1878. NEW ZEALAND.

EDUCATION.

PAPERS RELATING TO THE CANTERBURY COLLEGE.

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

No. 1.

STATEMENT by the CHAIRMAN of the BOARD of GOVERNORS.

At the annual meeting of the Board of Governors of the Canterbury College held in July, 1878, the Chairman, W. Montgomery, Esq., M.H.R., made the following statement respecting the progress made and the work done in the several departments during the year:—

The number of students who attended lectures during the past year ending 30th June was ninety-seven. Of these, twenty were matriculated to the New Zealand University, and of them three held senior University scholarships, and three held junior University scholarships. At the University examination, held in January last, of the four senior scholarships which were awarded two were gained by students of this College. The want of sufficient number of lecture-rooms has been much felt for some time past, and it was therefore a matter of urgent necessity that additional rooms should be provided. The new wing of the College, for which a tender has been accepted, will, when erected, afford ample accommodation for some time to come.

The Museum has been closed since the 15th of March last, in consequence of the alterations required, owing to the entrance to the building being changed from the Domain to Antigua Street; and also to allow the Director and his assistants to arrange in proper order in the new building the large and important collection. Many new and valuable specimens have been received and are now being put in their places. The Director expects that the Museum will be reopened to the public in being put in their places.

about six weeks from this date.

The library has received during the past year considerable additions to the books previously in stock. Eight hundred and fifty volumes have been added to the circulating department, and 328 to the reference library. There are now in the reference department 5,020 volumes, and in the circulating department 5,600. Orders have been sent to England for 750 volumes. Some of these will replace in the circulating library books worn out by use; some are duplicate works of popular authors, and some are new books. There were 836 subscribers to the circulating library last quarter. The reading-rooms have been regularly supplied with the leading English periodical and English and colonial newspapers. These rooms are open to the public from 8 a.m. till 10 p.m.; the library from

10 a.m. till 9 p.m.

The Girls' High School was opened in September last, and during that term ninety pupils attended. During the first term of 1878 there were 115 pupils. The number this term is ninety-nine, the winter season affecting the attendance. The Inspector-General visited the school last month, and afterwards furnished a report to the Minister of Education, who transmitted a copy to the Board. This report is on the whole very favourable, and shows that the school is making satisfactory progress. The staff of teachers consists of the lady principal and four assistants. In addition to those, there are five teachers who give instruction in extra subjects. The section of ground on which the school is built being only a quarter of an acre, three adjoining sections have been rented to afford space in which the pupils can take exercise. Owing to the limited accommodation in the building there was no room which could be used as a kitchen in which the pupils attending the schools could be instructed in cookery; but the necessity of providing the means of such instruction has not been overlooked, and this no doubt will be considered when plans for the new building, proposed to be erected near Cranmer Square, are in

The School of Agriculture is in course of being established. Four hundred and two acres of land have been purchased near Lincoln Railway Station, and tenders have been called for the school buildings. There will be accommodation at first for twenty students. The Director of the school was appointed in March last, the Board having previously, by advertisements in the New Zealand and Australian newspapers, requested candidates to send in their applications. The gentleman appointed in the control of the school was appointed in the school was appointed in the control of the school was appoin furnished first-class testimonials as to character, and practical experience in farming, combined with the scientific knowledge required for giving instruction to the students. The buildings will probably

be completed in twelve months, when students will be received.

Plans for the Boys' High School have been prepared, and tenders received, which will be laid before the Board to-day. It will take twelve months to complete the buildings. When ready for occupation, it is anticipated a competent staff of teachers will be ready to enter on their duties. The site for the High School at Timaru has not yet been decided on, but negotiations are now in progress.

A sum of money was voted last session of the Assembly for the establishment of a School of Mines. Orders have been sent to England, Germany, and Victoria for models and metallurgical specimens. Letters have been written to Professor von Hochstetter, Mr. Thureau, of Victoria, and the Registrar of the School of Mines, London, requesting their kind assistance in the selection of the articles required. It was not thought advisable to make arrangements for engaging a lecturer until

after receipt of the apparatus ordered.

The estimates of income and expenditure for the year ending 30th June are on the table. Having given a summary of what has been done in the past year, I trust I may not be considered going beyond the proper limits if I express a hope that this Board will favourably consider the expediency of establishing a School of Art as a department of the College. I will not use any arguments to prove the great value of such a school, as very shortly the subject will be brought formally before the Board; but, at the close of one year and the commencement of another, I thought a matter of such importance might with propriety be mentioned.

No. 2.

EXTRACT FROM THE PROSPECTUS FOR 1878.

Chairman of the Board of Governors.—William Montgomery, M.H.R.

Professors.—J. M. Brown, M.A., late Snell Exhibitioner, Ball. Coll., Oxon.: Classics and English
Literature. C. H. H. Cook, M.A., late Fellow of St. John's College, Cambridge: Mathematics and
Natural Philosophy. A. W. Bickerton, F.C.S., Associate and late Senior Queen's Scholar, Royal School of Mines: Chemistry and Physics. Julius von Haast, Ph. D., F.R.S.: Geology and Paleon-

tology.

Lecturers.—Llewellyn Powell, M.D., F.L.S.: Biology. C. J. Foster, LL.D., and late Member of Senate of the University of London: Jurisprudence. Rev. C. Turrell, M.A.: French. J. von

Undergraduates.—Anne Jane Bolton, Helen Connon, Henry Cotterill, William Bookless Douglas, Alexander Frost Douglas, William Fidler, Frederick Fitchett, Thomas Scholfield Foster, Gertrude Grierson, James Hay, John Innes, Frederick William Smith, William Taylor, James Ronaldson Thornton, Edwin Watkins, James Reeve Wilkinson.

SYLLABUS.

Classics.

I. Pass Lectures.—1. Latin. A. Translation and composition lecture. The work will comprise: a. Lectures and examinations on Cæsar (Book IV.), Cicero (In Catilinam II.), Livy (Book III.), Virgil (Æneid, Book V.), and Horace (Odes, Book III.); b. Translation of unseen passages from the same authors; c. Exercises in Latin composition from Smith's Principia Latina (Parts IV. and V.); d. Examinations on portions of Smith's Student's History of Rome, Smith's Student's Latin Grammar, and the articles on Latin literature and antiquities in Smith's Smith's Smaller Dictionaries. B. Degree Lecture, for translation of the books prescribed for the University degree. For session 1878 the books are Cicero (Pro Milone, First and Second Philippics), and Terence (Andria, Phormio, and Heautontimorumenos).

2. Greek. Translation and composition lecture. The work will comprise: a. Lectures and examinations on Xenophon (Memorabilia, Book I.), Herodotus (Book III.), Euripides (Iphigenia in Tauris), and Homer (Iliad, Books XX. to XXIV.); b. Translation of unseen passages from the same authors; c. Exercises in Greek composition from Smith's Initia Græca (Part III.; d. Examinations on portions of Smith's Student's Greek Grammar, Smith's Student's History of Greece, and the

articles on Greek Literature and Antiquities in Smith's Smaller Dictionaries.

II. Honors Lectures.—(Philosophical Year.) 1. Latin. A. Literary lecture. The work will comprise: a. Lectures and examinations on Seneca (tragedies), Lucan, Statius, Phedrus, Virgil (Georgics), Ovid (Metamorphoses), Horace (Epodes and Ars Poetica), Lucretius, Plautus, Seneca (philosophical works), Pliny (natural history), Tacitus, Livy, Cicero (philosophical works), the Latin parts of Ritter and Preller's History of Philosophy and portions of Wordsworth's Specimens and Fragments of Early Latin; b. Examinations on Roman history, philosophy, grammar, and antiquities. B. Translation and composition lecture; a. Translation of passages at sight from the authors in use in the literary lecture; b. Translation of English into Latin prose. C. A course of lectures on the

philosophy and literature of Greece and Rome.

2. Greek. A. Literary lecture. The course will comprise: a. Lectures and examinations on Euripides, Aristophanes, Eschylus, Theognis, Hesiod, Homer, Lucian, Theophrastus, Aristotle (Metaphysics), Xenophon (Memorabilia), Plato (Theætetus), the Greek parts of Ritter and Preller's History of Philosophy, and Demosthenes (De Corona); b. Examinations on Greek history, philosophy, and Demosthenes (De Corona); b. Examinations on Greek history, philosophy. sophy, grammar, and antiquities. B. Translation and composition lecture—corresponding to honors Latin class B. C. The same as C under honors Latin.

In session 1878 prominence will thus be given to Roman and Greek philosophy and literature. In session 1879 prominence will be given to the history of Greece and Rome; and in session 1880 to the philology of Latin and Greek. The honors course will cover three years, and is intended to make the student acquainted with all the more important authors and questions of Latin and Greek literature and language.

H.—1c.

In the honors classes there will be senior and junior divisions; the senior will be expected to do all the work, the junior half the work. The junior divisions of the honors classes will be considered as pass classes and equivalent to the junior classes.

English Literature.

The work of the session will comprise: a. A course of lectures on the comedies of Shakespeare (during both terms); b. A course of lectures on Lyly and Chapman (during first term); c. A course of lectures on Swift and Pope and the literature of their times (during second term); d. Examinations on the general history of English literature, on special works or pieces of old authors, and on the rules of rhetoric and composition; e. Essays and exercises in English composition; f. A course of lectures on the language of Chaucer, Spenser, and Shakespeare (during both terms). a, b, and c will

occupy Monday night; d, e, and f Thursday night.

In session 1879 a will be a course on the tragedies of Shakespeare; and f a course on the vocabulary of English: its source and formation. In session 1880 a will be a course on the historical plays of Shakespeare; and f a course on the inflections of English: their history and significance. In

English accordingly there will be a three-years' course. b and c will vary from year to year. English will be considered an honors subject if the student take up all the papers in the annual

examination.

Mathematics.

First Year.—Euclid, algebra, and trigonometry for the B.A. pass examination.

Second Year.—Elementary mechanics and hydrostatics for the B.A. pass examination; higher parts of algebra and trigonometry, together with conic sections and the rudiments of differential calculus.

Third Year.—Differential and integral calculus; analytical statics and dynamics of a particle.

The parts of Euclid read are Books I., II., III., IV., and VI. In addition to the text, problems and examples will be set. The lectures in algebra and trigonometry during the first year, and those in mechanics during the second year, will embrace those parts of the subject prescribed by the University of New Zealand for the B.A. examination. The text-books used will be Todhunter's Algebra, Todhunter's Trigonometry, Parkinson's Mechanics, Besant's Hydrostatics. The other mathematical lectures during the second year will embrace the subjects which have hitherto been included in the examinations for the senior scholarships of the University of New Zealand. The lectures during the third year will be occupied with subjects to be taken by candidates for mathematical honors, for whom, if necessary, a more extended course will be provided. Those students who desire to take mathematics for a third examination will be required to pass in conic sections and differential and integral calculus.

Junior Chemistry.

Non-Metallic.—Simple chemical operations—The mode of formation and principal properties of the non-metallic elements—The atomic theory—Atomicity of the elements—Volumes and densities

Metallic.—Occurrence of the metals—Extraction from their ores—Properties and mode of manufacture of the principal metallic compounds—Simple tests for the metals.

Senior Chemistry.

Organic.—Classification of organic compounds—Constitutional formulæ of the principal radicles— Manufacture and properties of the more important hydrides, alcohols, ethers, and acids of the organic radicles-Manufacture and uses of the principal commercial organic compounds.

Analytical.—Blowpipe analysis and other tests by the dry method—Analysis of inorganic compounds and mixtures—Quantative analysis by measure and by weight—Ultimate organic analysis.

Physics.

(Two branches count as one subject for examination. In each branch there will be an elementary and an advanced course, and each course will be complete in one term.)

Heat.—Expansion of gases, liquids, and solids—Thermometers—Calorimeters—Conduction—Convection—Specific heat—Latent heat—Mechanical equivalent—Energy, kinetic and potential—Steam-engines—Radiant heat—Athermic and diathermic bodies—Reflection—Refraction—

Sound and Light. — Properties of the air -- Production, propagation, reflection, refraction, and velocity of sound—Sonorous vibrations in strings, rods, pipes, and plates—Musical scale—Quality of sound—Ear and larynx—Sources, propagation, measurement, reflection, refraction, and velocity of light—Colour—The spectrum and the spectroscope—Fluorescence and phosphorescence—Interference

—Diffraction—Polarization—The eye and optical instruments.

Magnetism and Electricity. — Magnetic attraction—Polarity—Directive power—Repulsion—Dipping and compass needles—Diamagnetism—Development of frictional electricity—Conduction and insulation—Distribution—Machines—Leyden jars—Voltaic batteries—Heating, lighting, magnetic, chemical, and physiological effects of the current—Ohm's law—Potential—Electro-magnetic and other induction machines—Land and ocean telegraphy—Electro-plating—Electro-dynamics.

Geology.

Junior.—History and definition of geology—Cosmogony—Theories on the formation of the earth

Introduction to mineralogy—General stratigraphical geology.

Senior.—Introduction to petrography and palæontology—Geology of New Zealand—Economic

geology.

H.—1c.

1878.

Jan. 1. To Balance

Professor von Haast will make two excursions during the vacations with his students to Banks Peninsula and Malvern Hills, to introduce them to practical fieldwork, and to explain to them on the spot the geological structure of these districts.

A type collection of minerals, rocks, and fossils can be consulted by the students in the lecture-

room during museum hours.

Botany—Structural and Physiological.

General Morphology.—Morphology of the cell—Morphology of the tissues—General conformation of plants.

Special Morphology.—Cryptogamia or flowerless plants—Phanerogamia or flowering plants.

Physiology.—Molecular forces in the plant—Chemical processes in the plant—General conditions of plant life—The laws of growth—Movements of plants—Phenomena of reproduction—Outlines of classification—Origin of species—Geographical distribution—Palæobotany, or distribution of plants in

Zoology.

General Morphology. - Structure and composition of animal tissues - Morphology of motor system Organs of alimentation and digestion—Circulatory organs—Respiratory organs—Glandular system -Nervous system and organs of special sense—Reproductive organs—Development.

Special Morphology.—Protozoa—Metazoa—Porifera—Cœlenterata — Echinodermata — Annuloida Annulosa—(a) Anarthropoda—(b) Arthropoda—Mollusca—Vertebrata.

Distribution of animals in time and space.

Jurisprudence.

First Course.—General jurisprudence and constitutional law. Second Course.—Conveyancing and bankruptcy.

French.

Grammar, exercises, composition, translations, reading, criticism, &c., of the books prescribed for the University examination; also the periods of history of literature prescribed for the above

German.

Grammar, exercises, composition, translations, reading, criticism, &c., of the books prescribed for the University examination; also the periods of history of literature prescribed for the above examination.

No. 3.

CANTERBURY COLLEGE.—RECEIPTS and EXPENDITURE for the Year ending 31st December, 1877.

. CANTE	BORI COLLEGE.—RECEIFIS a	du Laren.	billing for the real enting of the December, 1011.
		College	Maintenance.
1877. Jan. 1. T	RECEIPTS. Descripts. Descrip	620 7 1,527 10 28 19 1,205 14 1,016 8 25 0 8 6 33 6	d. 1877. EXPENDITURE. £ s. d. 7 Jan. 1. By Transfer to College text-books 200 0 0 0 ,, Deposit Account 60 0 0 1 Salaries and all maintenance expenses 3,314 5 1 0 Working expenses of Laboratory 268 10 6 6 0 Grants to Laboratory buildings 294 3 4 8 ,, College buildings 7 15 11 Balance 830 14 6
1878. Jan. 1. To	o Balance	£830 14	£4,885 9 4 e Buildings.
1877. Jan. 1. T	RECEIPTS. Balance at last audit Grant from Interest Account College maintenance Girls H. S. "	£ s. 4,918 0 93 10 170 0	d. 1877. EXPENDITURE. £ s. d. 4 Jan. 1. By Building, fitting, furniture, &c 4,979 16 6 0 Balance 204 3 10
1878. Jan. 1. To	Balance	£5,184 0 £204 3 1 College	4 £5,184 0 4 £5,184 0 4
1877. Jan. 1. Te	RECEIPTS. Transfer from College maintenance Receipts from sale of	£ s. c 200 0 81 13 1	d. 1877. EXPENDITURE. £ s. d. 0 Jan. 1. By Books 228 12 0

£281 13 11

1 11

£53

£281 13 11

Public Library (Circulating) Maintenance.
1877. RECEIPTS. £ s. d. 1877. EXPENDITURE. £ s. d. Jan. 1. To Balance at last audit 174 7 5 Grant from Reference Library 581 13 11 Grant to College maintenance 25 0 0 Grants from Government 378 10 0 Grant to Library buildings 65 17 0 Grants from Interest Account 459 4 3 Subscriptions, &c 459 4 3
1878.
Reference Library.
1877. RECEIPTS. £ s. d. 1877. EXPENDITURE. £ s. d.
£1,851 13 9 £1,851 13 9
Jan. 1. To Balance £461 12 9
Library Scrip of Shareholders.
1877. RECEIPTS.
1878. Jan. 1. To Balance £118 10 2
Library Buildings.
1877. Receipts. £ s. d. 1877. Expenditure. £ s. d.
Jan. 1. To Balance at last audit Grant from Library maintenance , , , , , , , , , , , , , , , , , , ,
<u>£787 10 0</u>
76
Museum Maintenance. 1877. Receipts. £ s. d. 1877. Expenditure. £ s. d.
Jan. 1. To Balance at last audit 333 17 9 Jan. 1. By Geological report 242 0 0 Grants from Government 875 0 0 Salaries, incidental expenses, &c 1,860 8 6 , Interest Account 52 8 2 Balance 358 0 6 Incidental receipts 173 0 6 8 </td
School of Technical Science re- serves and rents 1,026 13 4
£2,468 15 8 £2,468 15 8
1878. ———————————————————————————————————
$Museum\;Buildings.$ 1877. Receipts. £ s. d. 1877. Expenditure. £ s. d.
Jan. 1. To Balance at last audit 2,993 14 11 Jan. 1. By Buildings, fittings, furniture, &c. 2,177 7 10 Grants from Interest Account 73 10 0 Balance 889 17 1
1878. £3,067 4 11
Jan. 1. To Balance £889 17 1
Geological Report. 1877. RECEIPTS. £ s. d. Jan. 1. To Transfer from Museum maintenance 242 0 0
Laboratory Buildings.
1877. RECEIPTS. £ s. d. 1877. EXPENDITURE. £ s. d. Jan. 1. To Balance at last audit 1,186 7 6 Jan. 1. By Building, fittings, &c 1,186 18 10 Incidental receipts 6 0 0 Chemicals and apparatus 210 13 10 Grants from College maintenance 294 3 4 College maintenance 147 10 0 Balance 38 11 10
£1,545 2 8 1878. Jan. 1. By Balance £38 11 10
Medical College Reserves. By Commission selecting £100 0 0

Girls'	Hiah	School	Maintenance.

	Girls' High Sch	cool Maintenance.
Jan. 1. To Balance at last audit School fees	£ s. d. 500 0 0 420 8 6	1877. EXPENDITURE. £ s. d. Jan. 1. By Salaries and incidental expenses 533 12 8 College maintenance 33 6 8 Balance 353 9 2
1878. Jan. 1. To Balance	£920 8 6 £353 9 2	£920 8 6
	Girls' High Se	chool Buildings.
1877. RECEIPTS. Jan. 1. To Balance at last audit Grants from Interest Account Incidental receipts	£ s. d. 4,577 2 8 132 6 9 12 10 0 £4,721 19 5	1877. EXPENDITURE. £ s. d. Jan. 1. By Buildings, fittings, furniture, &c 4,684 0 4 Balance 37 19 1 £4,721 19 5
1878. Jan. 1. To Balance	£37 19 1	<u> </u>
,	School of Agricu	lture Land Sales.
1877. RECEIPTS. Jan. 1. To Balance at last audit 17,803 acres land sold Grants from interest	£ s. d. 6,910 0 0 35,606 0 0 199 3 3	1877. EXPENDITURE. £ s. d. Jan. 1. By Incidental expenses 3 18 0 Transfer to School of Agriculture reserves 949 3 3 Loans and fixed deposit in Bank of New Zealand 34,138 0 0 Balance 7,624 2 0
1878. Jan. 1. To Balance	£42,715 3 3 £7,624 2 0	£42,715 3 3
School	of Agriculture	Model Farm Buildings. 1877. By Land bought and incidental expenses £2,202 0 1
School of	f Agriculture Re	serves, Rent and Interest.
RECEIPTS. To Rents and interest Transfer from agricultural land sales	£ s. d 1,462 15 7 949 3 3	1877. EXPENDITURE. £ s. d.
1878. Jan. 1. To Bálance	£1,883 12 2	
	Girls' High S	School Reserves.
	· ·	By Commission selecting and travelling expenses £77 0 0
_		Science Land Sales.
To 900 acres land sold	£ s. d.	EXPENDITURE. £ s. d. By Fixed deposit in Bank of New Zealand 500 0 0 Balance 1,300 0 0
1878. Jan. 1. To Balance	£1,800 0 0£1,300 0 0	£1,800 0 0
		

STATEMENT of Cash on Mortgage and on Fixed Deposit, at 31st December, 1877. £ s. d.

Waimakariri Board of Conservators and Bank of New Zealand (fixed deposit)	others 	 •••	19,638 23,500		0
			£43,138	0	0

Of the above sum, £42,138 belongs to the School of Agriculture land sales, £8,000 of which was borrowed in 1876; £500 belongs to the School of Technical Science land sales; and £500 to the Reference Library.

STATEMENT of BALANCES at 31st December, 1877.

	· · ·		0100		., 2000	Cr.		1	Dr.	
					£	8.	d.	£	s.	d.
College maintenance		•••		•••	830	14	6			
" buildings		•••			204	3	10			
" text-books		•••			53	1	11			
Library circulating maintenance		•••			79	10	4			
" reference	•••	•••	•••	•••	461	12	9			
" scrip of shareholders					118	10	2			
Museum maintenance		***			358	0	6			
" buildings	•••	•••			889	17	1			
Geological report		•••			242	0	0			
Laboratory buildings								38	11	10
Medical school reserves		•••						*100	0	0
Girls' High School maintenance		•••	•••		353	9	2			
,, buildings		•••			37	19	1			
School of Agriculture land sales		•••			7,624	2	0			
School of Agriculture model farm, land, and buildings								2,202	0	1
School of Agriculture reserves, rents	and i	interest			1,883	12	2			
Girls' High School reserves		•••						† 77	0	0
School of Technical Science land sale	S				1,300	0	0			
Cash in Bank of New Zealand, on cu	rrent	account	•••	•••		•••		12,019	1	7
					£14,436	13		£14,436	13	6

Examined and found correct.

CHARLES KNIGHT, Auditor-General.

* This amount, although standing at the debit of Medical School reserves, was paid out of College maintenance at the time, and is consequently due that much to that account when funds are available.

† This sum, although standing at the debit of the Girls' High School reserves, is actually chargeable against the Girls' High School maintenance, from which it was paid.

By Authority: George Didsbury, Government Printer, Wellington.—1878.

Price 6d.]