

SESS. II.—1897.

NEW ZEALAND.

EDUCATION: THE UNIVERSITY OF OTAGO.

[In continuation of E-6, 1896.]

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, 1897.

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 day of May, 1897:—

The classes have been attended during the past year by the following number of students: Males—matriculated, 174; not matriculated, 27: total males, 201. Females—matriculated, 32; not matriculated, 1: total females, 33. Gross total of students attending, 234.

The degrees and honours gained at the last November examinations of the New Zealand University are as follows:—

Master of Arts Degree: Margaret Smyth, Parker McKinlay, James Millar Thomson, William Gray, Alexander Samuel Morrison, Thomas Dunn, Frederick William Hilgendorf.

Honours in Arts: Frederick William Hilgendorf in natural science (zoology); Thomas Dunn, languages and literature (Latin and English); Parker McKinlay, physical science (electricity); James Millar Thomson, mental science; Margaret Smyth, mental science.

Senior Scholarships: John O'Shea, in Latin; George Frederick King Adams, in English and French; Joseph William Mellor, in chemistry; William Mawson, in natural science (botany and zoology); Colin Campbell Hutton, in mental science.

The John Tinline Scholarship: William Newlands.

M.B. and Ch.M.: Margaret Barnett Cruickshank, Arthur Edward Albert Palmer.

First Examination for the Degree of Bachelor of Laws: Reginald Moore, William Downie Stewart, Richmond Hanson Turton.

Second Examination for the Degree of Bachelor of Laws: George Herbert Roebuck Fenton, John Buchanan Nichol, Alexander Drummond Wilkinson.

LL.B. Degree: Ethel R. Benjamin, James George Stuart, M.A., Frederick William Platts.

Bachelor of Science: William Alexander McLeod, Joseph William Mellor.

First Section of B.Sc.: Winifrede Bathgate, James Malcolm McLaren, Sheddan T. Brugh, Henry Fawsitt Skey.

Degree of Bachelor of Arts: George Frederick King Adams, William Archibald Ballantyne, Andrew Nisbet Burns, Frank Foote, James Mitchell Ellis Garrow, Matthew Cochrane Henderson, Colin Campbell Hutton, William Mawson, William Newlands, John O'Shea, David Nichol Pryor, John Reid, John Robertson, John Robert Rutherford, Kate Blanche Lilian Webber.

First Section of the Degree of Bachelor of Arts: Annie Bauchop, Ivo E. Bertram, T. Brodie, A. J. Crawford, Linda C. Fenwick, A. J. Ferguson, Catherine G. Fraser, J. G. Fullarton, John Kinder, H. S. Leach, Charlotte E. MacGregor, S. A. Moore, J. Niven, R. A. Stenhouse, G. E. Thompson, Lawrence Thompson, Marion B. Thomson, Leslie E. Williams, H. F. Wilson.

Junior Scholarships of the University of New Zealand awarded this year are held by W. M. Thomson, Flora J. W. Hodges, Edith Lilian Brown, A. H. V. Morgan, J. T. Matheson, and A. N. Fell at this university.

The Stuart Prize for 1896 was awarded to Sheddan Thompson Brugh, in the Class of Natural Philosophy.

The Macandrew Scholarship in political economy to Andrew Galloway Cameron Millar.

Endowments.—The tenancy of the endowments is the same as last year. The mining claims on the Museum Reserve have increased in number, and complaint has been made by the tenant of the disturbance of the sheep by miners and their dogs. The Council have, however, come to an arrangement with their tenant which it is hoped will be satisfactory to both parties. The claim for compensation for land taken from the Barewood Run for the Otago Central Railway has not yet been settled, but it is hoped that a settlement will be effected within the next few months.

Loan.—This year the loan originally raised for building purposes of £15,000 fell due, and the Council repaid the £15,000 to the Government Insurance Department, who held the debentures. A fresh loan was raised locally for this purpose, and the money was obtained at the rate of $4\frac{1}{2}$ per cent. interest. Authority was obtained by Order in Council to borrow an additional £1,000 for the purpose of reclaiming the block of land near the University Buildings in Castle Street. This money was also raised locally, on debentures at $4\frac{1}{2}$ per cent. It is proposed to confine the Water of Leith by a concrete wall, and fill in that portion of the block which has been removed by the succession of floods in the Leith. A number of valuable building-sites will then be available for lease, and if taken up should return a substantial sum in addition to the interest on the amount of capital invested in the reclamation.

School of Mines.—The cyanide and crushing plant mentioned in the report last year as in contemplation has now been erected, and has been in working order since the end of August. The funds for the erection of the battery and cyanide plant were provided by a special grant of £500 from the department, and a payment of £250 of annual subsidy in arrear. The total cost of the erection and the incidental expenditure on alteration of building has much exceeded this amount. The additional cost of the machinery and its erection was £150 more than the grant.

An unusually large number of names were entered as applicants for admission to the School of Mines—more than forty—and the Council were therefore obliged to have the large room hitherto used as the mining museum fitted with desks and seats for at least forty students, and to have fresh provision made for the mineral and rock specimens, and the various mining models. A further supply of chemicals and apparatus for the assaying classes, and additional petrological microscopes were ordered, as absolutely necessary for the proper instruction of the classes. There are now fifty students attending classes. During the latter part of the year, after the session had terminated, a number of bulk samples were received for treatment at the battery. Mr. P. Fitzgerald, the lecturer on assaying, resigned his appointment at the end of the year, and was succeeded by Mr. F. B. Stephens. A new schedule of the duties of the metallurgist has been drawn up by the Mining Committee, and also regulations for the testing of samples at the School of Mines; these have been approved by the Council. The number of furnaces in the laboratory is quite insufficient for the number of students attending assaying classes, and at least five new furnaces are required, besides additional bench accommodation. The report of the Director of the School of Mines gives a summary of the work done during the year.

The Council again regrets to state that the revenue is barely sufficient to meet ordinary expenses. As pointed out in the last two annual reports, the present revenue from endowments does not leave any money available for advance in any direction. Its fixed engagements absorb the whole of the revenue. The reduction in the rate of interest on the loan from 6 per cent. to $4\frac{1}{2}$ per cent. is a material gain, but for the present it is counterbalanced by the extra expense of the floating of the new loan.

JOSHUA STRANGE WILLIAMS, Chancellor.

APPENDICES.

A.—BALANCE-SHEET for the Year ending March 31, 1897.

<i>Receipts.</i>			£	s.	d.	<i>Expenditure.</i>			£	s.	d.	
Balance forward from 31st March, 1896	..	..	1,673	4	1	Salaries—	..	..	..	..	..
Rent of reserves—						Professors	..	..	..	5,050	0	0
Burwood and Mararoa	1,300	0	0	Lecturers	..	..	..	1,275	0	0
Barewood	900	0	0	Registrar	..	..	..	250	0	0
Benmore	3,000	0	0	Attendants	..	..	..	346	11	0
Forest Hill	53	10	4	Fees—Professors and lecturers	..	..	..	2,155	3	0
Barewood (79 c)	10	18	3	Apparatus—						
Castle Street house	80	0	0	Chemical laboratory	..	..	..	86	1	9
Leith Street houses	22	10	0	Physical laboratory	..	..	..	40	19	8
Professors' houses	240	0	0	Biological laboratory	..	..	..	22	12	7
Church Board of Property	1,800	0	0	Medical School	..	..	..	192	18	2
Fees—						Repairs and alterations	..	..	..	34	19	10
College	225	3	0	Library	..	..	..	53	6	6
Professors'	2,331	10	0	Insurance	..	..	..	51	16	8
Interest on fixed deposits	58	11	9	Water, fuel, and light	..	..	..	197	4	7
Government subsidy, School of Mines, 1896,						Printing, advertising, and stationery	..	..	..	55	4	6
first moiety	250	0	0	Incidentals	..	..	..	19	7	3
Goldfields revenue—General	265	2	0	Interest on loan	..	..	..	924	19	11
Incidental receipts	53	11	11	Expenditure on Leith Street house	..	..	..	0	15	0
Refund from Museum Account	9	17	1	" Castle Street house	..	..	..	6	6	0
						Law costs	..	..	..	132	7	9
						Interest on overdrawn account	..	..	..	8	1	3
						School of Mines Scholarship	..	..	..	23	12	6
						Balance, 31st March, 1897	..	..	..	1,346	10	6
			£12,273	18	5					£12,273	18	5

School of Mines Account.

<i>Receipts—</i>			£	s.	d.	<i>Expenditure—</i>			£	s.	d.
Government grant for battery	..	..	500	0	0	Apparatus—Battery and cyanide plant	..	..	725	6	1
Half-year's ordinary grant, in arrear	..	..	250	0	0	Salaries of assistants	..	..	63	15	0
Battery returns from September	..	..	107	0	0	Balance, 31st March, 1897	..	..	67	18	11
			£857	0	0				£857	0	0

Museum Account.

Receipts—				Expenditure—			
£ s. d.				£ s. d.			
Rent of reserve	591	9	2	Salaries and maintenance	612	19	1
Goldfields revenue	31	7	0	Transferred to General Account (refund of previous advances)	9	17	1
	<u>£622</u>	<u>16</u>	<u>2</u>		<u>£622</u>	<u>16</u>	<u>2</u>

Richardson Scholarship Account.

Balance, 31st March, 1896				Expenditure—Payment to holder			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	772	0	3	Investment on mortgage	600	0	0
Interest on fixed deposit	6	1	7	fixed deposit	158	9	1
" mortgage	21	0	0	Bank balance, 31st March, 1897, Current Account	0	12	9
	<u>£799</u>	<u>1</u>	<u>10</u>		<u>£799</u>	<u>1</u>	<u>10</u>

Sir Walter Scott Scholarship Account.

Balance, 31st March, 1896				Expenditure—Payment to holder			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	298	0	5	Balance, 31st March, 1897—	15	0	0
Interest on fixed deposit	11	8	0	Fixed deposit	285	0	0
	<u>£304</u>	<u>8</u>	<u>5</u>	Bank, Current Account	4	8	5
					<u>£304</u>	<u>8</u>	<u>5</u>

Taiari Scholarship Account.

Balance, 31st March, 1896				Expenditure—Nil			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	240	17	8	Balance, 31st March, 1897, fixed deposit	250	3	5
Interest on fixed deposit	9	5	9		<u>£250</u>	<u>3</u>	<u>5</u>
	<u>£250</u>	<u>3</u>	<u>5</u>				

Women's Scholarship Account.

Balance, 31st March, 1896				Expenditure—Payment to holder				
£ s. d.				£ s. d.				
Balance, 31st March, 1896	530	17	0	Balance, 31st March, 1897—	20	0	0	
Interest on fixed deposit	11	10	5	Fixed deposit	£288	15	0	
"	9	10	4	"	248	6	9	
					537	1	9	
	<u>£551</u>	<u>17</u>	<u>9</u>	Less debit balance	5	4	0	
						<u>£51</u>	<u>17</u>	<u>9</u>
						<u>£551</u>	<u>17</u>	<u>9</u>

Macandrew Scholarship Account.

Balance, 31st March, 1896				Expenditure—Nil			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	696	17	11	Balance, 31st March, 1897, fixed deposit	663	10	2
Interest on fixed deposit	1	3	1	"	34	10	10
"	34	13	5	Bank, Current Account, 31st March, 1897	34	13	5
	<u>£732</u>	<u>14</u>	<u>5</u>		<u>£732</u>	<u>14</u>	<u>5</u>

Macgregor Prize Fund.

Balance, 31st March, 1896				Expenditure—Nil			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	105	4	1	Balance, 31st March, 1897, fixed deposit	100	4	1
Interest on fixed deposit	4	0	0	Bank, Current Account	9	0	0
	<u>£109</u>	<u>4</u>	<u>1</u>		<u>£109</u>	<u>4</u>	<u>1</u>

Stuart Prize Fund.

Balance, 31st March, 1896				Expenditure—Nil			
£ s. d.				£ s. d.			
Balance, 31st March, 1896	103	0	0	Balance, 31st March, 1897, debentures	100	0	0
Interest	3	0	0	Bank balance	6	0	0
	<u>£106</u>	<u>0</u>	<u>0</u>		<u>£106</u>	<u>0</u>	<u>0</u>

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

	£	s.	d.		£	s.	d.
From General Account	924	19	11	Interest paid to 31st December, 1896 ..	900	0	0
				" to date of repayment of loan ..	24	19	11
	<u>£924</u>	<u>19</u>	<u>11</u>		<u>£924</u>	<u>19</u>	<u>11</u>

Debentures Sales Account: £15,000 to repay Loan No. 2, £800 for Reclamation Works.

	£	s.	d.		£	s.	d.
158 Debentures issued, of £100 each, at 4½ per cent.	15,800	0	0	Old loan (No. 2) debentures paid off ..	15,000	0	0
				Transferred to Reclamation Loan Account	800	0	0
	<u>£15,800</u>	<u>0</u>	<u>0</u>		<u>£15,800</u>	<u>0</u>	<u>0</u>

Reclamation Works Account.

	£	s.	d.		£	s.	d.
From Debentures Sales Account.. ..	800	0	0	Balance, 31st March, 1897	800	0	0

Balances.

<i>Cr.</i>	£	s.	d.	<i>Cr.</i>	£	s.	d.	
General Account	1,346	10	6	General Account, Bank of New Zealand ..	1,378	4	8	
Richardson Scholarship.. .. .	759	1	10	Richardson Scholarship Account.. .. .	0	12	9	
Sir Walter Scott Scholarship	289	8	5	Sir Walter Scott Scholarship Account ..	4	8	5	
Taieri Scholarship	250	3	5	Macandrew Scholarship Account.. .. .	34	13	5	
Women's Scholarship	531	17	9	Macgregor Prize Fund Account	9	0	0	
School of Mines	67	18	11	Stuart Prize Fund Account	106	0	0	
Macandrew Scholarship.. .. .	732	14	5	Mortgage	600	0	0	
Macgregor Prize Fund	109	4	1	Fixed deposits	3,472	4	10	
Stuart Prize Fund	106	0	0					
Reclamation Works Account	800	0	0	<i>Dr.</i>	5,605	4	1	
				Women's Scholarship Account	£5	4	0	
				Outstanding cheques	607	0	9	
	<u>£4,992</u>	<u>19</u>	<u>4</u>			612	4	9
						<u>£4,992</u>	<u>19</u>	<u>4</u>

A. HAMILTON, Registrar.

Examined and found correct.—J. K. WARBURTON, Controller and Auditor-General.

B.—REPORT OF THE DEAN OF THE MEDICAL SCHOOL.

SIR,—

University of Otago, Dunedin, 12th July, 1897.

As requested, I beg to present the following report on the Medical School during the past year:—

Graduates.—Two of our students (Miss M. B. Cruikshank and Mr. A. E. A. Palmer) were admitted to the degrees of Bachelor of Medicine and Bachelor of Surgery of the University of New Zealand.

Attendance of Students.—The number of students attending classes this session is seventy-three, as against sixty-five in 1896, and fifty-nine in 1895. Eight of these have passed the second professional examination of the New Zealand University, and are in their last year of study. Twelve have passed their first professional examination, while the intermediate examination has been passed by twenty-three.

The following table shows the class attendance during the sessions 1895, 1896, and 1897:—

	1897.	1896.	1895.		1897.	1896.	1895.
Physics	19	24	16	Practical pathology	11	11	3
Practical physics	18	24	15	Surgery	22	10	15
Biology	21	22	18	Operative surgery	14	..	..
Practical biology	19	22	22	Clinical surgery	39	26	..
Chemistry	21	20	23	Medicine	20	13	6
Practical chemistry	18	25	20	Clinical medicine	12	14	..
Organic chemistry .. .. .	..	7	8	Medical jurisprudence and public health	8	2	3
Anatomy	33	24	27	Materia medica	19	18	9
Practical anatomy	31	25	28	Midwifery and gynaecology	21	12	9
Physiology	25	26	18	Diseases of the eye	12	..	4
Practical physiology	15	16	13	Mental diseases	12	..	5
Pathology	12	12	3				

It will be seen from the above table that not only has the number of students in the school increased, but also that a larger proportion complete their course here than was the case formerly.

Operative and Practical Surgery is now a distinct class, held during the summer session. This new arrangement enables the teacher to give much more thorough instruction in the very important matters dealt with than was possible when they were taken up as part of the winter course on Systematic Surgery.

The Anatomical and Pathological Museum, owing to lack of funds, has unfortunately not made much progress during the past year. A number of valuable specimens have, however, been

received, both from old students and from other medical men interested in the progress of the school.

Dunedin Hospital—The Trustees still show themselves anxious to advance the interests of the school by all the means in their power, and the Honorary Medical Staff continue cheerfully to render those services without which the school could not exist. A new operating theatre has been built. It is more conveniently situated than the old theatre, and is more suited to the requirements of modern surgery. A new *post-mortem* room is most urgently required.

The Chancellor, University of Otago.

I have, &c.,

JOHN H. SCOTT.

C.—REPORT OF THE CURATOR OF THE MUSEUM.

SIR,—

Few striking additions have been made to the Museum during the year. Among the most important are a very fine collection of pelagic invertebrates, received in exchange from the Calcutta Museum; a collection of Victorian birds' eggs, presented by Dr. C. Ryan and Mr. A. Le Soüef; specimens of the great Stewart Island kiwi, hitherto unrepresented in the collections; and some very fine fossil fishes, received in exchange from Professor H. A. Ward, of Rochester, U.S.A.; and the second recorded specimen of the scaled tunny. A ribbon-fish has also been secured, the skeleton of which will probably be valuable as an exchange.

During the early part of the year the taxidermist's time was fully occupied in mounting for exhibition a large sunfish.

The collection of mollusca has been rearranged, and the alcoholic collection of fishes and reptiles rearranged and relabelled. A collection of fossils is in course of arrangement.

I have, &c.,

T. JEFFREY PARKER,

Curator.

The Chancellor, University of Otago.

D.—REPORT OF THE DIRECTOR OF THE SCHOOL OF MINES.

SIR,—

University, Dunedin, 10th December, 1896.

I have the honour to submit the following report regarding the attendance, work, and results of annual examinations of the School of Mines during the past session (1896), together with remarks on the practical teaching facilities, and on other points affecting the future progress of the school.

The attendance number of students during the past session was thirty-eight, classed as thirty-two regular students for the full course and six occasional ones for special subjects—principally assaying—only. Of the thirty-two regular students, nineteen were old ones returned for the completion or further prosecution of their studies (as detailed further on), whilst the other thirteen comprised new entries, including one student who had the previous session attended as an occasional one. Ten of the new students entered for the first year's course of the mining division, though several with the intention of going through four years' study, in order to enable them to gain, in addition to the diploma of associate in mining, that of associate in geology, or the certificate of metallurgical chemist and assayer. Two students who had some years before gone through the first year's course of the mining division returned for the completion of their studies, and the thirteenth new student—being the holder of one of the three scholarships in mining established by the Hon. the Minister of Mines (Mr. Cadman), and tenable at the Otago University—entered for the study of the subjects of the geological division with the aim of gaining the B.Sc. degree in geology in the University of New Zealand. The number of students during the session of 1895 was twenty-seven, of whom only nineteen returned. The eight who did not return were three occasional students, two who had the year before entered as regular students, and three—viz., John Watt, Ernest Edwards, and John Orkney—who had finished their studies and passed the prescribed examinations, as stated in my last year's report. After producing certificates of twelve months' engagement in practical work in mines they have since each been granted the diploma of associate in mining, and, in addition, John Watt and John Orkney the diploma of associate in metallurgy, and Ernest Edwards the certificate of metallurgical chemist and assayer, to which they were entitled.

The attendance of the various classes by the thirty-two regular students was very satisfactory, only a small number having missed any lectures, and those mostly on account of illness.

The ten new students passed through the first year's course with the exception of five—two who did not attend mathematics, one who failed in this subject, one who failed in mining geology, and one who failed in theoretical chemistry.

Thirteen students passed through the second year's course of the mining division, save two who did not attend mineralogy—one who failed and one who did not sit for the examination in this subject. Three others did not take the classes in theoretical and practical physics; but as these, as well as the others who missed classes, have the intention of staying four years they can make up the deficiencies during next session.

Eight students—some of four years' and one of three years' standing—finished their studies during the past session, and are leaving the school, having successfully passed the examinations in all the subjects prescribed for several of the divisions, as under:—

W. A. Macleod, B.A. : Passed in all the subjects of the mining and geological divisions and that of metallurgical chemist and assayer, and is at present entitled to claim the diploma of associate

in geology and the certificate of metallurgical chemist and assayer, but requires to do an additional two months of practical mining work to entitle him to claim the diploma of associate in mining. He distinguished himself in the final examinations by passing first-class in all the subjects (seven) he required to attend in the mining and metallurgical divisions. During his mining-school course he also studied for, and was successful in gaining, the B.A. degree, and he is now sitting for the examination of the second section of the B.Sc. degree in the New Zealand University.

T. Sheddan Brugh: This student, about whom I had the gratification of reporting very favourably last year, has during the recent examinations again distinguished himself in gaining the Stuart prize in physics, and also passing first-class in the only subject—advanced assaying—he required to attend in the metallurgical division. Having passed in all the prescribed subjects, and fulfilled the condition of twelve months' practical work in mines, he became entitled to claim and was granted the diploma of associate in mining, and the certificate of metallurgical chemist and assayer. In his endeavours to gain the Mining Department scholarship (as mentioned in my last year's report) he was not successful, however, his competitor, W. H. Baker, a student of the Thames School of Mines, and now of our University, excelling him by the extraordinary performance of obtaining 100 per cent. in four of the eight subjects of the examination. During the past session he attended other University classes, enabling him to sit for this year's examination for the first section of the B.Sc. degree in the New Zealand University.

Arthur Mosley: Passed successfully examinations in all the subjects prescribed for the mining and geological divisions, and that of metallurgical chemist and assayer, and having also been engaged for twelve months in practical work in mines he became entitled to claim, and was granted, the two diplomas of associate in mining and in geology and the certificate of metallurgical chemist and assayer. Having taken special interest and gained considerable practical experience in battery work and gold extraction by amalgamation and the cyanide process, the lecturer in metallurgy and assaying (Mr. Fitzgerald) specially recommended him for carrying on the working of our testing plant for the public during part of the vacation, and he is now engaged in this work, with the sanction of the Council's mining committee. His intention is to engage in further study for gaining the degree of B.Sc. in mining engineering in the New Zealand University.

Douglas V. Allen: Having passed examinations in all the subjects of the mining and geological divisions and that of metallurgical chemist and assayer, and also fulfilled the conditions regarding twelve months' practical work in mines, he was entitled to claim, and has been granted, the diplomas of associate in mining and geology and the certificate of metallurgical chemist and assayer. During the past and previous sessions he attended other University classes to enable him to sit for this year's examination for the first section of the B.Sc. degree in the University of New Zealand.

Herbert E. Stevens: Has shown special ability and application by passing, during a three years' course, in all the subjects of the mining division and that of metallurgical chemist and assayer. In the recent examinations he gained first-classes in five and good second-classes in two of the seven subjects he attended. He is entitled to claim the certificate of metallurgical chemist and assayer, but requires to engage for over two months longer in practical mining work for qualifying him to claim the diploma of associateship in mining.

Thomas B. Wayne: Through passing the prescribed examinations and producing certificates of having been engaged for twelve months in practical work in mines, he became entitled to claim and was granted the diploma of associate in mining, and the certificate of metallurgical chemist and assayer.

Murray Russell passed all examinations required for the mining division and that of metallurgical chemist and assayer, and, having proved by certificates that he had worked the stipulated twelve months in mines, he became entitled to claim and was granted the diploma of associate in mining, and the certificate of metallurgical chemist and assayer.

F. D. Herstatt Ulrich: Having passed the prescribed examinations for the mining division and for that of metallurgical chemist and assayer, and produced satisfactory evidence of engagement for twelve months in practical work in mines, he became qualified to claim and was granted the diploma of associate in mining, and the certificate of metallurgical chemist and assayer.

With few exceptions all these students took advantage of learning, by the practical instruction and example of Mr. Fitzgerald, battery-work, and gold-extraction by amalgamation and the cyanide process, in working regularly four-hour shifts alternately from the time the testing of samples for the public was started.

In compliance with applications, Mr. Fitzgerald arranged evening-classes in assaying, which were attended by six occasional students, five of whom came regularly all through the session, whilst the sixth stopped away after about three months' work. As the afternoon classes for the sixteen regular students in the first and second courses of assaying (which need at least three hours each for three afternoons per week, and necessarily require to be held together for want of other free time) were rather crowded, and the five available smelting furnaces proved quite inadequate for continuous steady working of these students; two of them, whose other lectures fortunately permitted it, attended the evening classes also, much to their own convenience and that of the other students of the afternoon classes.

All the new students (eleven) who entered for the first year's course attended the evening class established by the St. John Ambulance Association, and were successful in passing the examination, and thereby gaining certificates of first aid as required by the regulations. On considering that the lecture-hours of the first year's course on any day of the week leave the hour free at which the ambulance class is generally held (which is not the case in the second and third year's courses), it was thought advisable to make attendance at that class part of the first year's course for the future, and prescribe it in the calendar,

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

Subjects.	Attendance.	Entered for Examination.	Results of Examinations.			
			1st Class.	2nd Class.	3rd Class.	Failures.
General (University)—						
Mathematics	11	11	1	4	5	1
Theoretical mechanics	7	7	...	4	3	...
Theoretical physics	11	12	2	5	5	...
Practical physics	6	6	1	2	3	...
Theoretical chemistry	13	13	2	4	5	2
Practical chemistry	12	12	6	5	1	...
Theoretical biology	3	3	...	1	2	...
Practical biology	3	3	...	3	...	...
Special (School of Mines)—						
Mining, first course	16	16	4	6	6	...
Mining geology	11	10	1	3	5	1
General geology	11	10	4	6	...	...
Palæontology	3	3	...	3	...	...
Mineralogy	11	10	...	4	5	1
Petrography	7	6	...	4	2	...
General metallurgy	6	6	2	4	...	...
Special metallurgy	6	6	3	3	...	...
Theory of assaying	9	9	3	5	1	...
Practical assaying, first course	9	9	6	3	...	...
Practical assaying, second course	7	7	5	2	...	...
Blowpipe analysis	12	12	4	8	...	...
Applied mechanics	5	6	3	3	...	...
Surveying, first course	9	9	5	2	2	...
Surveying, second course	5	5	5	...	...	...
Model drawing	9	9	7	2	...	...
Practical plane geometry } drawing {	11	11	8	3	...	...
Solid geometry }	4	4	3	1	...	...
Machine drawing	3	3	2	1	...	...
Totals ... ..	...	...	77	91	45	5

The twenty-four students who require to make use of the vacation for practical mining-work have by this time most probably all found places in gold- and coal-mines in Otago, on the West Coast (South Island), and in the Thames and Hauraki Districts (North Island). The chances of obtaining employment in the latter mining fields seemed, in fact, so favourable, according to news received by some of the students, that thirteen departed together by steamer for Auckland directly after the results of the annual examinations were published. Owing to the kind intercession of Mr. James Allen, M.H.R., the general manager of the Union Steamship Company (Mr. J. Mills) made a liberal reduction in the cost of a return ticket to Auckland from £7 10s. to £5, and extended the time of return to six months—a generous aid during the pursuance of their studies highly appreciated by the students. The manager of the Huddart-Parker Steamship Company has since also intimated by letter that he will in future treat our travelling students with the same liberality as the Union Steamship Company.

Regarding the number of students likely to attend for next year's session, it may reach sixty in case all the twenty-four old students return and all new applicants for entry are admitted. The number of these latter at present on the books is thirty-two, but additional ones will very probably come forth before the commencement of next session. For the special mining classes of the first year's course—mining geology and general geology (which are the same for all the five divisions of the school)—the enlargement and alterations of the present museum room, as sanctioned by the Council, will probably afford the necessary seating-space for so large a number of students; and, if not, Professor Shand's lecture-room, being free at the hours fixed for these classes, could be made use of, though with some inconvenience in the carrying about of models, specimens, and diagrams. But for three of the classes of the second and third years' courses—viz., assaying, petrography, and surveying—twelve students at the outside (which for assaying means twenty-four, as explained previously) can only be accommodated, and only on provision for the assaying class of five new smelting-furnaces, and for that in petrography of at least four additional petrological microscopes and a second machine for cutting and grinding rock-sections.

With regard to the assaying class last session, Mr. Fitzgerald wrote to me as follows: "I found that the laboratory accommodation was taxed to the utmost. I had sixteen students, two of whom luckily were unable to take the evening class, thus relieving the furnaces to a certain extent. I understand that five new furnaces are to be added, but I would draw attention to the fact that even with the new furnaces we could not accommodate more than twelve students in each course." For a class of twelve in petrography, and for any larger number than this in mineralogy, an

assistant demonstrator would be necessary, for the reason that in these subjects, more especially in petrography, each student requires special individual attention and instruction in microscopic examination and the preparation of rock-sections, and one man cannot possibly do this work and yet cover the ground prescribed in the calendar in the time available during the session. From the foregoing it will be seen that should, of the large number of students to be admitted for next session, more than twelve qualify for entering the session after next any of the above three classes, by passing the annual examination in mathematics and chemistry according to the Council's ruling, and the entry up to twelve goes by priority of application for entry to the school, then those above that number will have to wait for admittance to these classes till the succeeding session. Being free, however, to take other classes included in the curriculum, they can so arrange that their time for study is fully occupied during the interval. From conversation I had with many of the new applicants I found that a number of them are very deficient in necessary preliminary knowledge, and have, I am afraid, little chance of passing in mathematics and chemistry at the end of the first year's course; but, though I pointed this out to them, their intention of joining the school remained unshaken. On consideration of all circumstances, the pressure for entry to the school will most probably be confined to next session; but, should it be repeated to the same extent for the session after next, a limit would have to be placed on the number of admittances, otherwise the resources of the school in accommodation, apparatus, instruments, &c., would be totally inadequate: they would, in fact, require to be more than doubled in order to meet all the necessary demands for proper teaching.

For the purpose of rendering his lectures more interesting and instructive to the students, the lecturer in general geology, Dr. Don, prepared at his own expense about two hundred lantern-slides, illustrating geological features and occurrences in various parts of the world, many of them, as he informed me, being copied from the admirable reports and monographs of the United States Geological Survey. He also followed the same valuable course as last year regarding practical instruction in field geology, by making, with his students, three field excursions, of which he most liberally paid the greater portion of the expenses. The first excursion during one day took in various places of interest on the Otago Peninsula, especially the Blowhole and the limestone quarries of Sandymount, and the interesting occurrence of auriferous volcanic rock at Hooper's Inlet. The second excursion, which occupied five days during the midwinter vacation, was to Catlin's River and Kaitangata. At the former place three days were spent in the study of the fossiliferous beds of Cannibal Bay, Catlin's River, and Owaka, and of the remarkable results of marine erosion on the neighbouring sea-coast. On the return journey a day was devoted to the inspection of the celebrated Kaitangata Coal-mine and the very fine and large mining machinery connected therewith. The third excursion, occupying two days, had for its object the study of interesting geological features around Palmerston, of the Hampden beds enclosing the celebrated Moeraki boulders—gigantic septaries, so far unique in the world—next, of the fossiliferous series of Oamaru and of the Devil's Bridge. Dr. Don, on behalf of himself and the students, expresses thanks to the General Manager of Railways for extending the concession in railway return-fares from three days to eight days, so as to allow a longer stay at Catlin's; next, to Mr. W. P. Watson, the general manager of the Kaitangata Company, for permission to inspect the mine; and to Mr. J. Shore, the mining manager, for conducting the party through the workings, and in supplying sections of the workings illustrating the faulting of the coal-measures in that district. Dr. Don and the students are also very grateful to Mr. J. Paterson, the librarian of the Dunedin Athenæum, for permission to occupy his cottage during their stay at Catlin's River.

The resignation of Mr. P. Fitzgerald of his post as lecturer in assaying and metallurgy again deprives this department of the school of an able and energetic teacher, who performed his duties with exactness and conspicuous success. As one of our past students he certainly sets, however, a good example by his self-confidence and enterprise in trying to better his position by entering into private practice as an expert, and taking the principal active part in an undertaking to develop some of the neglected gold resources of this province.

Regarding the careers of others of our past students, I received during the year the following news: Thomas Butement has been for some time in the well-paid post of manager of a mine at Kalgoorlie, Western Australia, and he requests to be supplied with some copies of our calendar for the purpose of sending them to boards of directors of mining companies there in proof that our students are properly trained for mining management, whereby he hopes to open a fine field of employment for them in that country. A. Montgomery resigned his post as Government Geologist and Inspector of Mines in Tasmania in order to accept the highly-paid position of Chief Mining Engineer for the syndicate holding the mineral lands of the Kauri Timber Company, North Island. Edward Paterson and F. Stephens still hold good posts in the Transvaal, but may soon return to New Zealand, as they suffer too much in health by attacks of the African fever. W. Fulton left the Transvaal for New Zealand shortly after the outbreak of political disturbances, and soon obtained the appointment of Assistant Engineer in the service of an English mining syndicate in the Auckland District at a considerable salary. H. C. Boydell is manager of a mine in the Coromandel District, North Island; and D. B. Waters holds a similar position in the Woods Point District, Victoria. F. B. Allen, formerly Assistant Lecturer, has advanced to the position of Director of the Thames School of Mines, and P. Morgan has obtained the Assistant lectureship. Thomas Esdaile, soon after leaving the school last year, obtained a good position at a mine at Lake Austin, Western Australia, for erecting and managing cyanide extraction-works, but as the mine is likely to prove a failure, and his health is badly suffering from the climate, he has resigned his post and is expected to return to Dunedin at an early date.

Although the new testing plant has been specially reported on to the mining committee of the Council by Mr. W. Cutten, the lecturer on applied mechanics, under whose supervision it was erected, and also by Mr. Fitzgerald, who conducted its working since its completion, still I may be permitted to add here a few remarks concerning some alterations and additions which I consider would much improve its gold-saving facilities by amalgamation, and next in explanation of the

objects of the plant—in fact, its value to the mining public. Regarding the amalgamating appliances in direct connection with the mortar-box at present in use, they consist of two silver-plated and amalgamated copper-plates divided by a very shallow and narrow quicksilver riffle, and at the end of the second plate of a deeper quicksilver riffle from which the crushed material runs on to two blanket strakes. In the working it has now invariably been found that the shallow dividing riffle and the succeeding copper-plate retained but a small percentage of gold, while the deeper quicksilver riffle at the end caught a much larger quantity. This points distinctly to the advisability of interposing between the copper-plates, instead of the present shallow riffle, a so-called deep-drop riffle, say, of 8 in. drop, such as are used in sets of three with great satisfaction in some of the best crushing-mills in Victoria, and in cases quite to the exclusion of copper-plates. The second copper-plate would need to be only a few inches broad, and be followed by a shallow catch-riffle, following which again would come the blanket strake, some 4 ft. to 5 ft. larger than at present—an addition much needed for a more satisfactory saving of pyritous material. All these alterations and additions, which I beg strongly to recommend, can easily be effected, and at but a small expense—say, about £3. Regarding the value of the plant to the mining public, it consists, in my opinion, not so much in extracting the highest possible percentage of gold from any parcel of ore sent, but rather in the information imparted to the sender in the report accompanying the gold extracted. For he will find indicated in this report, as deducible from the results of the various assays, cyanide tests, and observations made in course of the trial, the most advisable treatment on the large scale for ore of similar character as the parcel sent, which may be by wet-crushing and amalgamation and use of the berdan, or the cyanide process for the concentrates, or by direct application of the cyanide process—*i.e.*, by dry-crushing and leaching of the crushed stuff by cyanide solution of a certain strength. There seems to be a belief amongst some Otago mining men that the direct use of the cyanide process, as just explained, is advantageous for auriferous quartz of every description, but this is a great mistake. For the ore of most, if not perhaps all, auriferous reefs of Otago occurring in schistose rocks, the direct process is quite unsuitable, and causes loss, owing partly to the general great diversity in the size of the gold particles enclosed therein, partly to its mullocky character or admixture of schistose rock. While the finest gold particles may yield to the cyanide solution in a few hours, the larger ones might require up to several days for this action, and consequently there is no limit fixable for the time of satisfactory leaching. And mullocky ore, or such mixed with schist, forms slimes so unctuous and impermeable that hardly any cyanide solution will filter through, even by the use of a strong exhauster. For these reasons senders of ore parcels should not unreservedly demand the use of the direct process for their ore, as was done in some cases, but leave the advisability of its application to the judgment of the operating metallurgist; for, if they do so, it stands to reason that they have to be satisfied with the results of the extraction, however unfavourable these may turn out.

The work done for the public since the date of my last year's report—25th November—by Mr. P. Fitzgerald, and since his departure by Mr. A. Mosley, in assays, analyses, and with the testing plant, and by myself, in the determination of minerals and rocks, was as follows:—

Assays and Analyses charged at Fixed Rates.

(Executed by Mr. Fitzgerald.)

December 14, 1895.—Two assays, one of quartz and one of concentrates, for gold; for Mr. R. Allen, Invercargill.

January 14, 1896.—Four assays of four samples of quartz for gold; for Mr. Gilbert, Christchurch.

January 15.—Four assays of four samples of quartz for gold; for Mr. Donald Reid, Dunedin.

March 31.—Assay of sample of quartz for gold; for Mr. R. Brunton, Waipori. Assay of sample of sandstone for gold; for Mr. Gilbert, Christchurch. Two assays of two samples of quartz for gold; for Mr. Reeves, jun., Dunedin. Assay of sample of quartz for gold; for Mr. Donald Reid, jun., Dunedin.

April 2.—Six assays of six samples of quartz for gold; for Mr. R. Lee, Dunedin.

April 9.—Cyanide test of concentrates for gold; for Mr. Donald Reid, jun., Dunedin. Assay of sample of quartz for gold; for Mr. G. H. Oatway, Dunedin.

April 14.—Four assays of four samples of pyritous quartz for gold; for Mr. G. H. Oatway, Dunedin.

April 15.—Assay of sample of concentrates for gold; for Mr. Proctor, Dunedin. Three assays of three samples of quartz for gold; for Mr. R. Lee, Dunedin. Assay of sample of pyritous schist for gold; for Mr. H. R. Wilkinson, Dunedin. Assay of sample of garnet sand for tin; for Mr. Pearce, Dunedin.

April 20.—Assay of concretionary iron-ore for gold; for Mr. Kirk, Dunedin. Assay of sample of sandstone for gold; for Mr. Kirk, Dunedin. Assay of sample of clay for gold; for Mr. Kirk, Dunedin. Assay of sample of marcasite for gold; for Mr. Kirk, Dunedin.

April 21.—Analyses of five samples of coal; for Mr. G. M. Barr. Thirteen assays of thirteen samples of quartz for gold; for Mr. A. Lorie, Dunedin.

April 23.—Assay of sample of quartz for gold; for Mr. R. Allen, Invercargill.

May 15.—Assay of concentrates for gold; for Mr. Proctor, Dunedin.

May 20.—Assay of sample from an alluvial deposit for gold; for Mr. Kirk, Dunedin. Nine assays of nine samples of quartz for gold; for Mr. P. Laing, Dunedin.

May 23.—Two assays of two samples of quartz for gold; for Mr. J. Trent, Christchurch.

May 29.—Two assays of two samples of quartz for gold; for Mr. P. Laing, Dunedin. Six assays of six samples of quartz for gold; for Mr. C. E. Pinder, Dunedin. Two assays of two samples quartz tailings for gold; for Mr. C. E. Pinder, Dunedin. Analysis of samples of shell marl; for Marshall's Pharmacy.

June 2.—Assay of sample of sandstone for gold; for Mr. Macfie, Dunedin. Assay of sample of tailings for gold; for Mr. C. E. Pinder, Dunedin. Assay of sample of tailings for gold; for Mr. L. O. Beal, Dunedin.

June 4.—Four assays of four samples of diorite rock for gold; for Mr. W. C. MacGregor, Dunedin. Assay of sample of quartz for gold; for Mr. Bair, Waitati. Two assays of two samples of quartz for gold; for Mr. A. Lee Smith, jun., Dunedin.

June 6.—Four assays of four samples of quartz for gold; for Mr. P. Laing, Dunedin.

June 8.—Two assays of two samples of sandstone for gold; for Mr. E. Kirk, Dunedin.

June 9.—Four assays of four samples of quartz for gold; for Messrs. Sargood, Son, and Ewen.

June 29.—Assay of sample of pyrite for gold; for Mr. Thomas, Christchurch. Assay of sample of quartz for gold; for Mr. J. A. Chapman, Dunedin.

July 29.—Assay of sample of tailings for gold; for Mr. R. Allen, Invercargill.

August 2.—Assay of sample of quartz for gold; for Mr. Walde, Queenstown. Three assays of three samples of quartz for gold; for Mr. J. Elliott, Roxburgh. Three assays of three samples of quartz for gold; for Mr. J. Begg, Westland. Assay of sample of sedimentary deposit from near the Wairongoa Mineral Springs for gold; for Mr. Thomson, Dunedin. Assay of a sample of quartz for gold; for Mr. G. L. Denniston, Dunedin.

August 3.—Seven assays of seven samples of quartz for gold; for Mr. R. Lee, Dunedin.

August 4.—Four assays of four samples of quartz for gold; for Mr. E. R. Smith, Dunedin.

August 8.—Assay of a sample of arsonpyrite for gold; for Mr. M. Waughorn, Dunedin.

August 10.—Two assays of two samples of quartz for gold; for Mr. E. Trythall, Dunedin. Assay of sample of quartz for gold; for Mr. R. Lee, Dunedin. Assay of sample of black ironsand for gold; for Messrs. Wright, Stephenson, and Co., Dunedin. Two assays of two samples of quartz for gold; for Mr. Simpson, Waitahuna.

August 13.—Three assays of three samples of felspathic dyke rock for gold; for Mr. Reynolds, Round Hill, Southland.

August 20.—Assay of sample of quartz for gold; for Mr. Sheppard, Hindon.

September 4.—Assay of sample of quartz for gold; for Mr. Green, Ophir.

September 22.—Two assays of two samples of quartz for gold; for Mr. R. Lee, Dunedin. Assay of sample of quartz for gold; for Mr. E. Trythall, Dunedin. Three assays of three samples of quartz for gold; for Mr. Robertson, Dunedin. Assay of sample of quartz for gold; for Mr. J. A. Chapman, Dunedin.

October 1.—Four assays of four samples of quartz for gold; for Mr. Crosswell, Napier.

October 9.—Assay of sample of quartz for gold; for Mr. R. Lee, Dunedin.

October 10.—Assay of sample of quartz for gold; for Mr. R. Allen, Invercargill. Assay of sample of quartz for gold; for Mr. Platts, Port Chalmers.

October 20.—Two assays of two samples of quartz for gold; for Mr. R. Lee, Dunedin.

October 23.—Assay of sample of quartz for gold; for Mr. Wilkinson, Dunedin. Two assays of two samples of dyke rock for gold; for Mr. Ward, Ophir.

October 31.—Three assays of three samples of quartz for gold; for Mr. E. Trythall, Dunedin. Assay of sample of quartz for gold; for Mr. G. H. Oatway, Dunedin.

(Executed by Mr. A. Mosley.)

November 6.—Assay of sample of quartz for gold; for Mr. Simpson, Dunedin.

November 14.—Assay of sample of quartz for gold; for Mr. Montella, Dunedin. Assay and analysis of ore for gold, silver, and copper; for Mr. L. Falconer, Kaikora, Hawke's Bay. Assay of quartz for gold; for Mr. G. Tacon, Clyde. Analysis of sample of scheelite for tungstic acid; for Mr. J. Souter, Dunedin.

November 18.—Two assays of two samples of black ironsand for gold; for Mr. P. McSkimming, Benhar.

November 19.—Assay of serpentinous talc schist for gold; for Mr. R. T. Webb, Christchurch. Assay of sample of quartz for gold; for Mr. G. D. Wilson, Kumara Junction.

Parcels of Ore treated by the Testing Plant.

The detailed reports of the treatment and yields of the parcels sent up to date, including results of assays and cyanide tests made in course of the work, were furnished to the Registrar, who forwarded them to the parties interested, but kept a copy of each report for reference. An abstract of the work done up to the present need, therefore, only here be given in order to show the good use mining men have so far made of the plant, and the advisability of its erection:—

(Treated by Mr. P. Fitzgerald.)

7 cwt. quartz by wet-crushing and amalgamation; for Parker and party, Roxburgh.

1½ tons quartz by wet-crushing and amalgamation; for Glover and party, Dunback.

2 tons quartz by wet-crushing and amalgamation; for Stoneburn Quartz Company.

1 ton quartz from Hindon by wet-crushing and amalgamation; for Dr. Macpherson, Dunedin.

5 tons quartz from Saddle Hill reef by wet-crushing and amalgamation; for Mr. J. R. Scott, Dunedin.

9 cwt. quartz by wet-crushing and amalgamation; for Messrs. Pitchers and Wetherall, Lawrence.

18 cwt. quartz by wet-crushing and amalgamation; for Messrs. Fowler Brothers, Nenthorn.

1 ton 1 cwt. quartz by wet-crushing and amalgamation; for Wright and party, Waitahuna.

10 cwt. quartz by dry-crushing and cyanide process; for Glover and party, Dunback.

1 ton quartz by dry-crushing and cyanide process; for Stoneburn Quartz Company.

1 ton quartz from Hindon by dry-crushing and cyanide process; for Dr. Macpherson, Dunedin.

18 cwt. of blanketings by cyanide process: for Mr. A. Lorie, Dunedin.

(Treated by Mr. A. Mosley.)

1½ tons quartz by wet-crushing and amalgamation; for Mr. Green, Ophir.

16 cwt. mixture of quartz and serpentinous talc schist by wet-crushing and amalgamation; for G. D. Wilson and party, Kumara Junction.

Determinations of Mineral and Rock Specimens.

(Made by myself, and not charged for.)

December 10, 1895.—A clayey mineral found on the slope of Flagstaff Hill by Mr. Booth, of Woodhaugh, proved to be halloysite, of no commercial value.

February 20, 1896.—Sample of mineral from Riversdale, forwarded by editor of *Witness*, proved to be common black hornblende with some quartz and felspar.

February 27.—Supposed precious stone from the Clyde district, sent by Mr. L. O. Beal, was found to be common amethyst, of no commercial value on account of flaws and cracks.

April 5.—White mineral found at Waikouaiti, forwarded by editor of *Witness*, proved to be a hydrous silicate of alumina allied to halloysite.

June 30.—A sample of fine black sand, forwarded by Mr. W. Motherwell, Ophir, was found to consist of titaniferous iron with a small percentage of magnetite. Two rock specimens from same district proved to be argillaceous mica schist coated with manganiferous brown iron-ore.

July 17.—A sample of coal from Fortrose, sent by editor of *Witness*, resembled pitch-coal, but was found to be so strongly impregnated with pyrite and to be generally so friable as to render it of very little value.

July 25.—Sample of rocky material supposed to contain gold, found near Oamaru, and sent by Dr. Garland, proved to be non-auriferous.

August 22.—Sample of rock from Raggedy Ridge, near Ophir, sent by Mr. W. Motherwell, and supposed to be of some value in containing gold and other metals, was found to be rather decomposed quartziferous phyllite mixed with micaceous quartz schist, all impregnated with small crystals of pyrite and magnetite; an assay gave a small trace of gold.

September 1.—Mineral specimens from western spur of Mount Cook, forwarded by D. M. Macfarlane, S.M., Hokitika: These specimens contained, in a matrix of quartz and tremolite, small crystals and granular patches of a red transparent mineral, supposed to resemble the Oriental ruby once found at Rimu, but the mineral proved to be common garnet of no value.

November 3.—Specimen of rock from the Inkerman Mine, Reefton, forwarded by Mr. G. Dixon, was found to be a fine-grained somewhat felspathic sandstone.

Information and Reports on Various Subjects.

(Furnished by myself without charge.)

December 3.—Information to editor of *Witness* about market price of aluminium.

December 10.—Information by letter to Mr. W. H. Young, miner, Hyde, about prospecting of quartz reefs.

April 4.—Furnished to editor of *Witness* instructions for the preparation of corrosive sublimate and nitrate of quicksilver, to be used for the amalgamation of copper-plates.

July 16.—Prepared for the Council of the Bendigo School of Mines, Victoria, at their request, a detailed description of our crushing and gold-extraction plant.

July 24.—Furnished information in answer to two inquiries—one from Watson Brothers, the other from Mr. A. Selby, Melbourne—regarding the occurrence and best mode of procuring scheelite in this province, to be used for the manufacture of fluorescent screens required for obtaining proper effects by means of the Röntgen X-rays.

DONATIONS AND ACQUISITIONS BY EXCHANGE TO OUR MINING MUSEUM.

Our collections of rocks and minerals have during the year been enriched by a considerable number of specimens—some specially interesting and valuable—by many kind donors, and some good exchanges have been made as under:—

Professor Black: Three fine specimens—viz., large garnet crystal, Amazon stone, and apophyllite from American localities, which I was permitted to pick out of a valuable collection, laid out for inspection at our laboratory by Mr. Ward, the proprietor of a large natural science establishment at Rochester, near New York, America.

By the exchange of five duplicate specimens of New Zealand rocks and minerals there were acquired out of the Ward collection just mentioned five fine mineral specimens—viz., rubellite, cyanite, cancrinite, fluorite, and calcite, also from American localities.

Mr. H. Clapcott: Two specimens of highly auriferous quartz from Macpherson's Reward Claim, Coolgardie, Western Australia.

Mr. James Park: Fine specimens of blue iron earth (vivianite) and of epsomite from the Thames district; one specimen of silver-ore from the Great Barrier Company's mine; several specimens of rhyolite and andesite from the Hauraki district, and one specimen of ruby rock from Rimu, West Coast, Middle Island.

Mr. F. Cutten: Two specimens of auriferous talc schist from the Mount Lyell Mine, Tasmania.

Mr. A. Hamilton, the Registrar: Two interesting rock specimens, one consisting of coarse-

grained schorlaceous granite in contact with fine-grained common granite, from Ruapuke Island; the other of highly-plicated phyllite from the Macrae's district.

Mr. Gow, Inspector of Mines: Large pebble and slice cut from a boulder of fine nephrite, found in the Teremakau River, West Coast, Middle Island; pebble of tertiary fossiliferous limestone overlaying gold drift at Maerewhenua, found at sea-coast, near Oamaru; three large pieces of scheelite, from Macrae's.

Mr. Joseph Martin: Eight rock specimens, comprising coarse-grained porphyritic granite, pegmatite, and gneiss, from Rio de Janeiro, Brazil.

Mr. McNeil: Two specimens of granitic rock, from Mount Balloon, Te Anau district—one predominantly composed of black biotite mica, the other of orthoclase and some quartz, with large enclosed plates of biotite.

Dr. Don: Interesting specimen of quartz, showing pseudomorphous crystals of quartz after calcite, from the Thames district, North Island.

Mr. Carew, S.M.: Several fine specimens of argentiferous cerussite (lead-carbonate) and galena, from the Broken Hill Proprietary Mine, New South Wales.

Mr. A. Mosley: One specimen of calc sinter from the Upper Shotover district, and one of mica-diorite from Tasmania.

Mr. Cheeseman, manager, Shag Point Coal Company: Several large pieces of carbonaceous clay shale, showing fine impressions of fossil ferns and seeds of *Araucaria* from Shag Point Coal-mine.

Mr. Edward Dunn, Melbourne.—Two rock specimens from the Thames district—one of sphaerulitic rhyolite, and the other of hypersthene andesite.

Mr. Murray Russell: Sample of very thin, platy alluvial gold from the West Coast, Middle Island; also a number of rock specimens comprising basalt andesite, from Picton and Lyttelton.

Mr. Reynolds: Sample of nearly 3 dwt. in weight of richly platinum-bearing sand washed from the gold-drift of the Round Hill, near Orepuki, Southland.

Mr. P. Fitzgerald: Four large pieces of scheelite, from Macrae's diggings, Otago.

Captain Malcolm: Large imperfect crystal of muscovite mica from the West Coast, near Dusky Sound.

Mr. Thomas Esdaile: Large collection of minerals and rock specimens illustrating the geology of the auriferous district of Lake Austin, Murchison Goldfield, Western Australia.

The specimens enumerated have been labelled and arranged in the large glass cases, with the exception of Mr. Esdaile's large collection from Western Australia last mentioned, which should be of special interest to our students, but unfortunately arrived in such a hopeless condition, through breaking and crushing in of the boxes it was originally packed in (labels and specimens being confusedly mixed together in a bag provided by the post-office), that it could not possibly be arranged without the assistance of Mr. Esdaile himself. This assistance seems, however, next to certain, according to notice received from that gentleman of his intended early return to Dunedin. The large glass cases are now so overcrowded with specimens as to scarcely hold any more; and, as the students frequently study these collections, the overcrowding often leads to misplacing and intermixing of labels, whereby the great advantage of close ocular inspection may not only be vitiated, but positive harm may be done through students learning to recognise minerals or rocks, but under wrong names. It is, therefore, a matter of great satisfaction to me—and will assure and enhance the instructive value of the collections—that in the proposal the Council have sanctioned for the rearrangement and alteration of the museum room, the provision of a series of wall cases and shelves is included, affording ample space for the proper display of the specimens without any danger of the intermixing of labels.

I have, &c.,

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

The Chancellor, University of Otago.

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