The Advertiser December 23rd 1886.

UNIVERSITY OF ADELAIDE.

COMMEMORATION DAY.

Commemoration day in connection with the Adelaide University was celebrated on Wednesday afternoon at the University in due form. There was a very large attendance of ladies and gentlemen and students of the University. The audience included his Excellency the Governor, the Premier, Bishop Reynolds, the Minister of Education, and the Mayor of Adelaide. There were on the platform besides the Chancellor (Hon. S. J. Way), the Vice-Chancellor (Rev. W. R. Fletcher, M.A.), Mr. F. Chapple, B.A., B.Sc. (warden of the senate), and Professor Tate.

CONFERRING OF DEGREES.

The dean of the professorial board (Professor Rennie) presented the following candidates to the Chancellor, who conferred on them their respective degrees:—

LL.B. Degree. — Frank Dixon Harris, Charles Edward Sewell, and Noel Augustine Webb.

B.A. Degree.—Walter Treleaven.

The following graduates of other universities were admitted *ad eundem gradum* in the University of Adelaide:—Robert Stewart, M.D., of the University of Melbourne; Charles Todd, M.A., of the University of Cambridge; James Hemery Lindon, M.A., of the University of Cambridge; Thos. O'Halloran Giles, LL.B., of the University of Cambridge; Sydney Talbot Smith, LL.B., of the University of Cambridge; William Anstey Giles, M.B., of the University of Edinburgh; John Henry Suffield Finniss, M.B., of the University of Edinburgh.

In admitting Mr. Todd to the rank of M.A., the CHANCELLOR said—I esteem it a great privilege to have the honor of conferring on you this degree. Your fellow-colonists accepted it as a great compliment to South Australia that the venerable University of Cambridge recognised your distinguished scientific acquirements and your great public services by according you the position of Master of Arts in that University. (Applause.)

SCHOLARSHIPS.

The dean of the professorial board presented to the Chancellor the South Australian scholar for 1886—William John Walker. In receiving him the CHANCELLOR said—Mr. Walker, I congratulate you on attaining the high distinction of South Australian scholar. I trust that your success in your University career will make us regret all the more the abolition of this scholarship. (Cheers.)

Mr. Walker was then presented to his Excellency the Governor.

The John Howard Clark scholar—Richard Bullock Andrews—was also presented to the Chancellor.

OTHER AWARDS.

The dean of the faculty of medicine (Dr. Whittell) presented to the Chancellor the winners of Sir Thomas Elder's prize for physiology—William Alfred Verco (student of medicine) and Edith Bristowe (non-graduating student).

The names of the successful candidates in the first class of the matriculation examination and in the first class of the junior examination were read, and the candidates were called up and their certificates presented by the Chancellor.

THE CHANCELLOR'S ADDRESS.

The CHANCELLOR said—Your Excellency,

my lord, ladies, and gentlemen—Each successive commemoration accentuates the want we all feel, and particularly feel on a hot afternoon like this, of a more spacious hall for the purposes of our examination and for the purpose of conferring degrees. It is exceedingly painful to those who have to address an assembly like this to know that those who are listening are suffering from the closeness of the atmosphere, and especially as there are many—ladies in particular—who have been unable to obtain seats. We claim on behalf of this University to hold the balance equally between the adherents of classical and scientific training. Last year Professor Kelly delivered an admirable address in which he forcibly and eloquently advocated the advantages of the branch of study which he teaches. On this occasion the annual address will be delivered by a representative of the scientific side of our teaching, by the Elder professor of natural science. Before calling on Professor Tate perhaps you will allow me to anticipate in a few words some of the particulars which will be incorporated in the report which in a few weeks we shall have the honor of presenting to your Excellency. The two great features of the work of the last year have been—first, the consolidation and amendment of the statutes and regulations of the University: and secondly, the completion of the arrangements for the teaching to complete the curriculum of the degree of Bachelor of Medicine. As to the first of these subjects, it would be too tedious a task for me to delay you by any description in detail of our legislative work. I shall therefore content myself with saying that as to our work as an examining University—and that by all modern authorities at all events is admitted to be an important function of any University—we have abolished the old junior and matriculation examinations, and substituted the new preliminary and junior public examinations, and senior public examinations. We have also established a public examination in music. These examinations can all be held in other places than Adelaide, and I wish incidentally to mention that the first of our local examinations has this year been held at the distant town of Mount Gambier with very satisfactory results, because, although the number of pupils was not large, the students all passed the examination with credit. We have also a higher public examination. This is the boldest departure in our new legislation, because by means of it students who have not been attending the classes of the University will be able to take all the subjects either collectively or one at a time, of the science or arts course for the first two years, and proceed, after passing that examination, to the third year's study at once, in order to proceed to the degree. Our legislation with respect to the internal management of the University has been the alteration of the conditions of matriculation, the addition of an honors course to the studies for the degrees of Bachelor of Arts and Bachelor of Science, the completion of the curriculum of Bachelor of Medicine, and the creation of separate faculties of science and arts and of medical studies. I think that your Excellency, as the practical founder of the chair of music in this University, will be interested to learn that we have made this great concession for students for the musical degree—that they can take the examination in general knowledge which is necessary before they can take that degree either before they

enter upon or whilst they are prosecuting or after they have completed the general course of study for their degree in that faculty. This fold and dry recital of our legislative work during the last year will give you a very inadequate idea of the labor taken to accomplish it. A more adequate notion will be obtained from a perusal of the statutes and regulations themselves. Those of you who have followed the discussion of our work in the leading and open columns of the daily press will be able to appreciate some of the difficulties, the delicacy, and the controversial character of the work in which we have been engaged. If we have not succeeded (as I hope we have) in improving the statutes and regulations, it has not been for want of pains. During the last year we have held more than 150 meetings of the council, of the different faculties, and of committees and sub-committees, the great majority of these meetings being directed to the accomplishment of the business I have briefly described to you. I think you will all agree with me that when the history of the University comes to be written the year of grace, 1886, may properly be described our legislative year. I think also it may properly be called Mr. Hartley's year. (Hear, hear; laughter.) It is well-known to all the members of the council and the members of the different faculties that we have been much assisted in our work by the zeal, the energy, the knowledge, and the skill which Mr. Hartley has brought to bear on the task; and whilst, Mr. Vice-Chancellor, we are indebted to you, and to the professorial staff, for your labors in the same direction, I am sure every one of you will agree with me that the leading spirit in our work of legislation has been the Inspector-General of Schools. (Cheers.) Another alteration which we have made during the past year has been to place the office of treasurer in commission — in other words, acting under the advice of the late occupant, we have abolished the office of treasurer and transferred the duties of that office to the finance committee. Sir Henry Ayers, our late treasurer, held office from the foundation of the University in 1874 until August last, and during these 12 years he had almost the exclusive management of the finances and investments of the University. I need hardly tell you that he managed that business with singular sagacity and skill, and very much to the advantage of the institution. (Cheers.) I wish that Sir Henry Ayers was present, because it would have been a pleasure to me to convey to him the thanks of every member of the University for his long and valuable services. He has retired from his position not from any want of interest in the work in which he was so long engaged, but because advancing years indicated to him the prudence of conserving his strength, and not expending it on too many branches of effort. This I may say, in the absence of Sir Henry Ayers, that he carries with him in his retirement our highest esteem, and that we on the council will long recollect with feelings of admiration and gratitude his wise counsels, and his efficient and ungrudging exertions on behalf of the University. (Cheers.) I said just now that the second great incident of the year was the completion of the curriculum for the degree of Bachelor of Medicine. It will be within the recollection of you all that owing to the munificent gift of £10,000 from Sir Thomas Elder, and the additional sum of £6,000 generously contributed by Mr. J. H. Angas, towards a chair of

chemistry, we were able to make arrangements for the two first years of study for the degree of Bachelor of Medicine. These two first years have now passed away, and as the time came round we viewed with ever increasing regret the prospect that our medical students would have to go elsewhere for the purpose of completing their professional studies. What we felt was that the larger part of the expenditure for the complete medical course had already been incurred, and that in the new biology room and lecture room as well as the dissecting-room we had ample accommodation for teaching the whole curriculum. It certainly was a mortifying prospect for the teachers of the medical school that students who gave high promise of future excellence, who were anxious to complete their education in their own *alma mater*—while students in law, arts, music, and science could all obtain their degrees in this University—students in the faculty of medicine would have to be told that they must go out of South Australia for the purpose of obtaining a degree. The Government of South Australia having determined that the South Australian scholarship shall not be continued—(Oh)—after the award which has been made to-day, we applied to the Minister of Education (Dr. Cockburn), who on representing the condition in which we were placed to his colleagues obtained their consent to advise your Excellency that the annual sum hitherto expended on the South Australian scholarship should be transferred to the faculty of medicine. ("Shame," and cheers.) We then had to bridge over the interval that would happen before the running out of the scholarships, so as to make the income expended on them available for our purposes. This dilemma was brought under the notice of Sir Thomas Elder by Dr. Stirling, to whom I think we may say very largely we owe the completion of the medical school, and Sir Thomas Elder with his accustomed liberality at once gave the sum of £2,000, which has enabled us from the end of the present year to make arrangements for the completion of the whole medical course. I think when you look at the report with regard to the medical students at the present examinations we may look forward to very great usefulness from the completion of the medical chair. I do not know that these anticipations need be diminished when we remember that of the twelve lecturers and two professors who conduct the teaching of the medical school six of the lecturers are either natives of South Australia or came here in early youth, and two of the professors are Australian born. (Cheers.) I share the expression of regret which was unmistakable when I announced the abolition of the South Australian scholarship. (Hear, hear.) That feeling of regret was certainly not diminished the other day when we read in the English telegrams, published in the newspapers, that Mr. Murray, the South Australian scholar for 1883, and who a few months ago took the gold medal for jurisprudence at the examination of the Inns of Court in London, has also the distinction of winning the Craven Scholarship at the University of Cambridge. (Cheers.) I need not inform Cambridge men that this is a classical distinction reflecting the highest possible credit on the training which Mr. Murray received from Professor Kelly, and to the foundation which was laid at St. Peter's College. But I may venture to inform others that you may always

find the Craven scholar at the head or nearly at the head of the classical Tripos. The list of the holders of the Craven Scholarship includes scholars like Porson, I think four eminent bishops of the Anglican Church, two provosts, and one headmaster of Eton, one Lord Chief Justice of the Common Pleas, and Sir Henry Maine, the jurist eminent amongst lawyers; and every schoolboy who has read the most charming biography in the language since "Boswell's Life of Johnson" will know that that list includes the name of Thomas Babbington Macaulay. It does not therefore require much boldness to affirm that the winner of the Craven Scholarship is, if not a certainty, a very probable precursor of future eminence. I am sure you will understand the regret which I feel that the finances of the colony have compelled the discontinuance of the award of the South Australian Scholarship after the present occasion. And yet, when I turn from sentimental to more practical considerations, I am bound to acknowledge that the completion of the medical school is a greater advantage to the colony—a greater advantage to a larger number of students—than the continuance of the South Australian scholarship. (Applause.) Your Excellency, my lord, ladies, and gentlemen—It will be half a century ago on Tuesday next that a few hundred people who had just landed at Holdfast Bay assembled under the gum trees near the beach for the purpose of hearing the commission of your Excellency's first predecessor in the office of Governor read and the foundation of the colony proclaimed. (Applause.) Colonists of the best class—courageous, hopeful, energetic, self-reliant—they were conscious of the difficulties and also of the promise of the task in which they were engaged. If on that day their hopes rose high what has been accomplished since has far surpassed those hopes. Amongst the great achievements of the first half century of our history very high must be placed what the most sanguine of that band of pioneers certainly never anticipated, namely, the establishment here of a University liberally endowed, amply equipped, imparting teaching of a high class in arts, in science, in law, in medicine, and in music, and conferring degrees which are recognised all over the world. (Hear, hear.) In reviewing the incidents of the last 50 years of our colonial life, I am unable to point to examples of higher patriotism than the gifts of Sir Walter Hughes and Sir Thomas Elder for the purpose of founding this University. (Cheers.) When another 50 years have passed away, and the centenary of this colony comes to be celebrated, your chairs, Mr. Warden and Mr. Vice-Chancellor, and my own will be filled by others, but this need not be doubted—that the greatness of these gifts and the benefits flowing from them will shine out in yet brighter and bolder relief than they do to-day, and they will be even more widely and gratefully acknowledged. (Cheers.)

Professor TATE then delivered the following address:—

"On this the twelfth anniversary of the foundation of the University it devolves upon me, by request of my council, to deliver an address, and thus to continue the annual custom initiated four years ago. I should have been glad to have been excused the task, because the selection of a suitable theme is very difficult for me, occupying myself as I do with studies which are educationally not yet in fashion amongst us. It would have been more congenial to have discoursed on the progress of Palæontological

discovery in Australia, or the like, but the avoidance of technicalities being impossible I have been forced to select a subject outside the domain of natural science. Much discussion has taken place of late—in Parliament, in the daily press, and elsewhere—upon the teaching of technology. In connection therewith this University has been adversely criticised, and I have thought that it may be appropriate to the present occasion to set in a proper light the relation of this University to technology, and in a general way to deal with the larger subject of the influence of the University in promoting the industrial welfare of the colony. Few really know what they want in the way of technical education; and few of the clamorous against the University are aware how far the wants of technical education are supplied by this University. The word technology is rarely used in its proper sense. To quote from an address recently delivered before the Chamber of Manufactures — 'In its generally accepted sence it comprises mainly the mechanical arts or utilitarian arts,' or again, as equally vague and incorrect 'technology has something to do with machines, tools, and the like.' I understand technology to be the application of scientific principles and methods to the industrial arts. All manufactures involve two functions; first, that of the mind, which directs and controls the several stages in accordance with scientific principles—each in its proper order, and each as a consequence of that which precedes it; and secondly, that of the hand which executes, acting as it were automatically, though much diversity of skill may be exhibited in carrying out the work. In some industries the scientific function has been lost sight of, because the methods inculcated in the first instance have been universally followed or systematically formulated; in other words, the successful performance of the labor demands knowledge the result of experience, though the processes appear to be reduced to a mere imitative art. Nevertheless art is not to be found in every kind of labor. In carpentry the particular forms of jointed pieces of timber have been determined on mechanical principles, as giving the greatest strength at the least cost of labor and waste of material; but because all this knowledge has been taught by one generation of carpenters to another purely as an art—that is, in total ignorance of the why and the wherefore—it cannot nevertheless abrogate the scientific principles on which this art is based. The word 'art' may be traced a long way back, and it usually has the meaning of fitness and symmetry; skill is inseparably connected with it. Art fits and disposes. Science for the most part designs and contrives, while art executes. The recent clamor touching technical education in our State schools seems to resolve itself into a demand for teaching the use of tools, certainly not technology; and is in my opinion an ill-advised proceeding, the introduction of which will distract children from their proper school duties, and will encroach on the prerogative of the master handicraftman. If school education can be advanced beyond the mere rudiments, why shall it not be in the direction of physical and chemical science? The few trade schools which were established in England about thirty years ago had a very ephemeral existence; and though that at Bristol, with which I was

officially connected 25 years since, still survives in name, yet it never aimed at more than imparting a sound knowledge of the sciences bearing on commerce and the industrial arts. The Hand Schulen of Germany teach on the same lines, on which, however, is engrafted technical instruction. Have we ever fully considered what sort of education our working man wants? Is he contented that his children shall know nothing about this great island continent, nothing of its wealth, nothing of their duties as citizens. Education to be real must embrace all this. As all industries have their technical aspects, each of which are specific, and therefore different from one another, it is, therefore, obviously impossible to engraft a school of technology on a university; but nevertheless it can and does much in this direction. To illustrate—The art of brewing, though apparently simple, is, however, complicated by variable conditions. To brew a given class of beer of superior quality requires an intimate knowledge of many chemical reactions, some of which are even yet obscure. The master brewer has, through exigencies of trade competition and partial failures, been forced to consult the professional chemist. Suppose an Adelaide brewer wishes to be taught the technology of his art, or a soap-boiler that of soap making, or similarly others each in his own industry. Now, all these before they can understand the chemical principles involved in their respective industries must acquire a knowledge of the elements of chemistry and the methods of chemical investigation. They must all begin with the alphabet of science. This much at least the University does teach, and whatever may be the special ends in view, all are taught alike up to where the divergent paths begin. Until an industry assumes a magnitude to furnish sufficient students it is obvious that the application of a science to any particular industry cannot form part of a University curriculum, and even then only after good groundwork has been laid in the particular science and others cognate therewith. I assert without fear of contradiction that in this University a substantial foundation is laid, upon which a superstructure of technology may subsequently be raised. Two industries are in my estimation of sufficient importance to justify their scientific treatment within these walls. One is mining. It is not necessary to found a Mining School for this object. Indeed, such a step would be a mistake. Though such institutions are flourishing in Victoria, yet they are not schools of mines pure and simple, as they have always aimed at being more than mere nurseries for mining managers. The University is not fully equipped to provide a mining department, but instruction is afforded at the present time in all subjects except two of a mine manager's scientific education. The lack of scientifically-trained men to take the management of our mines is a principal cause of failure. The history of every gold-mining venture reveals a deplorable waste of money as the result of unskilled management. We do not yet know how to mine; we do not yet know how to conduct metallurgical processes other than those of copper to a successful issue. An industry that might be of national importance languishes through ignorance; our capitalists lack knowledge of the simplest chemical and geological principles, and readily become the dupes

of the so-called professional miner, who is usually clever enough to incorporate some germ of scientific truth, which is necessary to give an air of probability to his statements. An educated public opinion is what is wanted with regard to mining, water supply, and other kindred matters; and this University endeavors to arouse the people to a sense of its shortcomings by the enlightened force of instruction—by imparting the ability to interpret phenomena, to apply facts in the right direction, and to perceive fallacious deductions. The geological survey department is an important factor certainly, but it does not teach, as the information which it supplies is addressed to the few who have had the requisite geological training. The second industry, the scientific wants of which this University could largely if not wholly have supplied, is that of agriculture. It was not any too soon that our legislators admitted, by the establishment of an agricultural college, the absolute necessity which existed for instructing the people on the nature and qualities of the soil, its adaptation for particular crops, the description of manure necessary for it, the knowledge of rotation, green cropping, feeding, &c.—in short, to lead our agriculturists into beneficial and enlightened processes of tillage, which will enable them not only to take out of the soil all that it is capable of producing without exhausting its strength, but on the contrary, to maintain it in a high and productive condition. The establishment of the principle of enlightened instruction and example, which involves so much of national happiness and prosperity, is equally applicable to other industries besides that of agriculture. The practical value of the application of this principle is well illustrated by the results achieved by the Conservator of Forests in the department of arboriculture; and though the interests involved are relatively of minor importance, yet the lesson taught reaches far beyond the circumstances from which it was evolved. I know not the reason, but it is much to be regretted that the scientific training of the tyro agriculturist was not entrusted to the University with its efficient staff of teachers and appliances. To the oft-repeated cry that the University was started too early I would answer briefly that the education of a nation like that of an individual cannot be commenced too soon. Our objectors would test the usefulness of the University by a numerical standard alone; and if this common method of estimating intellectual work were allowable then the largest number of students taught by the cheapest teachers would be the greatest success. The history of Universities demonstrates that they have been among the most powerful of all agencies for the promulgation of learning; that they are the best organisations for the liberal education of individuals and the best organisations for the advancement of science. That this University has stimulated a higher education in our midst is, I believe, universally acknowledged. But to revert to the consideration of the higher functions of the University. I have already implied that it is not the number but the quality of students which determines the character of an educational institution like this. Those who would look at results should not form a conclusive opinion at this early stage of the University's existence. This kind of

test of our work cannot be applied till after the lapse of a generation or so. But whatever may be the final verdict on the work of our time, yet we think well of our work and the way in which it is performed. Sydney, founded in 1854, claims a very few men of eminence amongst its alumni, and the American universities which are many years older have only just now produced men whose fame has spread beyond their walls. A university accumulates knowledge and conserves it, and I assert with much confidence that it has been drawn upon largely, and has been utilised in a way beneficial to the community at large. Hence the necessity to permit its teachers ample leisure for carrying on this important function. I have before said that a generation is the briefest period for a fair review of the work of the University—that our hopes rest on the rising generation. Our students are few, but the distribution of knowledge does not stop at them. A youth does not study three years at the University for nothing. When he leaves this seat of learning he has changed his mind about the aims of education, and he will change the minds of his brothers and his cousins, and the spread of this revolution will go on with increasing rapidity. And the University has other less obvious, but not less useful, opportunities of conveying benfits to the outside world. Our University does not enjoy a widespread popularity, chiefly because, I think, the average understanding of the educated community is far below the standard of intelligent appreciation of how the University can be made to benefit society, of how it is a powerful educational factor as bearing upon the development of our latent industrial powers. But this kind of passive opposition would count for little had we not to contend against the active resistance from men high in the social scale, some of whom having acquired a quasi-scientific reputation have been the means of disseminating a feeling of distrust towards the University. Some of its professors have been jeered at. Their reputations, often assailed, have, however, rather gained than lost in the opinion of those best qualified to judge; but nevertheless the false impressions meaningly promulgated have not been effaced. I have no desire to suppress honest criticism, but I must point out the necessity of balancing thought, even be it honest, with a due weight of honest facts. The motive for the open antagonism to which I have just alluded is not quite clear, unless it be something of the kind which barred my entry into a scientific society some few weeks after my arrival in this colony, and before I could have been personally known to the members, excepting my proposer, who was visiting me in a professional capacity. A university implies not only advancement but originality; its professors must therefore be investigators, and should impart their acquisitions to the world of scholars. The past experience of Australia as regards its natural history is that it is the stranger and not the home-bred student who carries off our richest treasures to make other universities famous. And I have to deprecate the continuance of the practice of sending to Europe our natural productions for elaboration to the detriment of the reputation of local investigators and to the advancement of science in Australia. Were the objects acquired by private effort we should have no cause for interference, though the regret would be none the less, but when they have been acquired by the expenditure of public

money the lack of patriotism is the more reprehensible. This leads me to an important question recently submitted to the earnest consideration of Australian scientists by my friend, Professor Liversidge, in an address to the Royal Society of New South Wales, namely—"In what way may original research be encouraged, and in what way can the universities afford aid?" Though I am not prepared to answer the question, yet I cannot refrain from offering certain subsidiary aspects of it, particularly as touching the relation of a university to scientific research. Scientific research consists of the observation of phenomena and the discovery of their relations. The scientific observer does not gather facts indiscriminately, but, recognising their classification, seeks new facts that will augment established groups. It is, moreover, the province of research to discover the antecedents of phenomena. Discovery consists not alone in finding out some new plant, animal, or mineral, but there are various problems awaiting solution more or less immediately practical. Little original work has been done in investigating the chemistry of our mineral and vegetable productions, and very little in many branches of biology, especially in relation to the development and life history of forms of life peculiar to Australia. In natural science it must be apparent that the material for original work is within reach of all. As no one can plead the want of a subject, why is it that there are so few workers? The Royal Society of New South Wales has offered its medal and money prizes for the best original communications upon certain specified subjects, but to the present no awards have been made. By way of an apology for the universities I would point out that hitherto students have belonged to the class which only desires to obtain as a part of a liberal education an acquaintance with the materials and results of science; as yet few have been prepared to engage in the work of research and who look to a scientific career. This University is to be congratulated upon being able to meet the demands for a training in scientific methods—the bases of original research. Another cause of the little aid rendered to science by the Australian Universities is that their professors have hitherto from necessity been occupied with too many branches of knowledge. For myself I feel that the 11 years which I have spent in investigating the natural history of this colony have yielded little or no apparent results. Yet the days have not been actually wasted, because they have largely been given up in affording help to others. Nevertheless, I regret being led away into diffuseness, as otherwise it might have been that by concentrated attention upon a group or limited number of groups of phenomena some distinction may have been achieved. By-and-bye other workers will arise, and with the sub-division of labor consequent thereon, a more searching intellectual activity will succeed to the diffusiveness which now prevails, as to eventuate in the accomplishment of some renown for themselves and their universities. As a favorable indication that natural science is advancing in Australia—and at a rapid rate—I would point to the activity evinced by the scientific societies during the last seven years; and though the work done by them is chiefly in the direction of diagnosing new forms of life, yet it is a necessary preliminary to the higher aspects of biological research.

Natural science is progressive, every year brings forth discoveries, novelties, and a large crop of corrections, and of information which modifies preconceived theories and opinions. It is this freshness, this constant supply of new material, intensified in a comparatively unexplored field like Australia which constitutes one of the many charms of natural history research. It would be supererogative for me to advance reasons for the inclusion of subjects of study for our science degree, but I may be allowed to briefly indicate the interrelation of these sciences, and of their bearing on industrial progress, and why they should be pursued simultaneously. One branch considers what gifts nature offers, the other branch how to turn these gifts to account. "Thus, geology finds a bed of coal, chemistry tests its value in the market, cokes it, distils from it gas, naphtha, aniline colors, &c. Mineralogy selects iron ores, chemistry converts them into steel, and mechanics converts into watch springs, rails, &c. Descriptive botany plucks a wild fruit, physiological botany changes it into a sweet grape, chemistry ferments it into wine and transforms it into ether. Descriptive zoology lays its hand on a caterpillar, physiological zoology nurses it into a strong silkworm, chemistry bleaches and dyes the silk which it spins, and mechanics weaves it into ribbon or velvet." Need aught now be added in favor of the study of science. And yet I must plead for one, viz., biology. It is a subject that so-called practical minds are openly given to loudly express their disapproval of because it deals with what to them seem mere abstractions. Doubtless to such minds the study of the development of the *rods* of splenic fever on a glass plate must seem a piece of scientific dilettantism, because its result cannot be measured by a profitable currency, or in plain language, it 'doesn't seem to pay.' The best answer to such foolishness is found in a recital of the results to human and animal life, to which biological studies seem likely to lead. The practical and actual benefits which have flowed to human health, and which are likely to flow in the future as well—the saving of life by the prevention and extermination of disease arise from a simple study in biology. What good is to come to men from biological researches it would not be wise to predict, but we may reflect upon what has recently occurred? Perhaps no instance more remarkable than Pasteur's work on the cause of silkworm disease can be cited of the value of science in a commercial and national point of view. A great industry was all but extinguished, and the impending catastrophe became a question for parliaments and statesmen. A scientific investigator was appealed to; he set to work in 1865, and after four years continued application he had solved the problem, and delivered his country from the incubus on her silk industry. This brilliant success which could be neither concealed nor depreciated led the successful experimenter being called upon to devise a means of checking the ravages of splenic fever or anthrax among horses and cattle, of cholera among poultry, and of hydrophobia in the human species. It may be modestly said that these discoveries were accidents, but these kinds of accidents do not happen in Africa or New Guinea; they happen where there are universities and laboratories, and trained men able and ready to observe, discover, and apply. Natural history in these days is a progressive science, and the nation that shows indifference and inaction to maintain efficiency will assuredly suffer in the day of trial. (Cheers.)

At the close of the address, the CHANCELLOR said—I am sure we all feel very grateful to Professor Tate for the very suggestive paper we have heard. We knew he would speak out his mind, and give us the benefit of his knowledge and experience without fear or favor of any, and I am sure we shall return to the perusal of his paper with pleasure and profit. Will your Excellency permit me on behalf of the Univereity to thank you for your attendance. We feel that you are doing us an honor in coming among us this afternoon, and we take it as an exemplification of your continued interest in an institution which from your first arrival in the colony you have done your utmost to benefit. Perhaps I may also take this opportunity of expressing our gratification that you are accompanied by the Premier and the Minister of Education, and of repeating my thanks to them for the great service they have done the University in the completion of the Medical School, and in bringing before Parliament a vote of £900 or £1,000 for the purposes of completing the new buildings, which enable us to prosecute the studies of the medical school with so much profit and advantage. (Applause)

The proceedings closed with cheers for his Excellency.