Chair of English Literature.

Another great benefaction they had received, the Chancellor said, was the sum of £12,000, presented by Mrs. George Arthur Jury, for the endowment of a chair of English literature to bear the name of her husband. It must not be supposed that English literature had been neglected within the University. One of the original professorships founded by Sir Walter Watson Hughes was devoted to English language and literature, but in conjunction with mental and moral philosophy. Although they were not incompatible with each other, it was beyond the power of any one man to teach both subjects effectively. In order to relieve the professor they assigned English literature to the professor of modern history. This was known to be a makeshift, but it was the best expedient they could devise at the time. Now Mrs. Jury's donation had removed their embarrassment. They had endeavored to secure Mrs. Jury's son, who took a very high degree at Oxford, as the first occupant of the chair, but, to their regret, he declined the invitation. They had been most fortunate, however, in securing the services of Dr. Archibald Strong, associate professor in the University of Melbourne, the distinguished son of a distinguished father, and the University was to be warmly congratulated. (Applause.)

A Year of Progress.

Minor gifts of an additional sum of £300, making £1,000 in all, for the endowment of the John L. Young scholarship for research, from old pupils of the Adelaide Educational Institution, and of £50 to provide a memorial to the Rev. Dr. Jefferis, one of the founders of the University, were also most gratefully acknowledged. The generous provision made by Parliament in 1920 of a further £20,000 a year, to which he alluded twelve months ago, had relieved the pressure upon them in various ways, and enabled them to extend the usefulness of the University. They had created a chair of zoology, which, in the occupancy of Dr. Harvey Johnston, one of the most brilliant investigators of biological problems that Australia had produced, would no doubt be of inestimable benefit to the agricultural, horticultural, and pastoral industries of the State. (Applause.) There had been appointed lecturers in physics, mathematics, geology, and physical chemistry, all of them possessing high qualifications. Dr. Gray, lecturer in physics, he regretted to say, had been obliged to resign on account of ill-health, but they hoped he would soon have completely recovered.

Buildings and Land.

In regard to buidings, the Chancellor said the fine block presented by the family of the late Mr. John Darling for a medical school, in memory of their father, was expected to be ready for occupation by the beginning of next session. A new lecture theatre was in course of erection for the anatomical department, a new chemical laboratory to accommodate 100 students had been completed, and four new teaching rooms had been added to the Conservatorium building. The need of more land was still much felt, notwithstanding the further grant of four acres that was made by the Government last year. They had yet to erect the engineering and physics laboratories, for which a vote of £10,000 was passed by Parliament in 1920. There was also a desire to house the department of Zoology in a manner worthy of its importance, and they required a site for the erection of a Union building, which would bring the students into closer contact, and to some extent compensate for the absence of residential colleges. (Applause.) A design prepared for the Union by the University architect (Mr. Bagot) incorporated a memorial to the students who gave their lives in the war, a feature which would make it an object of general interest to every member of the University. Funds for the building would be raised by the Graduates' Association, and already towards the estimated cost of £25,000 over £5,000 has been contributed by a few subscribers. The need of more land had been sympathetically recognised by the Government. There had been obstacles to contend with in the fact that the land to the north of them was devoted to other interests, which could not at present be disturbed, but the Government had promised to give them another six acres on the lower level, between the land at present held and the river as soon as it was available. For that he desired publicly to convey to the Government, through the Commissioner of Public Works, whom he was glad to see present, the most grateful thanks of the University. (Applause.) The ground would be invaluable, as it would enable them ultimately to carry out some of the plans which for the time being they were obliged to defer. Another matter in which the Government had been of great assistance was in undertaking to work a dental department at the Adelaide Hospital. Most of the money required for the purpose was presented by the British Red Cross Society at the suggestion of Sir Joseph Verco. Their obligations to Sir Joseph since his retirement from active practise could not be adequately acknowledged. (Applause.) Not only was he Dean of the Faculty of Medicine, but he had also undertaken the duties of Dean of the new Faculty of Dentistry. The first fruits of that faculty would appear that day when he would have the pleasure of conferring the first degrees in dental surgery to be awarded by the University of Adelaide.

The Chancellor closed with a sympathetic reference to the death of Drs. B. Poulton and J. M. Ennis, who, he said, rendered eminent service to the University in their day. The names of both would be borne in kindly and grateful remembrance.

Sir George Murray then conferred the degrees and diplomas.

The Dean of the Faculty of Law (Professor Coleman Phillipson) presented for the degree of Bachelor of Laws:—Jack P. Cartledge, Aileen C. Ingleby, Sidney J. Melville, Joseph W. Nelligan, Baden P. Pattinson, Francis E. Piper (Stow scholar), Charles A. Sandery, Dorothy C. Somerville, B.A., Lloyd Tolley, and Kevin L. Ward.

The Dean of the Faculty of Medicine (Sir Joseph Verco) presented:—For the degree of Doctor of Medicine—Frank H. Keare, M.B., B.S. For the degree of Master of Surgery—John Le M. Kneebone, M.B., B.S. For the degrees of Bachelor of Medicine and Bachelor of Surgery—Harold R. Branson, Donald C. Cooper, Eric F. Gartrell, William Gillillan, Alan T. Britten Jones, Brynmor Beveridge Jones, Charles F. Michell, William R. Tonkin, Clarence G. Wells, Alan H. White, Howard W. Florey (in absentia.)

The Dean of the Faculty of Dentistry (Sir Joseph Verco) presented, for the degree of Bachelor of Dental Surgery—Thomas D. Campbell, Hurtle T. J. Edwards, John L. Eustace, Arthur P. R. Moore, John A. O'Donnell, Robert J. B. Smith.

The Dean of the Faculty of Arts (Professor Wilton) presented, for the ordinary degree of Master of Arts—Alexander C. V. Melbourne, B.A. (in absentia). For the honors degree of Bachelor of Arts (classics)—Edna M. Grosvenor. For ordinary degree of Bachelor of Arts—Paul C. Beaumont, Robert E. Cameron, Leslie G. W. Caust, Edith Cleggett, Alexa B. Cock, Percy C. W. Eckersley, Adela L. Flint, Maisie I. O. Gault, Kathleen de B. Magarey, Robert B. Pocock, Jean W. Southcott, James S. Thomson, B.Sc., Dorothy C. Walsh, Eleanor E. B. Wemyss, Doris M. West, and Hugh D. Simpson, B.Sc (in absentia). For the degree of Master of Arts, ad eundem gradum—Thomas Slaney Poole (University of Melbourne), and Francis S. Wylie (University of Cambridge). For the degree of Bachelor of Arts, ad eundem gradum—Joseph Swayne (National University of Ireland), and Edward B. Woods (University of London), both in absentia.

The Dean of Faculty of Science (Professor Sir Douglas Mawson) presented:—For the honors degree of Bachelor of Science—Mathematics, Herbert W. Nietz, M.A., Josiah W. Statton. Botany, Beatrice J. Murray, Edith D. Nobes. For the ordinary degree of Bachelor of Science—Gilbert G. Poole, Geoffrey Samuel, Edward A. Thrum, George E. Emerson (in absentia), and Samuel A. McKay (in absentia). For the degree of Bachelor of Science ad eundum gradum—Gilbert H. Dutton (University of Wales).

The Dean of the Faculty of Applied Science (Mr. H. W. Gartrell) presented:—For the degree of Master of Engineering—Robert H. Chapman, B.E. (in absentia). For the degree of Bachelor of Engineering—Ernest J. Bert, Rudolph W. A. Cox, Edwin F. Cresswell, Wesley H. James, B.Sc., George D. Mudie, Gilbert G. Poole, James C. Stobie, Leonard J. C. Wigan, Ronald M. Wigg, and John C. Roach (in absentia). For the diploma in Applied Science—Ernest J. Bert, Rudolph W. A. Cox, Edwin F. Cresswell, Wesley H. James, B.Sc., George D. Mudie, Gilbert G. Poole, Leonard J. C. Wigan, Ronald M. Wigg, and John C. Roach (in absentia).

The chairman of the Board of Commercial Studies (Mr. J. R. Fowler) presented for the Diploma in Commerce—Harold S. Adamson, Thomas F. Brady, Leslie G. W. Caust, Claude A. V. Daniel, John E. Dermott, Ainslie De L. Francis, Israel Golovsky, Allan W. McLean, Alma K. Marshall, and Walter V. Thyer.

The annual address was delivered by Professor Chapman, whose subject was "Engineering and the University." A full report appears under another heading.

ENGINEERING

ITS BEARING ON HUMAN PROGRESS.

ADDRESS BY PROFESSOR CHAPMAN.

A scholarly address, finely delivered, was that of Professor R. W. Chapman on the occasion of the annual commemoration of the University of Adelaide in the Elder Hall on Wednesday. The subject was "Engineering and the University." Professor Chapman, who was cordially received, said:—

Engineering is the Cinderella among the professions. You will remember that Cinderella was not only the youngest among the sisters, but she it was who was the maid-of-all-work while they got all the education and all the fine clothes and went out to balls and parties, until the happy time arrived when she married the Prince. And so from the very beginnings of universities it was thought right and proper that they should undertake the training of lawyers, physicians and surgeons, clergymen, teachers, and philosophers. All of these belonged to professions which were recognised as deserving of that training in knowledge and culture that only the universities could give, but for the men who were to be engaged in the practical work of building roads and bridges, reservoirs and canals, and otherwise administering to the physical wants of the people, the universities for a long while had no place.

It seems rather strange that this should have been so, because if we go back far enough we find that the smiths, the workers in iron, who were the forerunners of the modern engineers, occupied a place of great importance in all primitive communities. They supplied tools for the carpenter, spades and hoes for the farmer, and the keys, bolts, and ironwork for the castle. The community depended upon them for the weapons of the chase and for the weapons of war. They made the bills and battleaxes, the tips for the bowmen's arrows, and the swords and spear-heads for the men-at-arms. "More important than all, they forged the mail-coats and cuirasses of the chiefs, and welded their swords, on the temper and quality of which life, honor, and victory in battle depended." There is small wonder then that in Anglo-Saxon times the person of the smith was protected by a double penalty. He was treated as an officer of the highest rank, and awarded the first place in precedency. After him ranked the maker of mead, and then came the physician. In the Royal Court of Wales he sat in the great hall with the King and Queen, next to the domestic chaplain.

The Art of the Smith.

A story is told of a Highland clan whose smith committed some act of robbery on a neighboring clan, for which his execution was demanded. The chief, however, explained that he could not afford to dispense with the smith, but he generously offered to hang two weavers in his stead.

But the art of the smith, in those days and for long afterwards, was purely empirical. It could be successfully learned and practised by men who could neither read nor write. It had no basis of scientific knowledge. With the growth of requirements due to the development of large towns, some members of the great Smith family became manufacturers, as at Sheffield and Birmingham; others enlarged the scope of their activities to include more of what we now understand by engineering work. Masons became bridge-builders. But the fountains of science, from which the young engineering giant was to be nourished, were as yet unknown at the time when the first universities were established. At the University of Paris the four faculties were theology, law, medicine, and philosophy, which were represented as the four streams of learning that were like unto the rivers of Paradise. But in this Paradise science had no part, and of practical applications of science there could be none. A well-known definition of civil engineering states that it is "the art of directing the great sources of power in nature for the use and convenience of man." As a broad definition this would be difficult to improve upon, and it is obvious that until science had developed far enough to be able to enunciate the laws governing the forces of nature it was impossible to have anything but empirical rules to govern engineering design and construction.

And so engineering remained a trade, while medicine and law advanced in dignity and status. It became a tradition in engineering that the only school worth anything was the school of practical experience. Even long after the sciences of mechanics and hydraulics had become well-established courses at universities, such studies were neglected by engineers whose hard practical training tended to give them little sympathy with the abstruse and often impractical and unreal problems commonly discussed by the mathematicians. From this position, at the end of the eighteenth and beginning of the nineteenth centuries, engineering was rescued by a series of eminent men who, while they were all trained in the first instance as tradesmen, distinguished themselves by the zeal with which they assimilated scientific knowledge from any source available to them.

A REASON FOR EVERY METHOD.

Thus Telford, nicknamed by his friend Southey "Pontifex Maximus" and the "Colossus of Roads," one of the first of the iron bridge builders, started life as a working mason. When still on the first rungs of the ladder he so successfully climbed, he wrote in one of his letters:—"I am not contented unless I can give a reason for every particular method or practice which is pursued. Hence I am now very deep in chemistry. The mode of making mortar in the best way led me to enquire into the nature of lime. Having, in pursuit of that enquiry, looked into some books on chemistry, I perceived the field was boundless, but that to assign satisfactory reasons for many mechanical processes required a general knowledge of that science. I have therefore borrowed a MS. copy of Dr. Black's Lectures. I have bought his 'Experiments on Magnesia and Quick Lime,' and also Fourcroy's Lectures, translated from the French by one Mr. Elliot, of Edinburgh. And I am determined to study the subject with unwearied attention until I attain some accurate knowledge of chemistry, which is of no less use in the practice of the arts than it is in that of medicine." Such persistence and perseverance could not but attain success, and the result is to be seen to-day in the lasting qualities, that have been the admiration of succeeding engineers, of the lime concretes in the canals and other structures built by Telford. Both Fairbairn and George Stephenson received their first training at a colliery at Newcastle. Later in life, when Fairbairn had become a man of world-wide reputation as an engineer, he was elected president of the Institute of Mechanical Engineers at a meeting held at Newcastle, the scene of his work as a boy, and in the course of his address he said that had it not been for the opportunities for self-education that Newcastle offered, opportunities that we should think very small now, and the use of the library at North Shields, he believed he should not have been there to address them. "Being self-taught, but with some little ambition, and a determination to improve himself, he was now enabled to stand before them with some pretensions to mechanical knowledge, and the persuasion that he had been a useful contributor to practical science and objects connected with mechanical engineering."

But the methods and reasoning by which such men arrived at their practical designs could not be expected to coincide with the methods of the academic exponents of the principles of mechanics, and it is hardly surprising to find Todhunter, in his History of the Theory of Elasticity, writing with reference to the papers written before the Institution of Civil Engineers in the period, 1850-1860:—"The scientist stands aghast at the great mechanical results which have been obtained often by a defective, sometimes by a false theory. Perhaps it is only a consciousness of the large 'factor of safety' used which makes a railway journey endurable for a scientist after a perusal of some of the technical papers published in this decade."

Todhunter was probably seeking in those papers for results that it was not the aim of the writers to produce, and with all his scientific knowledge he would have been quite incapable of doing what these men did. The fact remains that they did build bridges that have carried heavy traffic safely for a century, that they did build railroads and locomotives which served their purpose well; that they did construct effective roads and harbors, and if in many cases the design was neither the best possible nor the most economical, the engineers at least generally erred on the safe side.

Decisive Logic of Events.

But I will not attempt to trace the development through those decades of last century, when the question of theory ver-