Prime Minister (Mr. Bruce) they had a man of transparent honesty, strength of character, depth of conviction, and of virile patriotism. (Applause.) He was wholeheartedly devoted to the interests of his country, and was in every sense worthy of the name of Australian. He was, moreover, a strong Imperialist. No man had a greater knowledge of the mission of the British Empire, nor a higher faith in its destiny. They would have in him an able and worthy representative at the Imperial Conference, to attend which he would leave Australia shortly. (Applause.) Proceeding, Sir Henry said the Federal Parliament had just concluded a session which had been