1902.

NEW ZEALAND.

EDUCATION:

CANTERBURY AGRICULTURAL COLLEGE.

("THE CANTERBURY COLLEGE AND CANTERBURY AGRICULTURAL COLLEGE ACT, 1896.")

[In continuation of E.-11, 1901.]

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

Visitor.—His Excellency the Governor.

Board of Governors.

Appointed by His Excellency the Governor—John Rennie.
Elected by members of the Legislature—George Jameson, M. Murphy, F.L.S., Hon. Edward Cephas John Stevens (Chairman).
Elected by governing bodies of agricultural and pastoral associations—W. F. M. Buckley, H. A. Knight, Robert Heaton Rhodes, B.A.

Staff.

Director.—W. Lowrie, M.A., B.Sc.
Lecturer on Chemistry.—G. Gray, F.C.S.
Lecturer on Natural Science.—F. W. Hilgendorf, M.A., B.Sc.
Lecturer on Applied Mathematics.—M. Guerin, C.E.
Lecturer on Veterinary Science.—J. R. Charlton, M.R.C.V.S.
Instructor in Woodwork.—F. W. Sandford.

REPORT OF THE DIRECTOR.

SIR,—

I have the honour to furnish a brief report for the year 1901 on the work of this institution.

College.—The late Director, Mr. J. Bayne, M.A., B.Sc., resigned his position at the end of June, and the Lecturer on Chemistry, Mr. G. Gray, was appointed Acting-Director, and held the position until the end of October. Changes on the staff, as they affect the continuity of the work, naturally result in some disorganization and are reflected on the attendance roll, but the reports of the examiners appointed by the Board of Governors evidence that consistent work was done by many of the students, and that fair success resulted. During the year thirty students were enrolled, eleven for the second year and nineteen for the first year of the course, and at the end of the year five students qualified for the College diploma. Scholarships were awarded to two students of the first year and to two of the second year.

The Board of Governors took the occasion of changes in the staff to modify very considerably the course and range of studies and the organization of the institution. The curriculum has been extended from two years of two sessions each to three years of three sessions each, and the fees fixed at £40 per annum each for the first and second year's courses and £20 for the third year's course. The range of veterinary instruction has been widened and the course elaborated. That the Veterinary Lecturer may have more time for his subject proper the Lecturer on Natural Science has undertaken the subject of animal physiology, *vice* geology, which as such has been dropped. The syllabus of theoretical chemistry has been reduced and narrowed, and the time so saved has been devoted to agricultural chemistry. The subject "Steam and the Steam-engine" has been added to the curriculum, and will be taught by the Lecturer on Applied Mathematics. These are the subjects now studied in the course of the three years' residence: Agriculture, chemistry, botany, animal physiology, entomology, meteorology, bee-culture, mathematics, steam and the steam-engine, surveying and levelling, book-keeping, and veterinary science. The practical

aspect of each of the several subjects of study in its relations with agriculture has been kept specially prominent. For example, as far as practicable animals for purposes of demonstration and clinical practice will be obtained from farmers in the neighbourhood for treatment in the veterinary hospital; in the course of practical chemistry such matters as milk-testing, butter-testing, and estimation of the percentage of manurial ingredients in artificial manures, among others, will be made prominent; and in practical botany the identification of grasses and seeds of grasses and weeds will be given—with other matters immediately useful to students of farming—special attention. The curriculum, I am confident, affords a most useful training for any young man desirous of qualifying himself to work land to best advantage, and will be found, by such as avail themselves fully of it, in ways many and often, of direct utility and immediate economic benefit.

In August a course of manual training in woodwork was added to the curriculum, with Mr. F. W. Sandford as instructor. The course will proceed from elementary lessons in woodwork, systematized and graduated, to farm carpentry—such, for example, as the making of gates, feed-boxes, and the wooden framework of various implements.

On the farm it has been arranged that the students shall carry out practically the whole work under the direction of the farm overseer and shepherd. No farm-hands as such will be employed, except at special work, such as threshing. When engaged in practical farm-work students are required to apply themselves as diligently as if they were working for day wages, and activity and energetic application are specially encouraged, and, indeed, demanded. It is recognised that young men forming habits should not be allowed to play make-believe while at work of any kind, and to the best of our ability this is prevented.

The Board of Governors fully recognises that the endowments supporting the Institution are not intended to assist in the maintenance and education of such students as are not qualified to avail themselves of the opportunities it offers, or such as from want of diligence and application do not make satisfactory progress, and accordingly all such are required to cease residence. This policy will affect the average attendance for some time; but it will be admitted that the success of the College is at no time to be gauged by the number of students in residence, and that it is to be measured only by the calibre of the men who leave it qualified.

In knowledge of the importance of the farm-work every endeavour has been made to insure thoroughness and efficiency. The dry spring very materially affected results from all crops here as elsewhere in Canterbury, but increased prices have somewhat atoned for the deficiency. All the stock are of good quality, and the stud flocks of sheep especially offer high educational facilities. An experimental farm is one thing, a farm conducted so as to teach the business of farming is another, and this latter we aim at. Consequently, though some experimental work is conducted, it is never carried to a degree that would risk obscuring or evading the farming operations proper, or the financial aspect thereof.

I have, &c.,

WILLIAM LOWRIE, Director.

The Hon. the Minister of Education, Wellington.

STATEMENT of RECEIPTS and EXPENDITURE for the Year ending 31st December, 1901.

General Account.

Receipts.	£	s.	d.
Interest on capital	1,165	0	0
Rent of reserves	1,590	14	1
Students' fees	1,059	12	3
Students' books	23	11	11
Maintenance of students and staff—Sale of fat, refund of Director's board	38	8	1
Grounds—Sale of firewood	3	4	0
Students' travelling-expenses—Fare refunded	2	0	0
Laboratories—Refund for breakages	4	3	4
Orchard—Sale of fruit	1	5	0
Contingencies, College—Freight refund	0	11	8
Buildings—Refund for breakage	0	6	0
Stationery, &c.—Bank exchange refunded	0	2	6
Balance	81	3	3
	£3,970	2	1

Expenditure.	£	s.	d.
Balance, 1st January, 1901	116	18	8
Salaries of staff	1,211	13	5
Maintenance of staff and students	1,173	3	8
Board-room furniture	218	2	3
Printing and advertising	168	5	11
Students' books	18	4	5
Insurance, College, including guarantees	33	9	0
Buildings, College—Repairs and repainting	46	14	2
Grounds and plantations—Labour, trees, &c.	49	13	10
Library—Books purchased, printing magazine	28	8	6
Students' travelling-expenses	21	12	0
Travelling-expenses—Members of Board	32	17	8
Legal expenses	31	8	0
Prizes and certificates	15	13	6
Laboratories—Purchase of chemicals and apparatus	46	11	2
Orchard—Labour, &c.	62	16	8
Workshops—			
Wages	50	17	6
Materials and tools	16	17	6
Manual training—Fees and tools	52	7	11
Examination expenses	61	10	6
Experimental work	34	11	6
Scholarships	80	0	0
Contributions to Churches	20	0	0
Contingencies (College)—Sundry expenses	94	10	1
Special votes	63	19	6
Stationery, stamps, and telegrams	90	6	6
Transferred to Farm Account	129	8	3
	£3,970	2	1

Farm Account.

Receipts.	£ s. d.	*Expenditure.*	£ s. d.
Sale of Grain, &c.—		Purchase of Live-stock—	
Wheat	279 13 3	Sheep	650 13 8
Oats	58 7 11	Cattle	43 14 6
Potatoes	42 6 0	Horses (service of mares)	10 10 0
Barley	11 16 8	Pigs (Berkshire boars)	62 9 3
Peas	2 4 0	Farm wages (including £250, share of Director's salary)	858 13 10
Linseed	0 9 4	Purchase of seeds	47 11 10
Sacks	15 2 10	Purchase of manures	45 2 6
Sale of Live-stock—		Trade accounts—Woolpacks, corn-sacks, freights, saddlery, sheep-dip, veterinary medicine, and sundries	250 17 7
Sheep	1,161 18 2	Farm fuel	19 4 6
Cattle	281 7 6	Rates	34 10 0
Pigs	104 18 4	Insurance on farm buildings and contents	60 7 4
Sale of wool	127 13 11	Implements—Purchases and repairs ..	52 0 10
Sale of dairy produce	161 2 11	Permanent improvements—Draining, &c.	9 19 2
Trade accounts—Sales of poultry and eggs, sale of old timber, rail freight refunded, proceeds of dipping sheep	45 18 6	Repairs to gates and fences	54 18 11
Sale of old implements	13 19 6	Repainting and repairs—Farm buildings ..	106 10 5
Farm contingencies—Prizes gained at shows	6 10 0	Farm contingencies—Entries and expenses in connection with shows, freights, incidental expenses	57 2 6
Transfer from General Account	129 8 3	Students' wages	78 10 3
	£2,442 17 1		£2,442 17 1

Capital Account.

Receipts.	£ s. d.	*Expenditure.*	£ s. d.
Balance, 1st January, 1901	20,587 15 8	Balance, 31st December, 1901	20,587 15 8

Mortgage of Freehold Account.

Receipts.	£ s. d.	*Expenditure.*	£ s. d.
Balance, 31st December, 1901	20,000 0 0	Loan on security of 6,001 acres	20,000 0 0

Statement of Balances.

Accounts.	£ s. d.	*Bank and Investment.*	£ s. d.
Cr. Capital Account	20,587 15 8	*Cr.* Drawing Account .. £1,013 17 6	
Dr. General Account	81 3 3	Less outstanding cheques 507 7 6	506 10 0
		Cr. Cash in hand	0 2 5
		Mortgage on freehold	20,000 0 0
	£20,506 12 5		£20,506 12 5

M. GUERIN, Accountant to the Board of Governors.
W. LOWRIE, Director.

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

REPORTS OF EXTERNAL EXAMINERS.

Chemistry.—Dr. W. G. Evans reports as follows: With few exceptions, the work has, on the whole, been fairly well done. After taking into account the fact that the papers set were somewhat easier than usual, I feel justified in saying that the standard attained is higher than in any other year in which I have had the honour to act as examiner.

Natural Science.—Dr. Chas. Chilton reports thus: The first-year students were examined by means of written papers on botany, entomology, and meteorology, and were also subjected to a practical and oral examination in botany. The second-year students had written papers in botany and entomology, and a practical oral examination in botany. In the first-year botany four students did poorly, but the remaining nine all did well, five of them doing very good work. Similarly, both in entomology and meteorology four students showed up poor papers, but all the remaining nine were good. In the second year one student did very poorly in all subjects, and one moderately; the remaining four did well throughout. On the whole, the results give evidence of careful and efficient teaching on the one hand, and good application by the majority of the students on the other.

Applied Mathematics.—Mr. A. D. Dobson, M.I.C.E., reports as follows: I beg to report on the subjects which I have examined as follows:—First-year students—mensuration, surveying, plotting, and book-keeping: The surveying, plotting, and book-keeping were very well done, many of the papers obtaining full marks. The mensuration papers were very well worked by five students. Second-year students—mechanics, surveying and levelling, plotting, book-keeping: In mechanics four out of six have done well; in surveying and levelling and plotting the work was weakly done. In the former of these two papers the students evidently require more practice in reducing the levels. In plotting three out of the six did the work well. Book-keeping was very neatly and well done, and the matter arranged in a businesslike manner. In field-work six second-year and thirteen first-year students were examined—in the use of the theodolite and level

for the former and of the chain for the latter. The work was very intelligently done throughout, and I was pleased with the manner in which the students set to work. Farm books: These were neatly kept by both classes of students. On the whole, I consider the students have been well taught, and they have evidently made good use of their opportunities.

Veterinary Science.—J. A. Gilruth, M.R.C.V.S., reports: In the first year the students' grasp of the subjects taught was on the whole good, three being especially so. In the second year one only answered three questions, hence the low percentage of marks; and one, while passing a good oral examination, produced an inferior paper, he having entirely misapprehended one question.

Dairying.—Mr. Thos. Quayle reports: Six students of the second year were presented for examination. It is pleasing to state that the students showed much interest in practical dairying. The possibilities of increased wealth to the people who are engaged exclusively in dairying for a living are fully recognised by the students, who are also conscious that the success of the dairying industry depends upon the production of butter and cheese which will command favour in the English market. The class as a whole give evidence of the reading of the most modern works on dairy matters. The importance of exercising care in the selection of profitable cows has been well taught, and the necessity of careful selection of winter forage to insure against unpleasant flavours in the produce is fully understood. The dairy and utensils were quite clean; the butter churned was of nice quality.

Ploughing.—Mr. Jarman, of Greendale, reports: Six students of the second year competed. I am pleased to state that the students had a good idea of what was required, but, owing to the hardness of the land, were not able to do such good work as would have been done in regard to finishes of last furrow had the soil contained more moisture. The horses were well and quietly handled, and the work on the whole exceeded my expectations.

Agricultural Practice.—Mr. Geo. Rennie reports as follows: I have the honour to report that I examined the students in agriculture, as requested by the Board. In the first year the work was very uneven, some of the best students being particularly good and two or three of the lowest ones very indifferent. The majority of the students gave very creditable results, and the practical work was very good throughout the whole class. In the second year the average was very good, both in practical and theoretical work, the two leading students in particular showing a thorough knowledge of the subject.

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