1893.

NEW ZEALAND.

EDUCATION:

THE UNIVERSITY OF OTAGO.

[In Continuation of E.-6, 1892.]

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

The CHANCELLOR to His Excellency the GOVERNOR.

YOUR EXCELLENCY,— University of Otago, Dunedin, 15th April, 1893.

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 for the year ending the 31st March, 1893:—

The classes for the year 1892 have been attended by the following number of students: Males —matriculated, 145; non-matriculated, 32: total, 177. Females—matriculated, 31; non-matriculated, 5: total, 36. Total on books, 213.

The degrees obtained, and the results of the November examinations, are as follows:—

Master of Arts.—J. A. Scott, with third-class honours in political science; F. V. Siedeberg, with first-class honours in mathematics; Agnes F. Hallenstein, with second-class honours in mental science; I. W. W. Hunter, with first-class honours in chemistry; J. Porteous, with third-class honours in physical science; P. Marshall, with first-class honours in natural science; T. A. Patterson, with third-class honours in mental science; Barbara M. Watt, with third-class honours in mathematics; C. O. Lillie, with third-class honours in physical science; W. W. Bird, with third-class honours in mental science; F. H. Campbell, with second-class honours in Latin and German; F. J. Ross, with second-class honours in Latin; J. Smyth, with second-class honours in mental science.

Honours in Science.—P. Marshall, first in natural science.

Bachelor of Arts.—C. R. W. Richardson, A. S. Morrison, Caroline McLeod, T. R. W. Coutts, Edith H. Pearce, Emma M. Rainforth, Mary Anne Sinclair, A. Doull, Mary E. Moore, W. J. Matheson, Jane B. Jamieson.

Bachelor of Science.—J. Chisholm, J. Rennie, B.A., I. W. W. Hunter, B.A.

Senior Scholarships.—A. S. Morrison, mental science; J. Chisholm, physical science.

John Tinline Scholarship.—Edith H. Pearce.

Bachelor of Arts, First Section.—H. G. Marsh, W. White, A. R. Falconer, J. Brunton, J. Pringle, J. Tamblyn, P. G. McLeod, Elizabeth J. Anderson, Eva N. Orkney, Margaret Gellatly, Louisa A. Downes, Rachel W. McKerrow, C. B. Snow, J. W. Mitchell, J. Collie, J. Robertson, Rose M. Davy, Edith Hodgkinson, Alice M. Baron, E. Pinder, R. Landreth, Janet Paterson, Katherine McGregor, A. Marshall, J. H. R. Fenton, Mabel Salmond, C. R. Bossence, A. H. Adams, J. A. Erskine, W. W. Brown.

Bachelor of Science, First Section.—A. J. Reid.

During the past year a Committee of the Council have devoted some time to a readjustment of the salaries hitherto paid to some of the Lecturers, and have also considered the appointment of the Medical Lecturers. The result has been that a small amount has been deducted from some salaries; and the Council are thus enabled to pay salaries to several Lecturers who have hitherto only received class-fees from their students. The Medical Lecturers have also received notice that their appointments will be deemed to be for the term of three years dating from the 1st of November, 1891. Several of the Lecturers in the Medical School—Drs. Batchelor, Colquhoun, and Ferguson—have received leave of absence for visits to England; and Dr. William Brown and Dr. H. W. Maunsell have forwarded some valuable models and diagrams for the Medical School museum. Dr. L. S. Barnett has been appointed to act in Dr. Colquhoun's absence.

Owing to the increase in the collections of the museum of the Medical School, two additional rooms have been allotted to the Medical Department. Mr. A. C. Purdie, the Lecturer on Geology, resigned his appointment on receiving the Directorship of the Kyneton School of Mines; and the work was undertaken by Mr. D. Wilkinson, the Lecturer on Assaying.

It is with great pleasure that the Council report that they have been able to offer, for the first time, the Women's Scholarship, accruing from the investment of a sum of money collected by the late Mr. Sperrey, Mrs. Burn, and Miss Dalrymple, from the ladies of Otago. The scholarship is of the value of £20 a year, and is held by Miss J. M. Polson.

The Richardson Scholarship was awarded to J. B. Howes.

The Council have had careful valuations made of the apparatus, chemicals, fittings, and the property generally of the University; and, finding that the estimated value of the insurable property (£57,000) was far beyond the amount covered by insurance, they made arrangements with the insurance offices to largely increase the amount insured for. The valuation of £57,000 does not include the value of the specimens in the Museum.

During the year, Professor T. J. Parker, F.R.S., Curator of the Museum, paid a visit to England, and devoted much time and labour to the interests of the University. The Council having voted the sum of £150 for specimens for the Museum and Biological Laboratory, many useful and instructive specimens have been secured, and exchanges made with several of the leading Museums. Professor Parker, just before leaving, received the degree of Doctor of Science from the University of London.

The Museum Reserve Endowment lease having expired, it was offered at auction in two lots with a view to obtaining a higher rental than that hitherto paid, £766 13s. 4d. The result, however, was that the gross rental now obtained is only £616 9s. 2d. By the Act, the Dunedin Athenæum receives one-tenth of all the revenue if the amount is over £700; under the new lease the Athenæum will receive nothing for the next ten years from this run. It will be difficult to properly support the Museum with the present revenue. The Council appointed Mr. W. Cutten to the lectureship on applied mechanics in the School of Mines, Mr. J. Thomson having resigned. Messrs. W. A. Stout, A. R. Barclay, A. Dallas, H. B. Williams, and M. Begg were reappointed for a term of three years to the lectureships previously held by them.

The Council propose to open the session of 1893 by celebrating the completion of the twenty-first year of University work. A general gathering of the friends of the University, its graduates and students, will be held. The following statistics will be introduced into the speech on the past work of the University, and are here inserted for your information: In the opening session of 1871 there was an attendance of 81 students, and the whole number of classes taken was only 121. In 1872, the number attending was 70; in 1873 it fell to 50, its lowest point. Taking periods of five years after that time, for 1877 the whole attendance was 76, the number of classes taken was 114, and the number of matriculated students was 19, or 25 per cent. of the whole. In 1882 the attendance was 122, the number of classes taken was 223, and the matriculated students were 43, or 35 per cent. of the whole. In 1887 the attendance was 168, the classes taken were 455, and the matriculated students numbered 99, or 59 per cent. In 1892 the attendance was 213, the classes taken were 568, and the matriculated students were 176, or 82 per cent.

The first year in which it was possible to obtain a degree was 1873. In the first quinquennium, ending 1877, only 5 degrees were obtained, and 1 student took honours; in the period ending 1882, 19 degrees were obtained, and 3 students took honours; in the period ending 1887, 56 degrees were obtained, 12 students taking honours; in the last period, ending in 1892, and including therefore the last examinations, 143 degrees were obtained, and 44 students took honours. Of the whole number of 223 degrees that have been obtained, 189 are in arts and science, 9 in law, and 25 in medicine.

Since the opening of the Medical School in 1875, 83 students have gone Home to complete their studies; 18 of them before it was announced, in 1883, that the medical curriculum would be completed, and degrees in medicine conferred by the New Zealand University, and 65 since that date. The whole number of medical degrees up to the present time is made up as follows: 21 have taken the degree of M.B., and 4 of these have subsequently proceeded to the degree of M.D.

The School of Mines, of which a separate report is appended, has had an average of about twenty students in attendance since the time when the staff was made more complete, and a diploma course instituted. Fourteen of the students have finished their courses and obtained diplomas, the most of them in several divisions of the school.

There is one point which the Council would specially note, that all classes have been open to women from the outset. Since 1872 women have been in regular attendance, and their numbers have increased from year to year. Last session 35 women were enrolled, 2 in the Faculty of Medicine, and the rest in the Faculty of Arts. Since the commencement 2 women have obtained the degree of B.A.; 10 have obtained the degree of M.A.; and 9 have taken honours. The Council believe that this was the first University in the British dominions to throw open its doors to women as widely as to men.

D. M. Stuart, D.D., Chancellor.

Enclosure No. 1.

ABSTRACT of RECEIPTS and EXPENDITURE for the Year ending 31st March, 1893.

Receipts.	£	s.	d.	*Expenditure.*	£	s.	d.
Balance forward, 31st March, 1892, Bank	479	0	1	Salaries—			
Fixed deposits	1,343	5	6	Professors	5,100	0	0
Rents—				Lecturers	1,400	0	0
Burwood and Mararoa	1,300	0	0	Registrar	250	0	0
Barewood	1,750	0	0	Attendants	399	9	6
Benmore	3,600	0	0	Fees—Professors and lecturers	1,610	3	6
Forest Hill	53	12	4	Apparatus—			
Castle Street, house	52	0	0	Chemical laboratory	33	10	3
Leith Street, houses	32	18	4	Physical laboratory	76	1	4
Church Board of Property	1,800	0	0	Biological laboratory	81	13	2
Fees—				Medical School	133	8	2
College	233	19	6	School of Mines	94	15	8
Class fees	1,668	19	6	Repairs and alterations	75	9	0
Interest—				Law costs	16	19	2
On fixed deposits	61	17	5	Library	81	17	7
On deferred payment	26	1	2	Insurance	115	13	0
Government subsidy, School of Mines	250	0	0	Water, fuel, and light	176	17	10
Goldfields revenue	61	4	0	Rates	172	12	6
Miscellaneous—				Printing, advertising, and stationery	160	2	6
Refund of insurance premiums	17	17	9	Incidentals	63	0	9
Balance of grant to physical laboratory for apparatus	24	17	4	Expenditure on Leith Street houses	21	3	4
Anatomy fees	15	7	0	Expenditure on Castle Street house	16	19	0
Refund of cost of chemicals (Goodlet)	2	10	0	Interest on loan, transferred to Interest Account	900	0	0
Burwood Timber Account	25	19	5	Reports on runs	40	4	0
First half-year's rent of new lease of Museum Reserve	308	4	7	Macandrew Scholarship, transferred to Macandrew Scholarship Account	25	0	0
				Special grant for Museum, specimens	100	0	0
				Transferred to Museum Account	8	12	7
				Fixed deposits in Colonial Bank	1,343	5	6
				Credit balance in Colonial Bank 1,047 4 3			
				Less outstanding cheque 436 8 8			
					610	13	7
	£13,107	13	11		£13,107	13	11

Richardson Scholarship Fund.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1892	738	8	9	Expenditure—Payment to holder	40	0	0
Receipts—Interest on mortgage	84	0	0	Balance, 31st March, 1893—			
Interest on fixed deposit	5	13	4	Investment on mortgage	600	0	0
				Investment on fixed deposit	132	6	4
				Bank current account	55	15	9
	£828	2	1		£828	2	1

Sir Walter Scott Scholarship Fund.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1892	292	8	5	Balance, 31st March, 1893—Payment to holder	15	0	0
Interest on debentures	15	13	6	Interest on debentures	285	0	0
				Bank currrent account	8	1	11
	£308	1	11		£308	1	11

Taieri Scholarship Fund.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1892	200	10	2	Expenditure—Nil	..		
Interest on fixed deposit	9	5	2	Balance, 31st March, 1893—			
				Fixed deposit	209	15	4
	£209	15	4		£209	15	4

Women's Scholarship Fund.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1892	522	16	8	Expenditure—Payment to holder	20	0	0
Receipts—Interest on debentures	15	17	7	Debentures	288	15	0
Interest on fixed deposit	8	18	2	Fixed deposit	207	7	2
				Bank current account	31	10	3
	£547	12	5		£547	12	5

Macandrew Scholarship Fund.

	£	s.	d.		£	s.	d.
Balance, 31st March, 1892	601	18	2	Expenditure—Payment to holder	25	0	0
Interest on fixed deposit	29	15	9	Fixed deposit	631	13	11
Advance from General Account	25	0	0				
	£656	13	11		£656	13	11

Museum Trust Account.

Receipts—	£ s. d.	Expenditure—	£ s. d.
Rent of Museum reserve	766 13 4	Athenæum, one-tenth of rent	76 13 4
Special grant from General Account ..	100 0 0	Maintenance of Museum	698 12 7
Transferred from General Account ..	8 12 7	Special grant to Professor Parker for Museum specimens	100 0 0
	£875 5 11		£875 5 11

Macgregor Prize Fund.

	£ s. d.		£ s. d.
Balance, 31st March, 1892	87 9 4	Expenditure	.. ..
Receipts—Interest on fixed deposit ..	3 18 3	Balance, 31st March, 1893	91 7 7
	£91 7 7		£91 7 7

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

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

Balances.

Cr. *Accounts.*	£ s. d.	*Cr.* *Bank.*	£ s. d.
General Account	1,954 1 1	General Account	1,047 2 3
Richardson Scholarship	788 2 1	Richardson Scholarship	55 15 9
Taieri Scholarship	209 15 4	Walter Scott Scholarship	8 1 11
Women's Scholarship	527 12 5	Women's Scholarship	31 10 3
Macandrew Scholarship	631 13 11	Debentures	285 0 0
Macgregor Prize Fund	91 7 7	„	288 15 0
Walter Scott Scholarship	293 1 11	Mortgage	600 0 0
		Fixed deposits in Colonial Bank	2,615 15 10
			4,932 1 0
		Outstanding cheques	436 8 8
			4,495 12 4
		Amount overdrawn	0 2 0
	£4,495 14 4		£4,495 14 4

A. Hamilton, Registrar.

Examined and found correct.—James C. Gavin, Assistant Controller and Auditor.

Enclosure No. 2.

Report on the School of Mines.

Sir,— University, Dunedin, 25th November, 1892.

In compliance with the request of the Council, I have the honour to submit the following report on the work and results of the School of Mines during the past session (1892).

The school was attended with satisfactory regularity by twenty-two (22) students, three of whom were casual students for two special classes only—viz., assaying and general geology; whilst the remaining nineteen were regular registered students, who entered with the intention of going through one or more of the courses of study prescribed in the calendar for the several divisions of the school.

Before giving an abstract of the work done by these nineteen students, I have to mention that, owing to various circumstances, a number of the students—since the school was first opened—did not hitherto strictly follow the curriculum prescribed in the calendar for the divisions they intended to qualify for. Of the above number three students, for instance, with the intention of gaining the B.Sc. degree, took other university classes, leaving the missed mining classes for future sessions, whilst several others, indifferent as to finishing the course in three years, took per year one or two classes less than prescribed, thus requiring a fourth year for completion. In former years it has also happened that students took more classes than prescribed during one session in order to have more time for the study of certain subjects during succeeding sessions. Failure in passing the examinations in a certain class, and the consequent necessity of attending the same class a second time, has also thrown students out of the prescribed course. It can, therefore, not with strict accuracy be stated that first, second, and third years' students have respectively passed the first, second, and third years' course of the division they have entered for. With this reservation the status of the nineteen regular students of the past session is as follows:—

Two students, who entered for the past session, passed through the first year's course.

Five students, who entered for last year's session, passed through the second year's course.

One student, P. Marshall, B.A., B.Sc., passed the first and part of the second year's course, and, with the intention of qualifying for the M.A. degree, prepared a paper on a petrographical subject, requiring much microscopic work and chemical investigation.

One student attended lectures in most of the technical subjects of the mining and metallurgical divisions, but did not enter for the respective examinations.

Two students of several years' standing require to pass in but one or two subjects more to become entitled to the diplomas and certificates of all the divisions of the school. One of them—P. G. Morgan, M.A.—has, in fact, already gained the certificate of the Surveying Division.

One student, who entered two years ago for the Surveying Division only, has passed the required examinations, and will be entitled to the certificate of this division on presenting satisfactory evidence of having been engaged in six months' practical surveying work.

Seven students of from three to five years' standing have completed their studies with success in the subjects prescribed for all or several divisions, and have been granted the diplomas of Associateship and the certificates of the respective divisions. These students are: R. H. Walcott (gained the diplomas of Associateship of the Mining, Metallurgical, and Geological Divisions, and the certificates of the divisions of Surveying and of Metallurgical Chemist and Assayer), F. B. Stephens (gained the diplomas of Associateship of the Mining and Metallurgical Divisions, and the certificates of the divisions of Surveying and of Metallurgical Chemist and Assayer), Edward A. Paterson (gained the diplomas of Associateship of the Mining and Metallurgical Divisions, and the certificates of the divisions of Surveying and of Metallurgical Chemist and Assayer), W. Fulton (gained the diplomas of Associateship of the Mining and Metallurgical Divisions, and the certificates for the divisions of Surveying and of Metallurgical Chemist and Assayer), G. D. Ahern (gained the diplomas of Associateship of the Mining and Metallurgical Divisions, and the certificates for the divisions of Surveying and of Metallurgical Chemist and Assayer), P. Fitzgerald (gained the diploma of Associateship of the Metallurgical Division, and the certificate of Metallurgical Chemist and Assayer, having passed the required examinations, he will also be entitled to the diploma of Associateship of the Mining Division, and the certificate of the Surveying Division, on submitting satisfactory evidence of having been engaged for twelve months in practical work in mines, and for six months in surveying work); D. B. Waters (gained the diploma of Associateship of the Mining Division, and the certificate of the Surveying Division).

With these seven students and other five who, I was informed, do not intend to proceed, the School loses this year in all twelve students, ten only remaining; but notice has already been received of four new students, and thus there is some probability of the lost number being made up again for next year's session.

The attendance of the classes and the results of the annual examinations in the subjects specially belonging to the Mining School are shown in the following table:—

Subjects.	Attendance.	Entered for Examination.	Results of Examination.			
			1st Class.	2nd Class.	3rd Class.	Failures.
Mineralogy	9	8	...	4	4	...
Petrography	7	6	1	2	3	...
General Geology	4	3	1	1	1	...
Palæontology	3	2	...	2	...	...
Mining	9	8	...	6	2	...
General Metallurgy	9	8	1	3	4	...
Special Metallurgy	8	7	3	3	1	...
Assaying, 1st course	9	9	7	2	...	...
Blowpipe Analysis	8	7	3	4	...	...
Surveying, 1st course	2	2	...	1	1	...
Surveying, 2nd course	8	8	2	4	2	...
Applied Mechanics, 2nd course ...	6	5	...	3	2	...

In addition to the classes in the above subjects, students, according to their standing, whether in their first, second, or third year, had also to attend the regular University classes in Mathematics, theoretical mechanics, theoretical physics, practical physics, theoretical chemistry, and practical chemistry; and one student, with the object of qualifying for the associateship in geology, also passed through the course in biology. With the exception of two students having failed in mathematics, no other failures are recorded in any of these subjects students respectively attended.

In compliance with the request of the Council, the Lecturers in Assaying and Surveying, Mr. Wilkinson and Mr. Begg, announced by advertisement in the newspapers that they would hold evening classes in their respective subjects for students not able to attend the day classes. The result of this step was that for the evening class in assaying two new students entered, but for the evening class in surveying there was no response. Mr. Begg held, however, two classes—one in the morning, the other in the afternoon, for the convenience of the students.

The work done for the public during the year in assays and determinations of minerals by the Lecturer in Assaying, Mr. Wilkinson, was as follows:—

Charged for at Fixed Rates.

March 7th.—Five assays of granite for gold and silver; for Mr. A. Ferguson, Christchurch.
March 21st.—Assay of sample of iron garnet sand for tin; for Mr. W. Reid, Dunedin.
April 8th.—Assay of pyrites for gold; for Messrs. Donald Reid and Co., Dunedin.
July 20th.—Assay of pyrites for gold; for Mr. H. F. Boddington, Fairfield.
August 8th.—Two assays of two samples of pyrites for gold; for Mr. H. F. Boddington, Fairfield.
August 29th.—Assays of tailings from Globe Company, Reefton, for gold; for Mr. Thomas Brydone, Dunedin.
September 9th.—Assays of tin-ore; for Mr. T. Lyders, Dunedin.

September 14th.—Assays of Maharahara copper-ore for copper, &c.; for Mr. J. C. Carr, C.E., Napier.

September 20th.—Assay of steel; for New Zealand Engineering Company.

September 21st.—Assay of pyrites for gold; for Messrs. Porter and Hocking, Barewood.

September 24th.—Assays of two samples of pyrites for gold; for Messrs. Donald Reid and Co., Dunedin.

October 10th.—Assay of pyrites for gold; for Mr. H. F. Boddington, Fairfield.

October 18th.—Assay of pyrites for gold; for Mr. H. F. Boddington, Fairfield.

October 25th.—Analysis of limestone; for Mr. Crosby Morris, Dunedin.

Not Charged for.

March 16th.—Assay of pyritiferous quartz for gold; for Mr. Malcolm Ross, Dunedin.

March 22nd.—Assay of garnet sand and crushed schist for tin; for Mr. J. Allen, M.H.R., Dunedin.

April 22nd.—Assays of samples of schist-ore rock and manganese-ore for silver; for Mr. J. T. Koeford, Milton.

May 20th.—Determination of iron in asbestos; for Mr. R. Paulin, Ngapara.

September 16th.—Assays of rock samples for tin and silver; for Mr. Melland, Dunedin.

September 22nd.—Determination of seven samples of minerals; for Mr. R. Paulin, Ngapara.

October 10th.—Assay of antimony-ore for silver; for Mr. G. M. Barr, Dunedin.

A considerable number of gratuitous determinations of minerals and rock samples have also been made by myself during the year; in fact, during the first part of the session hardly a week passed by without one or more such determinations, persons frequently calling at my private house for this purpose. I have hitherto not kept a list of the samples examined, and can, therefore, only mention from memory a few of the cases as under:

Oriental ruby, brought by Mr. W. Goodlet from Rimu, West Coast, Middle Island.

A collection of some thirty specimens of rocks and minerals from the Island of Borneo.

Garnets, from the neighbourhood of Oamaru.

Earthy vivianite (blue iron earth), from the Blue Spur mine near Lawrence.

A number of samples of mica-schist and other rocks impregnated with pyrites, supposed to be silver-ore or gold.

Rhodonite (bisilicate of manganese) from Nenthorn, &c.

In conclusion, I may be permitted to mention that our mineral and rock collections have been materially increased by numerous presents during the year, the most important being as under:—

Professor Black: A collection of some twenty specimens of the ores and other minerals of the mining district of Zeehan, Tasmania, including some valuable crystallized specimens of the rare mineral "chromite" (chromate of lead), also crystallized cerussite (carbonate of lead), sphalerite, siderite, &c.

Mr. W. Goodlet: A fine specimen of the interesting ruby-bearing boulder from Rimu, Westland.

Mr. A Hamilton: Fragments of moa bone, studded with small crystals of vivianite; also a number of specimens of the Port Chalmers volcanic breccia, showing inclusions of mica-schist, phonolite, nepheline, &c.

Mr. L. Neil: A collection of some forty specimens of rocks from the neighbourhood of the Portobello gold-mine and other parts of the Peninsula.

Mr. Thomas Esdaile: A number of interesting rock specimens from the neighbourhood of Oamaru.

Mr. P. Marshall: Rock specimens from Lyttelton Harbour and Wanganui.

Mr. F. B. Stephens: A collection of some thirty specimens of interesting rocks from Milford Sound.

Mr. D. Wilkinson: A number of fine specimens of native copper, cerussite, mimetite, galena and other minerals from Broken Hill, New South Wales.

Mr. Cochrane: Twelve specimens of auriferous quartz, from as many different mines in the Reefton district; also rock specimens from Cape Foulwind and neighbourhood.

Mr. J. Mouatt: Several fine large pieces of stibnite from the antimony mine, Waipori.

Most of the mineral specimens have been properly labelled and placed in the large glass cases for inspection by the students, whilst the rock-specimens are of great use in determinative petrography.

I have, &c.,

GEORGE H. F. ULRICH,
Director, School of Mines.

The Chancellor, University of Otago.

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