1896.

NEW ZEALAND.

EDUCATION:

THE UNIVERSITY OF OTAGO.

[In continuation of E.-6, 1895.]

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, 6th April, 1896.

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, 1896.

The classes have been attended during the past year by the following number of students: Males—matriculated, 145; non-matriculated, 40: total males, 181. Females—matriculated, 44; non-matriculated, 1: total females, 45. Gross total of students attending, 226.

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

Doctor of Science.—John Robert Don.

Master of Arts.—Miss Alice Maud Mary Baron, with third-class honours in physical science; Miss Christina Murray Cruickshank, with second-class honours in mathematics and physical science; George Howell Proctor, with second-class honours in English and German; Miss Rachel Winifred McKerrow, with second-class honours in Latin and English; Angus McNeil, with second-class honours in Latin and English; Edward Pinder, with second-class honours in mental science; Miss Janet Mary Polson; Miss Jessie Hamilton Rutherford, with first-class honours in English and French.

M.B. and Ch.M.—John Morton Matthews; Miss Emily Hancock Siedeberg; Andrew Stenhouse.

Senior Scholarships.—Parker McKinlay, physical science; Francis W. Hilgendorf, zoology; James M. Thomson, mental science.

Bachelor of Science.—Charles Ogilvie Lillies, Angus McNab, Miss Janet M. Polson.

Bachelor of Arts.—James A. Cowie, Thomas Dunn, William G. Grave, Frederick W. Hilgendorf, Robert Landreth, Parker McKinlay, Miss Mabel Salmond, Miss Margaret Smyth, James William Thomson.

Bachelor of Laws.—Ernest Cargill Cutten, Arthur Bryan, F. Haggitt.

Junior Scholarships of the University of New Zealand awarded this year are held by E. D. Hercus, S. C. Allen, and G. E. O. Fenwick, at this University.

Teaching Staff.—There has been little alteration during the year in the staff. Dr. Heinemann has been appointed lecturer on the German language, and Mr. N. Dallas was re-appointed lecturer on the French language, both appointments being for one year from the 1st of April, 1896. Professor Gibbons commences this session a course of lectures on political economy.

Scholarships.—During the year the following scholarships have been offered for competition:—The Richardson Scholarship, awarded to A. J. Crawford; the Walter Scott Scholarship, awarded to Stuart A. Moore; the Women's Scholarship, awarded to Miss Winifred Bathgate. All these scholarships are tenable for three years. The Stuart Prize for 1895 was awarded in the terms of the bequest to Mr. G. F. King-Adams.

Regulations.—In consequence of representations from several country students, the Professorial Board considered the question of holding the term examinations at various local centres for the convenience of the students who obtain exemption from attendance at lectures, mainly on the ground of residence at a distance. The Council approved of the following regulations (the students, however, did not avail themselves of the regulations at the last examination):—Regulation 1: In any town remote from Dunedin, but situated within the Educational District of Otago or Southland, candidates who are exempted from attendance at lectures may be examined in the papers set for the annual examination, provided that not less than four such candidates send the notice and pay the fee required in these regulations to the Registrar. 2: Every candidate for examination at any place remote from Dunedin shall give notice to the Registrar, on or before the 15th day of August, of his intention to come up for examination, of the place at which he wishes to be examined, and of the subjects in which he intends to present himself for examination. 3: Along with his notice every candidate shall send to the Registrar a fee of two guineas, to cover the cost of holding the examination, and also a fee of one guinea for each subject in which he intends to present himself for examination. 4: The Professorial Board will appoint the supervisor, and will also through the supervisor make all necessary arrangements for holding the examination. 5: Notice will be

sent to each candidate, not later than the 5th day of October, of the place and time of examination in each subject. The notice will be sent to the address furnished by the candidate.

Endowments.—A purchaser of part of the Forest Hill Estate, sold in 1881, has paid off a sum of £421, which remained as a mortgage on the land, and has received his deeds. The sum paid is now awaiting a suitable investment. The tenants of the run known as the Museum Reserve have made complaints about the disturbance of stock by the mining operations in progress at McPhee's Point, on the Taieri River, and complain that the proclamation of the whole run (11,000 acres) as a mining area, has been a serious injury to them. The Council has taken steps to make a claim for the land taken from the Barewood Run for the Otago Central Railway, and for the depreciation of the property by the severance of a portion of the run. Mining operations are still carried on at the quartz reefs on this run, but the return to the Council is very small.

The Council regrets to state that the general financial position, as disclosed by the appended balance-sheet, is confirmatory of the general statement made in last year's report, that the present revenue does not meet the fixed engagements of the Council and the ordinary current expenditure on the lowest possible scale. Any extraordinary expenditure which might be called for cannot be provided for, nor can proper provision be made for the laboratories, nor for such a very necessary adjunct to a university as the library.

School of Mines.—After considerable negotiations with the Minister of Mines, the Council are glad to be able to report that in a short time a complete cyanide and crushing plant will be erected in the School of Mines, the total cost of the whole plant being about £750. Besides being of the utmost importance in the systematic training of students in the working of the cyanide process, the crushing plant will be of great value to the local mining industry, as, for the first time, the school will be able to accept samples of some considerable bulk for treatment and report. Numerous applications have already been made for reports on several tons of tailings, &c.

The report of the Director of the School of Mines gives a summary of the work done during the year. Since the writing of the report a large number of students have come forward to join the school, so that at the present time all the class-rooms are full, and the furnaces and benches fully occupied. There are also the names of fourteen students already recorded who desire to commence their course next year. It is probable that not more than ten or eleven of the present students will complete their course this year and leave. The Director reports that already the class-rooms and laboratories are not sufficient, so that it seems imperative that further accommodation, in the shape of additional furnaces and microscopes, should be provided. This will necessitate a considerable outlay, and the state of the University funds appears to preclude the carrying-out of any expensive improvements. The sole additional income to the University from the increased number of students is only the single guinea college-fee from each student.

Museum.—The report of the Curator of the Museum, Dr. T. Jeffrey Parker, is appended.

The audited balance-sheet for the year ending 31st March, 1896, is appended.

JOSHUA STRANGE WILLIAMS,
Chancellor, University of Otago.

APPENDICES.

A.—BALANCE-SHEET, 1895-96.

Receipts.	£	s.	d.
Balance forward, 31st March, 1895—			
Current account .. £1,006 10 2			
Fixed deposits .. 1,443 5 6			
2,449 15 8			
Less outstanding cheques 1,022 3 8			
	1,427	12	0
Rents of reserves—			
Burwood and Mararoa	1,300	0	0
Barewood	900	0	0
Barewood (79 of c)	21	16	6
Benmore	3,000	0	0
Forest Hill	53	11	4
Castle Street, house	28	0	0
Leith Street, houses	23	14	4
Professors' houses	240	0	0
Church Board of Property	1,800	0	0
Fees—			
College	202	3	6
Professors'	2,003	8	5
Interest—			
On fixed deposits	82	7	8
On deferred payments	25	7	6
Government subsidy, School of Mines ..	500	0	0
Goldfields revenue	78	10	0
Burwood timber	11	14	9
Incidental receipts	4	2	7
Payment of mortgage (Macdonald) ..	421	4	4
	£12,123	12	11

Expenditure.	£	s.	d.
Salaries—			
Professors	5,050	0	0
Lecturers	1,178	1	8
Registrar	250	0	0
Attendants	370	16	3
Fees—			
Professors and lecturers .. .	1,883	19	0
Apparatus—			
Chemical laboratory	34	19	10
Physical laboratory	22	19	0
Biological laboratory	6	9	2
Medical School	68	0	0
School of Mines	52	2	4
Repairs and alterations	38	6	8
Library	88	1	8
Insurance	52	1	4
Water, fuel, and light	246	12	4
Printing, advertising, and stationery ..	102	16	6
Incidentals	31	13	3
Interest on loan	900	0	0
Expenditure on Leith Street house ..	7	8	0
" Castle Street house ..	6	6	0
" reserves	7	10	4
Law costs	14	10	4
Interest on overdrawn account	8	11	9
School of Mines scholarship	12	12	0
Transferred to Museum Account ..	16	11	5
Fixed deposits in Bank N.Z. £1,443 5 6			
Credit balance 781 16 3			
2,225 1 9			
Less outstanding cheques 550 17 8			
1,674 4 1			
Less overpaid 1 0 0			
	1,673	4	1
	£12,123	12	11

Richardson Scholarship Account.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	762 17 3	Expenditure—Payment to holder ..	40 0 0
Interest—		Interest on overdraft	0 2 0
On fixed deposit	7 5 0	Investment—	
On mortgage	42 0 0	On mortgage	600 0 0
		On fixed deposit	152 7 6
		Bank balance, current account, 31st March, 1896	19 12 9
	£812 2 3		£812 2 3

Sir Walter Scott Scholarship Account.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	293 15 5	Expenditure—Payment to holder ..	15 0 0
Interest on fixed deposit	14 5 0	Balance, 31st March, 1896—	
		Fixed deposit	285 0 0
		Bank, current account	8 0 5
	£308 0 5		£308 0 5

Taieri Scholarship Account.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	230 0 8	Expenditure—Nil	..
Interest on fixed deposit	10 17 0	Balance, 31st March, 1896, fixed deposit ..	240 17 8
	£240 17 8		£240 17 8

Women's Scholarship Account.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	525 2 0	Expenditure—Payment to holder ..	20 0 0
Interest on fixed deposit	25 15 0	Balance, 31st March, 1896, fixed deposit ..	527 11 5
		Bank, current account	3 5 7
	£550 17 0		£550 17 0

Macandrew Scholarship Account.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	695 12 4	Expenditure—Payment to holder ..	25 0 0
Interest on fixed deposit	26 5 7	Balance, 31st March, 1896, fixed deposit ..	696 17 11
	£721 17 11		£721 17 11

Museum Trust Account.

	£ s. d.		£ s. d.
Receipts—		Expenditure—	
Rent of Museum Reserve	558 4 7	Maintenance of Museum	574 16 0
Transferred from General Account ..	16 11 5		
	£574 16 0		£574 16 0

Macgregor Prize Fund.

	£ s. d.		£ s. d.
Balance, 31st March, 1895	100 4 1	Expenditure—Nil	..
Interest on fixed deposit	5 0 0	Balance, 31st March, 1896, on fixed deposit	100 4 1
		Balance, current account, Bank	5 0 0
	£105 4 1		£105 4 1

Stuart Prize Fund Account.

	£ s. d.		£ s. d.
Westport Coal Company's debentures ..	100 0 0	Expenditure—Prize	6 0 0
Interest	9 0 0	Debentures	100 0 0
		Bank, balance, current account	3 0 0
	£109 0 0		£109 0 0

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.	£	s.	d.	*Cr.*	£	s.	d.
General Account	1,673	4	1	General Account, Bank of New Zealand ..	781	16	3
Richardson Scholarship	772	0	3	Richardson Scholarship Account	19	12	9
Taieri Scholarship	240	17	8	Walter Scott Scholarship Account ..	8	0	5
Women's Scholarship	530	17	0	Women's Scholarship Account	3	5	7
Macandrew Prize Fund	696	17	11	Macgregor Prize Fund Account	5	0	0
Macgregor Prize Fund	105	4	1	Stuart Prize Fund	103	0	0
Stuart Prize Fund	103	0	0	Mortgage	600	0	0
Walter Scott Scholarship	293	0	5	Fixed deposits, Bank of New Zealand ..	3,446	4	1
					4,966	19	1
				Less outstanding cheques £550 17 8			
				„ overbanked .. 1 0 0			
					551	17	8
	£4,415	1	5		£4,415	1	5

A. Hamilton, Registrar.

Examined and found correct.—James Edward FitzGerald, Controller and Auditor-General.

B.—Report of the Director of the School of Mines.

Sir,— University, Dunedin, 25th November, 1895.

I have the honour to submit the following report on the work and the results of the School of Mines during the past session (1895), together with remarks on the practical teaching facilities and the future progress of the school.

The number of students during the session of 1894 was twenty-one, of whom thirteen only returned for the past session, the eight who left being three occasional students who had entered for special subjects only, and five who were classed as regular students for the whole course. Of these latter, two—Donald J. Matheson, B.A., and Harry C. Boydell, B.Sc.—had finished their studies, and have since been granted the diplomas and certificates gained by them, as mentioned further on. Of the other three, one was prevented by illness from continuing his studies, but is likely to return when convalescent. The remaining two have gone in for other occupations. The school received, however, an access of fourteen new students, bringing up the attendance number during the past session to twenty-seven—the largest, so far, since the foundation of the school.

Of the fourteen new students four entered for special subjects only—viz., one for general geology and assaying, one for assaying, and one for general and special metallurgy. Of the other ten, nine entered as regular students for the mining division. The majority, so far as I could learn, intend staying four years, so as to enable them to gain, in addition to the diploma of associateship in mining, the certificate of metallurgical chemist and assayer. The tenth new student entered for the purpose of gaining the diploma of associate in geology and the B.Sc. degree in the New Zealand University, he being the holder of one of the three scholarships in mining established by the Hon. the Minister for Mines (Mr. Cadman), tenable for three years at the Otago University.

The twenty-three regular students attended the various lecture courses with great regularity, and their present status is as follows:—

The ten new students passed through the first year's course, but one did not sit for the annual examination in mining geology, two did not sit for the examination in mathematics, and one failed in the examination in this subject. These four will, therefore, have to come up for the respective examinations next year.

Three students passed through the second year's course of the mining division. One of them, however, did not attend the examinations in mineralogy and mining, on account of illness, whilst another failed to pass in mathematics, and also missed two subjects of the prescribed course, in order to gain more time for preparing for the matriculation examination, and has resolved upon extending his course of study over three or four years more, if necessary, for passing in all the subjects of the mining and metallurgical divisions.

Seven students passed through the third year's course, but two of them failed in the examination in theoretical physics. Another, W. A. McLeod, B.Sc., who during the previous year had attended only two of the mining classes, had meantime been successful in gaining the B.Sc. degree, and partly made up for the deficiency in the mining classes during the past session. He, as well as the other six students, have to attend another year in order to complete the mining course, and, according to their intentions, qualify for the certificate of metallurgical chemist and assayer, whilst the two who failed in physics have, in addition, to retrieve these failures. Two of these students are also studying for the B.Sc. degree.

Three students—Ernest Edwards, John Watt, and John Orkney—have completed their studies and passed examinations in the prescribed subjects for the associateships in the mining and metallurgical divisions. John Orkney failed last year in mineralogy, but sat for examination again this year, and succeeded in passing. These three students are at present entitled to claim the diploma of associateship in metallurgy, but require to devote some more time to practical mining work to qualify them for the diploma in mining.

Regarding past students I have to state the following:—Thomas Esdaile, of seven years' standing, who failed last year in the annual examinations in mathematics and theoretical mechanics, and did not sit for the examination in mining, came up for the examinations again this year and was successful in passing in all the three subjects mentioned. This places him now in the position of being entitled to claim the three diplomas of associateship in mining, metallurgy, and geology, and

also the certificates of mine and land surveyor, and of metallurgical chemist and assayer, as, owing to his protracted studies and exemplary perseverance, he passed in all the subjects prescribed for the five divisions, and has also been engaged in practical mining work for a longer time than the twelve months required. His praiseworthy ambition urges him, however, still further, in so far as he is now sitting for the examination for the first section of the B.Sc. degree.

Donald J. Matheson, B.A., and Harry C. Boydell, B.Sc., applied for, and were granted, during the past session the diplomas to which they were entitled, as mentioned in my last year's report. D. J. Matheson, since leaving the school having been engaged the prescribed time of six months in practical surveying work—for which he sent in certificates—was granted in addition the certificate of mine and land surveyor. H. C. Boydell has been successful, since he left the school, in gaining the B.Sc. degree, for which he was preparing during the last two years of his mining course.

Applications having been received at the commencement of the past session for an evening class in assaying, Mr. P. Fitzgerald, the lecturer in metallurgy and assaying, at once arranged for such a class, and it was attended by three of the occasional students.

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

Subjects.	Attendance.	Entered for Examination.	Results of Examinations.			
			Class I.	Class II.	Class III.	Failures.
General: University Classes—						
Mathematics	14	13	...	6	4	3
Theoretical Mechanics ...	1	2	...	...	2	...
Theoretical Physics	4	4	...	1	1	2
Practical Physics	5	5	...	4	1	...
Theoretical Chemistry ...	9	9	1	3	3	2
Practical Chemistry	11	11	4	4	3	...
Advanced Practical Chemistry	1	...	...	...	...	...
Special: School of Mines—						
Mining (2nd course)	9	9	1	4	4	...
Mining Geology	11	10	3	2	5	...
General Geology	10	10	6	4	...	...
Mineralogy	3	3	...	2	1	...
Petrography	5	5	...	3	2	...
General Metallurgy	9	9	2	7	...	...
Special Metallurgy	10	10	3	5	2	...
Theory of Assaying	9	9	3	2	4	...
Practical Assaying (1st course)	9	9	6	3	...	...
Practical Assaying (2nd course)	4	4	2	2	...	...
Blowpipe Analysis	4	4	3	1	...	...
Applied Mechanics	9	9	2	5	2	...
Surveying (1st course) ...	3	3	1	...	2	...
Surveying (2nd course) ...	8	8	3	2	3	...
Model Drawing	8	8	6	2	...	...
Practical Plane Geometry (drawing)	8	8	5	2	...	1
Solid Geometry (drawing) ...	5	5	2	3	...	...
Mechanical Drawing... ...	7	7	3	4	...	...
Totals	...	...	56	71	39	8

Regarding individual cases of distinction embodied in the foregoing results, it is highly gratifying to record that one of the third-year students (Sheddan T. Brugh) who had already distinguished himself in the first and second year's examinations in mining subjects, has this year been successful in passing first class in seven and good second class in one of the eight examinations he attended. He is now preparing for examination for one of the three scholarships offered annually by the Hon. the Minister of Mines for competition by students attending Schools of Mines within the colony; his object being, if successful in obtaining the scholarship, to combine the study of the special mining subjects he still requires to pass in with the study of other subjects qualifying him as a candidate for the B.Sc. degree and for the associateship in the geological division of our school—the same as in the case of the scholarship student previously mentioned.

The authorities of the St. John Ambulance Association established during the past session two ambulance evening classes, and having on my representation considerately fixed the day and hour of the second class so as not to clash with certain University evening classes prescribed for the mining course, seventeen mining students were enabled to attend one or other of these classes (fourteen the second class), and with two exceptions succeeded in passing the examinations, and gained certificates of "First aid."

So far as known, all the students who looked out for them in time have this year been successful in finding places in New Zealand for practical mining work during the vacation—ten in Otago and West Coast coal-mines, four or five in Otago gold-mines, and some are reported to have found employment in gold-mines of the Thames District, North Island.

The attendance number of students for next year's session will probably exceed that of the past session. Counting the three students who, as before mentioned, have completed their studies and the four occasional ones who entered for special subjects only and whose return is doubtful, the school will lose seven students, leaving twenty to be relied upon with tolerable certainty to continue their studies; but, judging from numerous notifications received during the year, there will likely be an accession of nine or ten, if not more, new students. Under present conditions only twelve students could be accommodated in four of the classes.

The lecturer in general geology, Mr. J. R. Don, infused much interest and enthusiasm for the science amongst the ten students of his class by making four field excursions with them during the session—the best kind of practical instruction in geology, and which, no doubt, greatly contributed to the excellent results of the recent examination in the subject, comprising six first-class and four second-class passes. The first excursion, during one day, was to Highcliff and Hooper's Inlet, Otago Peninsula, for the study of the there prevailing volcanic rocks. The second, also during one day, was to the Wairongoa mineral springs and thence round through the Green Island country, for inspection of the old quartz workings and the Walton Park coal-mine. The third excursion, requiring two days, extended as far as Oamaru, for the study of the country around Palmerston, thence onwards of the Moeraki boulder and Hampden beds and of those of Oamaru and the Devil's Bridge. The fourth, of one day, was to the Blue Spur, near Lawrence, for inspection of the celebrated auriferous drift deposit, and the enormous fault by which it is affected, as also of the extensive elevating and sluicing operations of the Blue Spur Consolidated Company. Mr. Don very liberally paid the greater portion of the travelling-expenses connected with these excursions, and he expresses his special thanks to Mr. Howard Jackson, the general manager of the Consolidated Company, and to Mr. Loudon, the manager of the Walton Park coal-mine, for information and assistance kindly given to him and the students during the inspection of their mines. He also thanks Mr. Thomson, the owner of the Wairongoa mineral springs, for his kind permission to inspect his property.

Regarding the careers of some of our past students, about which I received information during the year, I may mention that Edward Paterson, to whose success in the Transvaal I referred in my last year's report, has since bettered his position as manager of cyanide works, and now earns a salary of £1,000 a year, with free residence. Walter Fulton has been successful in obtaining the appointment of manager of a mine near Johannesburg at a salary of £500 a year, with free residence and perquisites valued at £200 additional. Frank B. Stephens, the pioneer of our students in the Transvaal, held well-paying responsible positions there from the time he entered the country, but being always in delicate health he followed medical advice for a change of climate and went to Australia, where, soon after his arrival, he obtained a good position in Northern Queensland. The climate there proving, however, more harmful to him than that of the Transvaal, he had to resign the post, and after paying Dunedin a short visit, and not finding any favourable prospects in New Zealand, he returned to the Transvaal, and obtained there without any waiting a good position again. Other four of our past students—John Chisholm, H. C. Boydell, D. J. Matheson, and P. Morgan—are engaged in the Thames gold-mining district—J. Chisholm, I was told, as assistant-manager of a battery and cyanide works, and the others as practical miners, their intention being to devote three years to practical mining work for qualifying themselves for the metal mine-manager's examination of the New Zealand Mining Department.

There is every reason to hope that the practical teaching facilities of the school will be increased in a most important direction by the provision of a small model testing-plant for larger samples of auriferous quartz, concentrates, and tailings, enabling the students to learn practical battery-work, amalgamation, and the cyanide gold-extraction process on a scale sufficiently large for qualifying them to engage afterwards as assistants in, or as managers of, more extensive establishments of the same kind. Numerous applications were received at our laboratory during the year for testing auriferous material on a larger scale than by simple fire assay, but had to be refused for want of such a testing-plant, and miners, not only within this province, but even on the southern part of the west coast of this island, have been, and are still, obliged to send samples for testing over the great distance to the Thames School of Mines. Thus the expected provision of the plant, by the liberality of the Hon. the Minister of Mines (Mr. Cadman), besides greatly benefiting the metallurgical classes of the school, will meet an evident great need regarding gold-mining enterprise; and as our lecturer in metallurgy (Mr. Fitzgerald) thoroughly understands the practice of the above indicated processes, miners can confidently rely on the accuracy of the results of tests of any samples entrusted to him. The council being acquainted with the history of the movement (initiated by Mr. J. A. Chapman, one of our principal mining men in town) that led to the promise by the Hon. Mr. Cadman of a parliamentary money vote covering the cost of the testing-plant, I need here only relate some special incidents connected therewith, and how the case stands at the present time. When in the early part of the year the Hon. Mr. Cadman passed Dunedin on his travels through the Otago goldfields, accompanied by Mr. H. Gordon (Inspecting Engineer of the Mining Department), both gentlemen, at the invitation of Mr. James Allen, inspected our metallurgical laboratory, and expressed themselves satisfied with the space and convenience provided for a small testing-plant when the building was erected. Later on we received notice from Mr. Allen that the Mining Department required plans and estimates of cost of the necessary machinery and apparatus, including expense of erection, but with the proviso that the sum must not exceed £300. Mr. Fitzgerald thereupon at once prepared the plans, and assisted by Mr. Cutten (the lecturer in applied mechanics) I furnished the estimate of cost. Mr. Allen next informed us that Mr. H. Gordon, who, as the inspecting engineer of the Mining Department, had the matter in hand, was much interested in it, and proposed that we should obtain a plant that would really serve as a model for the students. Although generally approving of the nature and relative positions of the different parts of the plan proposed by us—namely, five horse-power gas-engine, three-stamper battery with

amalgamated copper plates and blanket-strakes, berdan basin, cyanide apparatus capable of treating up to a ton in weight of material and a small roasting furnace—still Mr. Gordon wished a small rock breaker to be added to the battery, and requested some further information regarding the proposed position of the battery. This was supplied without delay, and now, quite recently, Mr. Gordon, in a letter to Mr. Allen, made the further request for a plan and cross-section of the part of the building proposed for the plant, together with accurate levels of the ground between the building and Leith Street, where a rock embankment offers a fine foundation and good height for the battery with easy access from the street—a position which we were originally very anxious to choose, but found that the cost of preparing the ground and of the necessary housing-in of the battery would bring the total cost of the plant considerably above the stipulated limit of £300. Mr. A. Begg, our lecturer in surveying, having kindly promised to furnish the required plans and levels at once, we may now hope to receive soon authority from the Mining Department to commence preparations and order the plant, so as to have it in working order in the early part of next year.

In conclusion, I have to mention that Mr. J. R. Don, the lecturer in geology, has rendered an important service to the class in petrography by having the machine for grinding thin rock sections provided with apparatus permitting the slicing of rock specimens with the use of emery, the grinding down of the thin slices produced being far more expeditious and in other respects more satisfactory than the method before available of knocking off chips from the specimens and rendering these thin enough by grinding.

I have, &c.,

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

The Chancellor, University of Otago.

C.—REPORT OF THE CURATOR OF THE MUSEUM.

SIR,—

During the year considerable progress has been made with the cataloguing of the Museum. With the assistance of Mr. G. H. Barber, the card-catalogue of the vertibrates—both general and New Zealand collections—is now nearly complete.

In the early part of the year a good deal of time was devoted to the mounting and cataloguing of the collections made in the islands visited by the "Hinemoa," in February, 1895, when His Excellency, Lord Glasgow, was good enough to include Professor Parker among his party, and to allow the Taxidermist, Mr. Jennings, to accompany the expedition.

A large collection of zoological and ethnological specimens has been received from Miss S. D. Shand, of the Chatham Islands, and Mr. R. Henry, Curator of Resolution Island, has forwarded some interesting examples of the fauna of the West Coast Sounds. Towards the end of the year the collections of New Zealand zoology were enriched by the purchase of a full-sized sunfish (*Orthagoriscus mola*) which has since been successfully mounted.

The general zoological collections have been increased by a large number of interesting specimens, some presented by the Australian Museum, others collected by the Curator during a visit to Sydney, and by a fine series of deep-sea minerals from the Indian Ocean, received in exchange from the authorities of the Indian Museum, Calcutta.

A beginning has been made in the rearrangement of the general collection of shells in accordance with a more modern classification. By concentrating these specimens into a smaller number of cases, it is intended to make room for a typical collection of fossils, arranged stratigraphically.

To the educational portions of the collections have been added very fine disarticulated skeletons of the Perlon Shark (*Hexanchus*) and the New Zealand Skate, both prepared by the process of impregnation with glycerine jelly. In each case the names of the principal parts of the skeletons are indicated by means of labels. It is hoped that these specimens will be followed by others, illustrating the higher vertibrate groups.

I have, &c.,

T. JEFFREY PARKER,
Curator.

The Chancellor, University of Otago.

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