

1895.  
NEW ZEALAND

## EDUCATION: THE UNIVERSITY OF OTAGO.

[In continuation of E.-6, 1894.]

*Presented to both Houses of the General Assembly by Command of His Excellency.*

The CHANCELLOR of the UNIVERSITY of OTAGO to His Excellency the GOVERNOR.

YOUR EXCELLENCY,—

University of Otago, Dunedin, 4th June, 1895.

In compliance with the provisions of "The Otago University Ordinance, 1869," I have the honour to forward to your Excellency the following report of the proceedings of the University of Otago for the year ending the 31st of March, 1895:—

The classes have this year been attended by the following number of students Males—matriculated, 140, non-matriculated, 31 total males, 171. Females—matriculated, 36, non-matriculated, 4 total females, 40. Gross total, 211.

The degrees and honours gained at the November examinations are as follows:—

Master of Arts.—J Collie, with second-class honours in political science, and second-class honours in mental science, Miss Rose M. Davey, with second-class honours in Latin and English, Miss Elizabeth Anderson, with second-class honours in mental science, Miss Janet Paterson, with third-class honours in mental science, Miss Margaret Gellatly, with third-class honours in mathematics, Miss Katherine MacGregor, with third-class honours in mental science, J Pringle, with third-class honours in mathematics, C. B. Snow, with third-class honours in mental science.

Senior Scholarships.—A. D. Wilkinson, Latin, G. P. Howell, English and German, E. Pinder, mental science.

John Tinline Scholarship.—Miss Jessie H. Rutherford.

Bachelor of Science.—C. North, B.A., A. R. Falconer, B.A.

Bachelor of Arts.—Miss Janet M. Polson, Miss Christina M. Cruickshank, Miss Jessie H. Rutherford, Miss Alice M. Baron, Miss Rachael M'Kerrow, Miss Edith Hodgkinson, Miss Louisa L. Downes, A. McNab, E. Pinder, A. M'Neil, D. A. Strachan, G. P. Howell, W. J. Barclay, J. R. Wallace, W. H. Howes, A. D. Wilkinson, W. Gray, P. J. MacLeod, W. A. MacLeod.

Bachelor of Laws, Second Section — W. Macalister, B.A., A. H. Adams, B.A., E. C. Cutten, B.A., A. B. Haggitt.

Bachelor of Laws, First Section — Miss Ruth Benjamin, W. Macalister, B.A., F. W. Platts.

Bachelor of Arts, First Section—Miss Edith Barclay, Miss Grace M'Arthur, Miss Sarah Wilson, Miss Kate Webber, Miss Helen S. Baird, J. M'LAY, F. W. Hilgendorf, P. M'Kinlay, T. Dunn, J. Borrie, A. Marshall, J. A. Cowie, D. N. Pryor, R. T. Little, J. M. Simmers, W. Cran.

Teachers C.—L. Pope.

Barristers.—A. L. Herdman (in law).

Junior Scholarships of the University of New Zealand are held at this University by H. F. Skey, G. E. Thomson, L. E. Williams, Linda C. Fenwick, and Annie Bauchop.

During the year the University has lost one of its staunchest friends and supporters, the Chancellor the Rev Dr D. M. Stuart, who died after a short illness. Dr. Stuart was one of the original Council of the University, appointed by the Provincial Council in 1869, and had held the office of Vice-Chancellor from 1871 to 1877, and was Chancellor from 1879 to his death. The affectionate regard which he always evinced for the University that he did so much to establish was shown by his bequest of the sum of £100 for a fund to provide prizes in the classes of mental science, natural philosophy, and English.

Mr. John McLean, of Redcastle, Oamaru, who was appointed to the Council in 1886, found himself obliged to resign his seat, and the Council forwarded to him a vote of thanks for his services, and expressed their regret at his resignation. Mr R. L. Stanford, B.A., LL.B., an original member of the University Council, resigned his seat on his removal to the North Island, and was thanked by the Council for his long and faithful services to the University. On the death of Dr Stuart his Honour Mr. Justice Williams was elected Chancellor, and Mr. E. B. Cargill Vice-Chancellor.

The vacancy in the Council caused by the Chancellor's death, was filled, in accordance with the provisions of the Act of 1891, by the professors of the University appointed by the Council, and Professor George Samuel Sale, M.A., was elected for five years. The vacancy caused by the resignation of Mr John McLean was filled by the graduates electing the Rev Andrew Cameron, B.A., for five years. The remaining vacancy, caused by the resignation of Mr Stanford, was filled by the professors electing Professor J. Shand, M.A., LL.D., for five years.

*Teaching Staff.*—Mr. David Wilkinson, the lecturer on metallurgy, resigned his appointment at the end of the session, and Mr P Fitzgerald was appointed temporarily to conduct the assays for the public. Mr Fitzgerald has now been appointed for one year as lecturer on metallurgy and assaying. Mr J R. Don, M.A., B.Sc., was appointed to the lectureship on geology held by Mr Wilkinson. Dr J G. Findlay, LL.D., resigned his lectureship on political economy on removing to Wellington. The Council were unable to arrange for lecturers on this subject during the present session, but Professor Gibbons has consented to give a course of lectures next session.

In accordance with a resolution of the Council, the medical lecturers were reappointed for three years, from the 1st November, 1894, as under Dr Colquhoun, lecturer on the practice of medicine, Dr Ogston, lecturer on medical jurisprudence and public health, Dr Batchelor, lecturer on midwifery and diseases of women, Dr John Macdonald, lecturer on materia medica, Dr Roberts, lecturer on pathology, Dr Lindo Ferguson, lecturer on ophthalmology, Dr L. E. Barnett, lecturer on surgery in the place of Dr William Brown, who desired to retire from the lectureship. Dr. Brown was thanked by the Council for his valuable services to the Medical School.

*Endowments.*—As mentioned in last year's report, the Barewood Run (30,000 acres) was thrown on the hands of the Council, and they decided to have the whole of the block subdivided into sections, and offered at auction at a low upset rent. A pre-emptive right of 92 acres in the centre of the run, on which were the homestead buildings, woolshed, yards, &c., was purchased for the sum of £200, and added considerably to the working value of the property. The run was offered at public auction in October, but, owing probably to the great depression in pastoral matters, only one small section of 500 acres was disposed of at the upset price. Every effort was made to dispose of the run by private tender at a satisfactory figure, but the Council was at last obliged to accept an offer of £900 a year for the run, which in 1880 was let at auction for £2,925 a year, subsequently reduced to £1,750. The immediate loss on the annual rental of this run is £850, a sum which must be added to the losses incurred last year of £600 a year on Benmore, and £150 a year just recently on the Museum Reserve. The loss in revenue on these three endowments is therefore £1,600, to which must be added this year the great expense of surveying, rabbiting, and letting Barewood. The expense of the survey would probably have been much greater but for the kind permission of the Government Survey Department to have the survey executed by their officials at the actual cost.

The Finance Committee have been strictly investigating every item of expenditure in the accounts and estimates, and have made every reduction that they feel justified in making, and in the case of grants for apparatus and for the library they have been obliged to place the figures at an amount which will not keep these departments in proper condition. The revenue now to be received from the endowments and ordinary sources will scarcely meet the fixed engagements of the Council, leaving nothing available for maintenance or repair of buildings, or for any unforeseen contingencies that may arise. This is the present position, and the Council view it with much concern.

The report of the Director of the School of Mines for the year 1894 is appended, and also a copy of the special report of the Finance Committee on the revenue and expenditure. A copy of the audited balance-sheet for the year ending 31st March, 1895, is also forwarded.

JOSHUA STRANGE WILLIAMS, Chancellor

To His Excellency the Governor of New Zealand.

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## APPENDICES

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### I.—REPORT OF THE DIRECTOR OF THE SCHOOL OF MINES.

SIR,—

University, Dunedin, November, 1894.

Herewith I have the honour to submit my report on the work and the results of the School of Mines during the past session (1894), and on matters concerning present circumstances and future progress of the school.

At the end of the session of 1893 the school lost six students, leaving only thirteen, but nine fresh students entered, thus making the attendance number during the past session twenty-one. Of the six students who left, three were occasional students for special subjects only, one, who required to attend one more session for passing through the mining division, sent notice that on account of his delicate health he was advised to take a year's rest, and hoped to be able to return for next session, the other two students had finished their studies—one for the mining division only, the other for the mining, metallurgical, and geological divisions,—and both have since been granted the diplomas of associateship to which they were entitled.

Of the twenty-one students during the past session, three entered for special subjects only—namely, two for assaying, and one for assaying and blowpipe analysis. The other eighteen were regular registered students, who attended the different lecture courses entered for very regularly, except one, who frequently missed lectures in one of the subjects, and, in consequence, failed in the examination.

The present status of these students is as follows:—

Five of the new students passed through the first year's course, save that four of them, with the intention of devoting four years instead of three to going through the whole course, did not take mathematics, reserving it for next year. This accounts for the small number who entered for examination in this subject, as shown in the table given further on.

Six students passed through the second year's course of the mining division, though two of them, who intend to stay four years, missed also one subject.

One student of two years' standing attended only two of the mining classes, and with success in the examinations, devoting his studies principally to subjects of the B.Sc. degree examination. He intends, however, to devote the next two sessions entirely to subjects of the mining and geological divisions.

Two students who entered for four years for the mining and metallurgical divisions have finished their third year, one passed examinations in all subjects taken successfully, the other failed in one subject, but, as he has another year's attendance to spare, he is likely to make up the deficiency.

One student of four years' standing, who through insufficient attendance due to illness failed in last year's examinations in some of the subjects, attended these subjects again, and was successful in the examinations. He requires to pass in only two subjects more to qualify him for the associateship in mining, as he has already been engaged for more than twelve months in practical mining work.

One student, who had previously passed examinations in most of the subjects of the mining, metallurgical, and geological divisions, but devoted last year to practical mining work, attended lectures in the remaining subjects, and also in other subjects, qualifying for the first section of the B.Sc. degree, but I am sorry to say he failed in some of the examinations, and will have to try again next session.

Two students—Donald J. Matheson and Harry C. Boydell—each of four years' standing, have successfully passed examinations in all the subjects of the mining and geological divisions, and the former also in that of the metallurgical division. H. C. Boydell, having fulfilled the condition of twelve months' practical work in mines, is entitled to the diplomas of associateship of the divisions in which he passed but D. J. Matheson, having not as yet done any practical mining work, can only claim the diplomas of the metallurgical and geological divisions. Both these students are also qualifying for the B.Sc. degree, and H. C. Boydell has already passed the first section of this degree.

The attendance of the classes, and the results of the annual examinations, are shown in the following table:—

Subjects.	Attendance.	Entered for Examination.	Results of Examination.			
			1st Class.	2nd Class.	3rd Class.	Failures.
Mathematics	4	4			2	2
Theoretical Mechanics	5	5	1	2	1	1
Theoretical Physics	2	2		3	1	
Practical Physics ..	4	4		2	2	
Theoretical Chemistry	6	6	2	2	2	
Practical Chemistry	5	5	2	2	1	
Advanced Practical Chemistry	2	2	2			
Biology..	2	2		1	1	
Practical Biology	2	2		2	..	
Mining, 1st course	7	7	1	2	4	
Mining Geology	5	5		3	2	
General Geology ..	4	6	3	3		
Mineralogy ..	8	8		3	4	1
Petrography	4	4		3	1	
Palæontology	2	2		2		
Assaying, 1st course	7	7	2	4	1	
Assaying, 2nd course	2	2		2		
Blowpipe Analysis ..	11	11	7	4	..	
Surveying, 1st course	7	7	1	6		
Applied Mechanics	2	2	1	1		
Drawing, 1st year ..	4	4	2	2		
Drawing, 2nd year ..	5	5	4	1		..

Owing to interference with the University evening classes, the lecture course of the St. John Ambulance Association was attended by only two of the students, who were successful in gaining certificates of "First aid," as required by the new regulation instituted by the Council. During next session the number attending these classes will, no doubt, be much larger.

There were no evening classes in assaying and surveying held during the session, as no one made application for them.

Regarding the number of students to be counted upon to return for next year's session, it will probably be thirteen, as two of the eighteen on the roll have completed their studies, as previously mentioned, and three, who have not finished, were uncertain of return. However, as in previous years, there is every probability that an accession of new students will bring the attendance up to the average of past sessions, for it is now becoming generally recognised that the knowledge gained at a School of Mines opens to a young man, who takes proper advantage of the whole course, several avenues to remunerative employment leading to really good positions in time, if not in this in other countries.

The difficulty which our students have generally to face at the end of a session—namely, of finding places for practical mining work during the vacation—seems this year to have been more easily overcome than formerly. Two have gone to Ballarat, Victoria; two to the Mount Bischoff Tin-mine, Tasmania; and the others, I understand, have, with few exceptions, found work in coal- and gold-mines in this province and on the west coast of the island.

There was only one division certificate granted during the year to one of the past students—namely, that of Mines and Land Surveyor, to F. B. Allen, M.A., B.Sc., who had become entitled to it by having been engaged for six months in the practice of mine- and land-surveying.

The liberality of the Hon. the Minister of Mines (Mr. Cadman) in establishing three scholarships of £50 each per annum for the colonial Schools of Mines, tenable for three years at the Otago University, caused at first much excitement and satisfaction amongst our students. However, after the conditions of success in obtaining a scholarship had been closely studied by each, there seemed to be only two of the students—and these, I am sorry to say, are very doubtful—who showed a desire to try for the distinction. The reason for this apparent want of ambition is that, in order to avail himself of the money-value of the scholarship in studying for a degree of the New Zealand University, which it is evidently intended for, an older student would have to extend his studies for several years longer, in order to embrace more subjects counting for the degree, while a new student would have to reckon upon at least five years' hard study, as the examinations to be passed for the scholarship require three years' study at the School of Mines alone, and two years' study thereafter of degree subjects is, perhaps, scarcely sufficient. Amongst our present students there are, however, few, if any, in circumstances permitting such a protracted University course; all are anxious to gain in three or four years—*i.e.*, as quickly as is possible for them—the certificates of the mining and assaying divisions, and, with those credentials in possession, to go into the world in search of suitable positions, in the hope of meeting with similar success as some of our past students have achieved with like qualifications. The most of those students who went abroad found, without long waiting, satisfactory employment, while several gained really good positions. As a recent case in point of such success, I can mention that of Edward Paterson, who only left New Zealand for the Transvaal in August of last year, and, after being in well-paid employment nearly from the date of his arrival there, was offered and holds now a responsible position at a salary of £600 per annum, with free residence. There are other two of our past students in good positions in the Transvaal, and a number well placed in Victoria, Tasmania (the Government Geologist and Inspector of Mines), and Western Australia; but only three have, so far, found employment in New Zealand. And here I may be permitted to quote, as pertinent to the subject, portion of a small article headed "On Matters relating to the School of Mines," which I wrote for the commemoration number of the *Otago University Review* of 1893. It is as follows: "On glancing at the educational results of the teaching in the School of Mines one is struck by the fact that most of the past students who have succeeded in attaining to responsible good positions did so outside of New Zealand, thus favouring the opinion the writer has occasionally heard expressed 'that State support to the School of Mines is of questionable utility if, after receiving their education at comparatively small expense to them, students leave our shores, and use their knowledge for the benefit of other countries which have spent nothing in training them. At first sight this may seem a formidable indictment, but, based as it is upon a rather one-sided, if not selfish, view of the *raison d'être* of professional schools, it quite ignores the main principle upon which such schools are nowadays established in all civilised countries. This principle is to afford parents opportunity to have their sons trained in professions promising them a satisfactory status and income in after life. If their own country offers openings in this respect no doubt the young men remain, but, if it does not, they are obliged and prepared to try their fortune in other countries, and so stands the case with our past mining students. All would gladly stay in New Zealand if suitable positions, with some promise of advancement, were available, but this, unfortunately, is the case to but a very limited number." So far the article. What requires to be added is that openings, such as mentioned, are, from experience, most likely to occur in the Thames and Reefton mining districts, and there the students trained at the Thames and Reefton Schools of Mines have naturally the advantage of early information in applying for them.

A few months ago, as reported to the Council, the representative of the Cassel Gold-extraction Company (owners of the patent rights in this colony of the MacArthur-Forrest cyanide gold-extraction process), resident in Auckland, made a present to our school of the apparatus and chemicals left behind by the officer of the company to whom the Council had granted room and facilities in our laboratory for executing assays and trials by the cyanide process of auriferous material from Otago mines. Two of our advanced students took advantage of the necessities thus available, and experimented with the process on auriferous tailings, though on a very small scale, under the guidance of Mr. Wilkinson, who had never himself, however, worked or seen the process worked on a large scale. It therefore much enhances his qualifications, and is greatly to the advantage of the school, that Mr. P. Fitzgerald, whom the Council have temporarily appointed in Mr. Wilkinson's place, thoroughly understands the working of the process on the large scale, having learnt it at the Premier Mine, Wakatipu district, under the instruction of the officer of the Cassel Company before mentioned. According to Mr. Fitzgerald's estimate it would only require an outlay of about £20 towards the purchase and erection of some larger apparatus, and providing a stock of necessary chemicals to permit the treatment by the process of samples up to 4cwt. of auriferous tailings, and, in view of the fact that this process of gold-extraction is doubtless the most important and successful one introduced into practice in recent times, and should therefore be especially well taught, both theoretically and practically, in a mining-school of a gold-mining country, I take the liberty of strongly recommending this expenditure, considering that it might be made up in time by judicious charges for treatment of such larger samples. Another reason for my recommendation is that the results of the treatment by the process of comparatively large weights of material would be more reliable in estimating the percentage of gold extractible on a large scale, and therefore more satisfactory to miners sending samples than those yielded by small trials, or by fire-assays of minute weights, hitherto resorted to. Next we have the example of the Thames School of Mines, where the process is excellently well taught by the treatment of still larger samples than above specified, and forms, I am told, a special attraction to students. The Cassel Company having the patent

rights of the process in this colony, as before mentioned, our school would require the permission of the representative of the company to work the process on the scale proposed, and as such permission has been granted to the Thames School of Mines, and might in our case turn out very profitable to the company in leading to the introduction of the process on some of our gold-mines, I do not anticipate a refusal of it.

The severing of his connection with our school of Mr D. Wilkinson is much to be regretted, as we lost in him a highly-qualified and practically accomplished teacher of his profession.

The work done for the public since the close of session 1893 by Mr. Wilkinson, and after his departure by Mr. P Fitzgerald, in assays, and by myself in determinations of minerals and rocks, was as follows :—

#### CHARGED FOR AT FIXED RATES.

##### *Work done by Mr Wilkinson.*

April 4.—Assay of quartz tailings for gold, for Mr James Allen, M.H.R., Dunedin.

April 5.—Assay of amalgam for gold, for Mr James Allen, M.H.R., Dunedin.

April 5.—Assay of blanketings for gold for Messrs. Hamilton and M'Kerrow Dunedin.

April 6.—Assay of tailings for gold, for Messrs. Hamilton and M'Kerrow, Dunedin.

April 7 and 8.—Seven assays for gold of seven samples of quartz, from Wilson's River, West Coast, for Mr R. B. Williams, Invercargill.

April 28.—Three assays of three samples of tailings for gold, for Mr James Trent, Christchurch.

May 4.—Assay of sample of quartz for gold for Mr James Trent, Christchurch.

May 28.—Assay for gold of concentrates from quartz crushing, for Mr Donald, jun., Dunedin.

July 2.—Four assays of four samples of quartz for gold, and analysis of manganese-ore, for Mr John Reid, Elderslie, Oamaru.

##### *Work done by Mr P Fitzgerald.*

October 2.—Assay of sample of quartz for gold, for Messrs Haggitt Brothers and Brent, Dunedin.

October 3.—Assay for gold of crushing-battery tailings from the Barewood Mine, for Mr. Andrew Hamilton.

October 4.—Assays for gold of concentrates from crushing-battery and of a sample of highly-mineralised quartz from the Barewood Mine, for Mr Andrew Hamilton.

October 10.—Assays for gold of blanketings from crushing-battery Barewood Mine, for Mr Andrew Hamilton.

October 29.—Assay of sample of quartz for gold, for Mrs. Heffernan, Dunedin.

#### DETERMINATIONS OF MINERAL AND ROCK SPECIMENS.

##### *Made by myself and not charged for*

December 4, 1893.—A specimen of a greyish-white ore in quartz from Preservation Inlet, sent by Captain Malcolm, proved to be arsenical pyrites containing only a trace of gold.

January 17, 1894.—A sample of a white soft mineral, found near Dunedin, sent by Mr C. Chapman, proved to be gypsum.

March 15.—A crystal of a dark-brown mineral from the West Coast, sent by Mr B. Hooker, proved to be garnet.

April 17.—A specimen of lead-grey ore, sent by the editor of *Witness*, proved to be stibnite (sulphide of antimony).

April 23.—Two metallic minerals impregnated in quartz, from Cromwell, forwarded by editor of *Witness*, proved to be galena and iron-pyrites.

June 12.—Examined and reported on a sample of asbestos from a lode in serpentine in the Gentle Annie Range, Arrow district, forwarded by O'Leary and Co., Gibbston.

June 20.—Examined and reported on samples of lignite and anthracite from Fairlie, sent by editor of *Witness*.

June 29.—Two reports on specimens of quartz rich in black manganese-ore (psilomelane), forwarded by editor of *Tapanui Courier*

September 23.—Two samples of black sand, forwarded by editor of *Witness*, proved to be—one hematite with a little magnetite, the other magnetite with some hematite.

October 4.—Two metallic minerals impregnated in quartz, forwarded by editor of *Witness*, proved to be arsenopyrite and galena.

October 20.—Deposit from a mineral spring on the Cheviot Estate, forwarded by editor of *Witness*, proved to be ferruginous and calcareous clay

A specimen of an intrusive dyke-rock, from the so-called Burnet's face in the Westport coal-mining district, forwarded by Mr N D. Cochrane, Inspector of Mines, proved on microscopic examination of thin sections sent with the specimen, and of others prepared by myself, to be quartz porphyry. Specimens of a rather decomposed rock from Ohika Bluff, also sent by Mr Cochrane, determined to be phyllite from their microscopic character, after vain attempts of preparing thin sections for microscopic examination.

#### DONATIONS TO THE MINING MUSEUM.

The rock and mineral collections of our Museum have during the year been enriched by a considerable number of specimens by many kind donors, as under :—

Mr A. Hamilton, the Registrar Eighteen specimens of rocks from Macquarie Island. Also a sample of black amorphous sulphur in small round pellets, concave on one side, from the Waitapu Valley, North Island. Further, from the Water of Leith Valley, near Dunedin, a specimen of

andesite, with a druse cavity, showing fine radiating crystals of aragonite, and, distributed over a mammillary coating of zeolitic matter fine transparent crystals of phillipsite.

Mr Thomas Esdaile Seven specimens of granite and gneiss from Brazil, ten specimens of rocks from the Thames Goldfield, the Crown Mine, Waihi, and Mount Tarawera, twelve specimens of rocks from the Hot Lakes district, North Island five rock specimens from Lyttelton Harbour, and six specimens of auriferous quartz from the Crown Mine, Thames district, two showing fine pseudomorphous crystals of quartz after calcite.

Mr. James Park, Director, Thames School of Mines One specimen of pearlspar, one of chlorite rock full of magnetite, one of quartz, and three of granite, from the King-country, North Island.

Mr N D. Cochrane, Inspector of Mines Seventeen specimens of rocks and minerals from different places on the West Coast, South Island, including coal, auriferous quartz, stibnite, scheelite garnetiferous granite, and mica-schist, and actinolite.

Mr W L. Neill Fine large crystal of black tourmaline in chlorite rock, from the Nelson district.

Messrs. Gibb and Macdonald Eight specimens of partly pure, partly altered, and chromite-bearing dunite, from the Dun Mountain, near Nelson.

Mr D. Wilkinson Eight specimens of tin-ore from Brookstead, Roy's Hill, and Rex Hill, Tasmania.

Mr C. Boydell Twelve specimens Port Chalmers breccia, showing inclusions of phonolite and other rocks.

Mr W Goodlet Three specimens of pitchstone-breccia, from near Oamaru.

Mr. J R. Don Four specimens of spherulitic felsite-porphry, from the West Coast, South Island, also a fine sample of asbestos, with specimens of the wall-rock, from a vein on the Gentle Annie Range, Arrow district.

Professor Shand Four specimens of obsidian from Mayor's Island, two of native sulphur from White Island, one of silicious sinter from Lake Rotomahana Terraces, and two of copper-ore from the Island of Kawau.

Professor Black One specimen of serpentine, one of magnetite, one of infusorial earth, and one of felspathic breccia from Mount Zeehan, Tasmania, one of rhactizite and one of mica from Stewart Island, one specimen of rhodonite from Ophir, Otago, two specimens of pitchstone-breccia, two of lithographic limestone, and one of chalcedony from Oamaru.

Mr P Fitzgerald A fine specimen of auriferous quartz, showing besides gold specks a coating of gold on galena, from the Phenix Mine, Skipper's Creek, Shotover district.

Mr Murray Russell A fine specimen of crystallized native copper, from the Burra Burra Mine, South Australia, and one of granite from the neighbourhood of Westport, New Zealand.

Mr G. V Allen Three specimens of andesite—one a rare glassy variety—from the neighbourhood of Port Chalmers.

Mr. Rogers Several specimens of rhodonite and of mixed oxides of manganese from the Dome Mountain and Waimea Plains.

Mr R. H. Walcott A specimen of crystallized rhodonite, associated with galena, from the Broken Hill Mine, New South Wales.

Most of the specimens enumerated have, after identification, been labelled and placed in the large glass cases. These cases have now however, become so overcrowded that it is real necessary to make some provision for new accessions of specimens, and a better display of the old ones. The mineral collection especially requires more space, and it is very frequently inspected by the students, because of its containing many species more characteristic than those of the teaching collection, and the overcrowding of the specimens leads to harmful intermixing of the labels. In my last year's report I recommended the provision of a new glass table-case for the purpose, but, on consultation with the Registrar, I think his recommendation of a number of glass-covered shelves along one of the best lighted walls of the room would be not only more convenient for inspection of specimens but also less expensive. In conclusion, I have to mention that since the previous session a number of the large stratigraphical and palæontological diagrams and pictures brought out by Mr Wilkinson from England last year have been hung on the walls of the Museum and lecture rooms, and, whilst being ornamental, form an excellent means of easy instruction to the students.

I have, &c.,

GEORGE H. F. ULRICH.

The Chancellor, University of Otago.

Director, School of Mines.

## II.—REPORT OF THE COMMITTEE OF THE COUNCIL OF THE UNIVERSITY OF OTAGO, APPOINTED 4TH APRIL, 1894.

Your committee understand that it is instructed to go fully into all matters connected with the revenue and expenditure of the University, and to offer such suggestions in the matter as may seem desirable, with the object of bringing the annual expenses within the annual income. Before dealing with details your committee desire to offer one or two remarks of a general character which will serve to explain the necessity for the proposals and suggestions subsequently made.

The committee have to place before the Council the fact that the annual expenditure, to which the Council under existing engagements and circumstances is committed, is in excess of the probable income by about £1,250 (if, as is anticipated, a loss of £500 is sustained on account of the Barewood Run), as shown by an appended statement.

This state of things has been brought about entirely by diminished revenue from the several endowments since the present engagements were entered into, as will be seen by the following particulars:—

1. Barewood This run was originally let in 1880 at a rental of £2,925 a year to Mr Proudfoot, and again after his failure let to Mr Pogson at £2,500 a year It was then reduced to £2,000,

and finally to £1750. The run is now surrendered altogether by Mr Pogson, though the Council has refused to accept. It is impossible to say what rent may be obtainable in the future, let it be assumed at £1,200.\*

2. Burwood and Mararoa This remains at the original rental—£1,300—till 1904.

3. Benmore Originally let to Messrs. Campbell for £3,600 a year, relet this year at £3,000 for a fresh lease for eighteen years.

4. Museum Reserve: Originally let at £916 13s. 4d. per annum, then reduced to £766 13s. 4d. Relet to Mr Brown this year for ten years at £616 9s. 2d.

5. House in Castle Street Formerly let at £72 a year, now let at £52.

Taking these figures it will be seen that the reductions in revenue are as follows Barewood Original rental, £2,925, reduced to £1,750, difference, £1,175. Benmore Original rental, £3,600; reduced to £3,000, difference, £600. Burwood and Mararoa Original rental, £1,300. Museum Reserve Original rental, £766 13s. 4d., reduced to £616 9s. 2d.; difference, £150. House in Castle Street Original rental, £72, reduced to £52, difference, £20. In all, £1,945.

The immediate falling-off during the past year lies in Barewood (unlet), probably £550—that is, assuming it can be relet at £1,200, Benmore, £600, Museum Reserve, £150 total, £1,300.

Against this must be set the margin of income over expenditure last year of about £300, leaving a present deficiency to be provided for of about £1,000, and it is on this estimate that your committee have proceeded, merely noting the fact that the decrease in revenue corresponds somewhat exactly to the decreased price of wool, the income of the University being derived exclusively from pastoral properties.

It is quite imperative, as a condition of the continued existence of the University in the present form, that the expenditure be reduced to a point within the limits of the income.

Your committee are unable to suggest any means of adding to the income, except by increasing the College fee from £1 1s. to £2 2s., which will produce about £200 a year additional income.

Expenditure.—The administration of the financial affairs of the University has been in the past economical and careful, and in some respects during later years even parsimonious, and your committee proceed to deal with the question of expenditure on the general principle that, in reorganizing the distribution of the funds, it is desired to cause as little disturbance as possible in the practical teaching work of the University. If it were possible to avoid altogether the ceasing to teach subjects which have hitherto been taught, such a result would be most desirable, but, at any rate, your committee think that changes of a radical character should be as far as possible avoided, and where this is impossible the changes should be minimised.

The main items of expenditure may be grouped as follows Professors' salaries, £5,400, lecturers' salaries, £1,400, Registrar, £250; attendants' salaries, £699, apparatus, £150, miscellaneous, £856, interest on loans, £900.

First, as regards professors' salaries, these come under different groups:—

First Group Professors Sale, Shand, Black, Scott, Parker, and Ulrich have life engagements with the University, Professor Shand's salary being paid by the Church Property Trustees, the other professors being paid by the Council. Professors Shand, Black, Sale, and Scott have been provided with houses, and this is in no way part of the original agreement. It is recommended that the sum of £60 should be charged to each of these four professors by way of house-rent, and that sum should be deducted from the salaries paid by agreement. The reduction under this head will amount to £240 per annum.

Second Group Professors Gilray and Salmond are paid by the Church Property Trustees, and your committee have no recommendation to make with regard to them, as their salaries do not come within their scope.

The most recently appointed professor, Professor F B de M. Gibbons, has no engagement for life with the University, nor does he have any residence provided. Your committee recommend the reduction of his salary by £100.

The reductions under the head of "Professors' Salaries" will therefore be £340.

Lecturers Your committee recommend that the services of Messrs. Dallas and Williams, as paid lecturers on French and German respectively, be dispensed with. The reduction under this head will be £100.†

Medical Lecturers It is in contemplation to reduce the salaries of the lecturers in the Medical School, as the necessity for making fresh appointments arises. Reductions have already been made, and it is thought that other changes must be effected. There are at present four lecturers at £150 and two at £100 a year ‡

Attendants Your committee recommend the following changes:—

	Present Salary.			Future Salary.			Reduction.		
	£	s.	d.	£	s.	d.	£	s.	d.
Janitor	75	0	0	70	0	0	5	0	0
Anatomical porter	128	10	0	115	0	0	13	10	0
Physics laboratory assistant	65	0	0	60	0	0	5	0	0
Chemist's assistant ..	82	0	0	75	0	0	7	0	0
Taxidermist	198	0	0	175	0	0	23	0	0
Museum janitor	96	0	0	88	0	0	8	0	0
Biological laboratory boy	10	0	0	10	0	0			
Assistant School Mines	45	0	0	40	0	0	5	0	0
	£699 10 0			£633 0 0			£66 10 0		

The reduction under this head will amount to £66 10s.

\* The rent actually obtained was £900 per annum for fourteen years from 1st January, 1895. † It was afterwards found that this could not be carried out at the present time. ‡ This has since been done—to £125 and £75 respectively.



**Apparatus** This item has already been greatly reduced, and your committee only recommend that expenditure under this head should under no circumstances be allowed to exceed £100 per annum. There will be a reduction under this head of £50 per annum.

**Miscellaneous** Under this heading your committee note several items which in its opinion should be reduced, *e.g.* Printing and advertising, from £170 to £100 reduction, £70. Insurance (2s. 6d. on £40,000), from £80 to £50, reduction, £30. Library, from £90 to £30, reduction, £60. Total, from £340 to £180, or a total reduction of £160.

If the calender were published in a smaller form, and no expense incurred for examination-papers printing, the first item might well be reduced by the sum set down. Insurance on £40,000 might readily be obtained at present at 2s. 6d. per cent.

**Library** This sum is set down at the annual amount required to procure magazines and journals of a scientific character

Your committee have endeavoured to get the rate of interest on the loan of £15,000 from the Government Insurance Department reduced, but without effect.

To sum up the above, we have—

Reduction in professors' salaries	£	s.	d.
	340	0	0
Reduction in lecturers' salaries	100	0	0
Reduction in staff salaries	66	10	0
General charges, apparatus	50	0	0
Miscellaneous	160	0	0
Total reductions	716	10	0
To this add College fees, say	200	0	0
	916	10	0

The figures will then stand as follows:—

**Future Receipts** Endowments (including Barewood at £1,200) £5,640, Museum endowment, £616, church trustees, £1,800, subsidy, School of Mines, £500, College fee of £2 2s., £400, interest on fixed deposits and miscellaneous, £100: total, £9,056.

**Future expenditure** Professors' salaries, £5,060, lecturers' salaries, £1,300, interest on loan, £900 attendants' salaries, £633 10s., miscellaneous, £696, Registrar, £250, apparatus, £100 total, £8,939 10s.

The alternative to reductions of this description is the dispensing with one distinct branch of the University curriculum.

The abolition of the School of Mines would result in the following reduction in expenditure Professor Ulrich's salary, £600, Mr Wilkinson's salary, £300 Mr Cutten's salary, £50, Mr Begg's salary, £75, incidentals, £75, or a total of £1,100, from which the sum of £500 at present annually granted by Government must be deducted, reducing the annual saving to £600.

The Medical School might be reduced to a two years' course again, and the salaries of six lecturers, amounting to £625, as well as some additional expenditure amounting possibly in all to about £700, would thereby be saved.

In submitting this report your committee feel that a very great responsibility has been placed upon it. The duty of suggesting that reductions should be made in the salaries of old and tried servants, some of whom have been in the service of the University for nearly a quarter of a century, is most distasteful. At the time when it would be more seemly to increase the salaries of the older officers your committee has to suggest a reduction.

Your committee feel sure, however, that, in the face of the iron facts above stated, the staff of the University will loyally co-operate with the Council, and not allow the usefulness of the University to be impaired, or its teaching force to be diminished.

If these suggestions are given effect to, the expenditure will be brought approximately within the income—that is, provided that the estimated rent is obtained from Barewood. But even so the margin is precariously narrow, showing nothing available for extraordinary requirements, or for any necessary repairs to buildings.

*Statement showing Reductions to be effected.*

	Previous Expenditure.			Reduction.			Future Expenditure.		
	£	s.	d.	£	s.	d.	£	s.	d.
Professors' salaries	5,400	0	0	340	0	0	5,060	0	0
Lecturers' salaries	1,400	0	0	100	0	0	1,300	0	0
Attendants' salaries	699	0	0	66	10	0	633	10	0
Miscellaneous	856	0	0	160	0	0	696	0	0
Apparatus	150	0	0	50	0	0	100	0	0
Registrar	250	0	0				250	0	0
Interest on loan	900	0	0	..			900	0	0
Totals	£9,655	0	0	£716	10	0	£8,939	10	0

[NOTE.—The report was adopted, but the clause increasing the College fee to £2 2s. is to be left for final decision at the December meeting of the Council, and is contingent on the result of the sale of the Barewood leases.]



### III. STATEMENTS OF ACCOUNTS.

*Balance-sheet for the Year ending 31st March, 1895.*

<i>Receipts.</i>	£	s.	d.	<i>Expenditure.</i>	£	s.	d.
Balance forward, 31st March, 1894	1 103	18	9	Salaries—			
Fixed deposits in Colonial Bank	1 343	5	6	Professors	5,075	0	0
Rents of reserves—				Lecturers	1 366	13	4
Burwood and Mararoa	1,300	0	0	Registrar	250	0	0
Barewood	450	0	0	Attendants	387	4	6
Barewood (79 of c)	10	18	3	Fees—Professors and lecturers	1 796	7	1
Benmore	3,000	0	0	Apparatus—			
Forest Hill	53	10	4	Chemical laboratory	80	8	3
Castle Street, house	26	10	0	Physical laboratory	55	9	2
Leith Street, houses	35	13	4	Biological laboratory	13	17	11
Church Board of Property	1,800	0	0	Medical School	174	9	4
Fees—				School of Mines	41	2	7
College	209	8	0	Repairs and alterations	23	15	11
Professors	1,786	19	1	Library	50	15	5
Interest—				Insurance	48	16	6
On fixed deposits	61	17	5	Water, fuel, and light	220	15	4
On deferred payment	29	11	0	Printing, advertising, and stationery	99	2	7
Government subsidy, School of Mines	500	0	0	Incidentals	26	7	4
Goldfields revenue	30	0	0	Interest on loan transferred to Interest Account	900	0	0
Burwood timber	22	11	8	Interest on overdraft	3	6	6
Incidental receipts	48	19	9	Refund of fees	7	7	0
Rents of Professors' houses	160	0	0	Expenditure on Leith Street house	24	4	4
Barewood, value of improvements received in lieu of rent	750	0	0	" Castle Street house	6	6	0
Barewood (79 c), value of improvements re- ceived in lieu of rent	37	16	3	" reserves, law costs	87	14	5
Payment in reduction of mortgage on Forest Hill (A. Macdonald)	100	0	0	" reports, surveys, and sale of lease of Barewood	454	11	11
				Special expenditure, purchase of pre-emp- tive, Barewood	200	0	0
				Transferred to Museum Account	39	2	6
				Balance account on 31st March, 1895—			
				Fixed deposit, Colonial Bank £1,443	5	6	
				Current account, " 1,006	10	2	
					2,449	15	8
				Less outstanding cheques	1,022	3	8
							1 427 12 0
	£12,860	19	4				£12 860 19 4

## Richardson Scholarship Account.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1894	754	14	1	Expenditure—Payment to holder	40	0	0
Interest—				Interest on overdraft	0	1	0
On fixed deposit	6	4	2	Investment—			
On mortgage	42	0	0	On mortgage	600	0	0
				On fixed deposit	145	2	6
				Bank, current account	17	14	9
	£802	18	3		£802	18	3

*Sir Walter Scott Scholarship Account.*

	£	s.	d.		£	s.	d.
<b>Balance, 31st March, 1894</b>	293	15	5	Expenditure—Nil			
				Balance, 31st March, 1895—			
				Investment on fixed deposit	285	0	0
				Current account	8	15	5
	<u>£293</u>	<u>15</u>	<u>5</u>		<u>£293</u>	<u>15</u>	<u>5</u>

*Taieri Scholarship Account.*

	£	s.	d.		£	s.	d.
Balance, 31st March, 1894	219	17	11	Expenditure—Nil			
Interest on fixed deposit	10	2	9	Balance, 31st March, 1895, fixed deposit	230	0	8
	<u>£230</u>	<u>0</u>	<u>8</u>		<u>£230</u>	<u>0</u>	<u>8</u>

*Women's Scholarship Account.*

	£	s.	d.		£	s.	d.
Balance, 31st March, 1894	535	6	9	Expenditure—Payment to holder	20	0	0
Interest on fixed deposit	9	15	3	Balance, 31st March, 1895, on fixed deposit	516	4	5
				Bank, current account	8	17	7
	<u>£545</u>	<u>2</u>	<u>0</u>		<u>£545</u>	<u>2</u>	<u>0</u>

*Macandrew Scholarship Account.*

	£	s.	d.		£	s.	d.
Balance, 31st March, 1894	662	17	0	Expenditure—Nil			
Interest on fixed deposit	32	15	4	Balance, 31st March, 1895, on fixed deposit	695	12	4
	<u>£695</u>	<u>12</u>	<u>4</u>		<u>£695</u>	<u>12</u>	<u>4</u>

*Museum Trust Account.*

Receipts—	£	s.	d.	Expenditure—	£	s.	d.
Rent of Museum Reserve	616	9	2	Maintenance of Museum	655	11	8
Transferred from General Account	39	2	6				
	<u>£655</u>	<u>11</u>	<u>8</u>		<u>£655</u>	<u>11</u>	<u>8</u>

*Macgregor Prize Fund.*

	£	s.	d.	Expenditure—	£	s.	d.
Balance, 31st March, 1894	95	18	7	Nil			
Interest on fixed deposit	4	5	6	Balance, 31st March, 1895, on fixed deposit	100	4	1
	<u>£100</u>	<u>4</u>	<u>1</u>		<u>£100</u>	<u>4</u>	<u>1</u>

*Stuart Prize Fund.*

	£	s.	d.	Invested in the Westport Coal Company's debentures	£	s.	d.
Receipt—Bequest	100	0	0	..	100	0	0

*Interest Account, Loan No. 2 (Building Purposes), 1882, £15,000 at 6 per cent.*

	£	s.	d.	Interest paid	£	s.	d.
From General Account	900	0	0		900	0	0

*Balances.*

<i>Cr.</i>	<i>Account.</i>	£	s.	d.	<i>Cr.</i>	<i>Bank.</i>	£	s.	d.		
General Account		1	427	12	0	General Account, Colonial Bank	..	1,006	10	2	
Richardson Scholarship		762	17	3		Richardson Scholarship Account		17	14	9	
Taieri Scholarship		230	0	8		Walter Scott Scholarship Account		8	15	5	
Women's Scholarship		525	2	0		Women's Scholarship Account		8	17	7	
Macandrew Prize Fund		695	12	4		Stuart Prize Fund		100	0	0	
Macgregor Prize Fund		100	4	1		Mortgage		600	0	0	
Stuart Prize Fund		100	0	0		Fixed deposits at Colonial Bank, 31st March, 1895		3	415	9	6
Walter Scott Scholarship		293	15	5				5	157	7	5
						Less outstanding cheques		1,022	3	8	
		<u>£4,135</u>	<u>3</u>	<u>9</u>				<u>£4,135</u>	<u>3</u>	<u>9</u>	

A. HAMILTON, Registrar

Examined and found correct.—JAMES EDWARD FITZGERALD, Controller and Auditor-General.

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