

1929.  
NEW ZEALAND.

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## CANTERBURY AGRICULTURAL COLLEGE

REPORT OF THE BOARD OF GOVERNORS ON THE PROGRESS OF THE COLLEGE, TOGETHER WITH A  
STATEMENT OF RECEIPTS AND EXPENDITURE, FOR THE YEAR ENDED 31st DECEMBER, 1928.

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*Laid on the Table of the House of Representatives in pursuance of Section 8 of the Canterbury College and  
Canterbury Agricultural College Amendment Act, 1927.*

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### CANTERBURY AGRICULTURAL COLLEGE, LINCOLN.—ANNUAL REPORT, 1928.

*Visitor.*—His Excellency the Governor-General.

*Board of Governors.*—John Deans, Esq. (Chairman); Hon. D. Buddo; W. A. Banks, Esq.; Professor H. G. Denham;  
H. A. Knight, Esq.; C. H. Hewlett, Esq.; H. S. S. Kyle, Esq., M.P.; George Murray, Esq.; T. A. Stephens, Esq.;  
N. M. Orbell, Esq.

*Staff.*

*Director.*—R. E. Alexander, A.R.C.Sc.I.

*Secretary.*—E. W. Smart.

*Lecturers.*—Biology: F. W. Hilgendorf, M.A., D.Sc., F.N.Z.Inst.; Assistant, J. W. Calder, M.Sc., B.Ag. Chemistry:  
M. J. Scott, B.A. (Cantab.), B.Sc.A.I.C.; Assistant, D. J. Sidey, B.Ag., H.D.D. Economics: I. W. Weston, M.Sc.  
Veterinary Science: R. B. H. Murray, M.R.C.V.S., D.V.S.M.

*Farm Overseer.*—R. A. Fougere.

#### REPORT OF THE DIRECTOR.

I HAVE the honour, by direction of the Board of Governors, in pursuance of the Canterbury College and Canterbury Agricultural College Act, 1898, to submit the following report of the work of the institution for the year ended 31st December, 1928.

Fifty-three students were enrolled in 1928. Of these, six were taking the degree course and two were post-graduate students taking M.Ag.Sc. course. The last-mentioned students both completed their thesis and obtained the degree of Master of Agricultural Science, with second-class honours. Four students completed the B.Ag. course, and three qualified for the degree.

Eighteen students left at the end of the course or during their third year. Of these, fifteen passed all examinations and were awarded the diploma of the college. Four left at the end of their second year, and one at the end of the first-year course.

The work of the students, both in the College and on the farm, has been satisfactory. The competition among the students for class prizes and general attention to work have been favourably reported on by the staff.

#### RESEARCH WORK.

1. *Wheat-breeding.*—The work was considerably extended during the year, about 24 acres being covered with various trials. All new and promising varieties from abroad were given extensive trials against our standard varieties; some twenty strains of crossbreds were tried on a field scale, and many hundreds of new crosses, designed to improve the milling and baking quality of New Zealand wheats, were tried on a smaller scale. In all there were over three thousand plots to be observed and harvested and threshed separately.

2. *Oat-breeding.*—Beside the pure strains of oats now in use, a start has been made in crossing oats, Algerians and Gartons being used for parents.

3. *Breeding of Pasture Plants.*—Rye-grass, cocksfoot, and red clover have received a considerable amount of attention. A great number of strains have been isolated, and very striking differences in their productivity have been noticed, some strains proving much more permanent than others, and some producing two or three times as much feed as others.

The most promising of the early cocksfoot selections have been planted out in field trials in competition with the commercial seed, and weighings are being made of the herbage produced. The best strain of all has been fixed on to become the parent of seed for distribution, and has been planted out over an area of  $1\frac{1}{2}$  acres, under conditions calculated to secure maximum seed-production.

Besides the plots at the College, others of both rye-grass and cocksfoot have been established in twenty widely scattered localities in the South Island, from Nelson to Southland, and there are a total of 3,100 plots under observation.

A small area has been secured at the Christchurch Showgrounds, and grass plots have been established there so as to interest as wide a public as possible in the improvement of pastures that grass-selection is likely to achieve.

4. *Pig-feeding trials*.—Twenty feeding-trials, using 182 pigs, on value of meat-meals. Information has been collected to show that meat-meal (hitherto known as "blood-and-bone manure") is a most valuable supplementary feed, and its judicious use, not only with pigs, can be of great national importance. Six farmers have carried on co-operative trials with 200 pigs on milk and grain. Pig recording, S.I.R.: Close on 100 sows have been recorded.

5. *Wheat-manure Trials*.—336 plots, six different kinds of manure, three different crops each.

6. *Top-dressing Grass*.—120 plots, involving ten different kinds of manures on two different kinds of grass. These have been grazed and mown alternately, and all results interpreted by statistical methods.

7. *Sheep Feeding and Grazing*.—Sheep-feeding Trials: During the winter 150 crossbred ewes were hand-fed on the College farm to observe the effects of and to find out the cost of different winter feeds. The crossbred ewes at Ashley Dene were also fed on three different classes of feed.

Sheep-grazing Trials: The grazing trials on the small manurial experimental plots in Field 21 were continued, and in addition Field 20 was fenced so as to allow of comparisons between extensive and intensive grazing, and intensive grazing with and without supplementary feed. Records have also been kept of the grazing on every field on the College and Ashley Dene farms, some of which have been top-dressed. In addition we have kept records of the grazing on a private farm where differential manuring has been carried out.

From the information gained from these trials and also collected from farmers, it appears that with the application of intensive grazing to our pastures it is possible to double our gross returns, and to increase considerably our net returns. The increase in stock-carrying brought about by this intensive grazing will mean that better provision will have to be made for feeding the extra stock during periods of scarcity. It is also evident that more attention should be given to the better winter feeding of the stock that is already carried on many farms; and it might be pointed out here that the use of meat-meal for feeding sheep during this period gives promise of being very useful.

8. *Pulpy Kidney in Young Lambs*.—A further study of this trouble has been carried out without any very definite results, but the information collected will be invaluable for directing future work.

#### COLLEGE BUILDINGS.

The College buildings and surroundings have been kept in a thorough state of repair. A much-needed improvement has been made in the form of new lavatories and bathrooms. The provision of this addition was long overdue, but that was owing to the fact that the Board was unable to provide the necessary funds. The usual outlay was incurred during the year in repairing and painting the internal woodwork, fittings, &c.

Another much-needed addition to the College buildings is up-to-date laboratory accommodation, the plans for which, in accordance with regulations, have been submitted to and approved by the Hon. Minister of Education. These laboratories are being built under a grant made by Parliament in 1927. Unfortunately the Board was unable to get a tender within the estimate, although it cut down everything but the necessary outlay. Since the end of the year, however, the Minister of Education has agreed to make an extra grant towards the buildings. The Board hopes that the laboratories will be ready for occupation before the end of the present term, and present indications are that the new building will be in keeping with the surroundings, both in permanency and architecture.

#### GENERAL.

The farm has retained its high state of efficiency, the average yields from the cereals being the highest obtained in the history of the College. This can be taken as an indication that the land has been farmed in a husbandlike manner. The demand for the cereals produced on the College farm has increased, and the bulk of the yield of the 1928-29 crop was ordered before the end of the year under review.

The farm-buildings, which have been the subject of adverse criticism, are very much in need of replacement, and the Board sincerely hopes that a grant will be forthcoming to enable a rebuilding programme to be carried out in the near future.

During the year it was necessary to replace and bring up to date much of the machinery and many of the implements which have been in use at the College for a very long period. This additional expenditure had to be met out of revenue, and, while unavoidable, it has seriously encroached on the Board's finances.

Owing to increased work many additions have been made to the staff during the last two or three years. No housing-accommodation is available nearer than Christchurch for the extra members employed, and travelling to and from Christchurch must necessarily reduce the efficiency of the staff. The Board feels that to get the best work from the staff additional accommodation must be provided at the College for married members of the staff.

The interest taken in the College by the general public continues to increase. Last year there were several farmers' excursions from other parts of the Dominion, and one of the largest gatherings we have had so far at the annual Farmers' Day, although the weather was anything but satisfactory for the purpose of an inspection.

We are, as in former years, indebted to our many friends for their interest in presenting the College with prizes, or in entertaining our students at their farms, factories, &c.

R. E. ALEXANDER, Director.



*Bank Reconcil*

				£	s.	d.	£	s.	d.
Bank overdraft on 31st December, 1928	..	..	..	347	14	7			
Outstanding cheques	..	..	..	142	0	9			
							489	15	4
Cash in hand on 31st December, 1928	..	..	..	62	18	0			
Post Office Savings-bank Account on 31st December, 1928	..	..	..	45	3	9			
							108	1	9
							£381	13	7

Certified correct,

R. E. ALEXANDER, Director.

Examined and found correct, subject to the exception that the purchase of land subject to a mortgage is without authority of law.—J. H. FOWLER, Deputy Controller and Auditor-General.

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