The Seed They Sowed

Centennial Story of Lincoln College

I. D. Blair

Incorporating, in part
"Life and work at Canterbury Agricultural College."
(first published 1956)

LINECOLN COLLEGE
University College of Agriculture
Must every coral insect leave his sign
On each poor grain he lent to build the reef,
Or deem his patient service all in vain?

What if another sit beneath the shade
Of the broad elm I planted by the way—
Have I not done my task and served my kind?

Nay, rather act thy part, unnamed, unknown,
And let fame blow her trumpet through the world
With noisy wind to swell a fool's renown.

The noblest service comes from nameless hands
And the best servant does his work unseen.
All these have left their work and not their names.

OLIVER WENDELL HOLMES
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For the benefit of historians and researchers an extended copy of Dr Blair's manuscript has been lodged in the Lincoln College library. The full text is annotated, numbers indicating sources and references, which are given at the end of each chapter. There is an appendix, not included here, outlining the annual finances of the college. The appendix on endowments and land holdings includes a full narrative of the transactions; the staff appendix gives a full list from the founding of the college to 1977; all buildings are included in appendix 7; and the complete story of meteorology at Lincoln College is in appendix 10.
Foreword

This is the story of a University College of Agriculture as it approaches its Centennial. It is essentially a personal story, for Lincoln College is a human family the stature of whose genealogical tree may be measured by the worth of successive staff and students. It is written, appropriately enough, by a member of the family who has lived in its midst for almost half the century, and while, therefore, the record is chronicled in fact it is presented with opinion. What has evolved is thus more of an historical portrait than a formal official history.

When the College Council sought an author for this Centennial publication it turned naturally to Ian Blair, former student, recently retired head of the College’s Department of Agricultural Microbiology and bulwark of the Old Students’ Association. He accepted the commission and has laboured with patience, diligence and dedication. Known as much for the directness of his viewpoints as for his deep love for and loyalty to Lincoln College, Dr. Blair has left his own imprint on a manuscript that makes all the better reading for its forthright treatment. Passages may provoke discussion and debate, and if so neither the author nor the College as publisher is inclined to withdraw or recant. After all, history is dull record without the background of perspective interpretation and what author is worth the price of his pen who fails to cast some personal image over his writing? Suffice it to say that the views of the author are not necessarily those of the College and that each recognises that an occasional inaccuracy of fact inevitably will have evaded correction.

Lincoln College, affiliated to the University of Canterbury, ranks third in order of foundation among New Zealand’s university institutions, third also among agricultural colleges in the Commonwealth and first in the Southern Hemisphere. It takes pride in this seniority, as it does also in its mono-faculty objective of advancing knowledge in the fields of agriculture and related interests. It
enjoys strong corporate unity through close relationships between staff and students aided by relative smallness in numbers. Its history therefore evokes a compact picture which nevertheless embraces all shades of varying disciplines under the one broad umbrella.

As the College entered its one hundredth year it was honoured, on March 4, 1977, by a visit from Her Majesty Queen Elizabeth II and by His Royal Highness the Duke of Edinburgh, who, in a special programme of inspection followed by a joint luncheon with Christchurch and provincial civic representatives, were able to note aspects of the history of the College and of its work.

The occasion was marked by an announcement that the centennial year project for Lincoln would be the establishment of a foundation to advance education in New Zealand with special reference to agriculture and related interests. The Lincoln College Foundation, which Dr. Blair mentions in the final chapter of his book, thus translates some of a century’s achievements into a national objective for the future, and an historian in fifty or one hundred years’ time will have the opportunity of balancing this College’s achievements on behalf of New Zealand in even clearer focus than has now been evident.

D. W. BAIN
Chairman
Lincoln College Council

February, 1978
PART 1

The School of Agriculture of Canterbury University College
CHAPTER 1

Foundation

Provision for agricultural education was prominent in the concept of the association which founded the province of Canterbury in the South Island of New Zealand. The intent had been clearly indicated in 1850 when plans were laid for the establishment in Canterbury of an agricultural division within the collegiate department of the proposed public school of Christ’s College. This, indeed, was to be the university level of the educational transplant from England, and in 1853 James Edward Fitzgerald, first superintendent of the Canterbury province, affirmed in his inaugural address that attention should be given to the establishment of a good agricultural boarding-school that might be made financially self-supporting.

Further impetus was given to the idea by H. J. Tancred who, in 1865, moved a Provincial Council resolution to authorise the reservation of agricultural land for the support of education. A further resolution carried through this authorisation in 1872: “That His Honour the Superintendent be respectfully requested to reserve 100,000 acres of purely pastoral land in one or more blocks within the province as an endowment for a school of agriculture . . . That such endowment be vested in a board of agriculture of not less nor more than eight gentlemen to be appointed by the Provincial Council.”

In subsequent years until 1873 several endowments totalling 321,761 acres were established for university education. W. J. Gardner has related how they were utilised, including a sale of about one-sixth of the area before 1880 to make some provision for a building programme of Canterbury College, which had been founded in 1873. The agricultural portion of 100,950 acres embraced approximately 61,000 acres defined as being within the Hakatamea and Waitangi boundaries, South Canterbury, and two blocks of about 31,950 and 5,000 acres in the upper basin of the Rangitata river. Part of this was the Mesopotamia sheep-run farmed earlier by Samuel Butler. The occupancy and leasing of
these lands produced helpful income in the early years, used first by Canterbury College and then by the School of Agriculture. As a long-term asset they were of immense value, reflecting credit on the wisdom of the pioneer provincial legislators in making this provision. They were retained in part for most of the first century of this history but were progressively sold to provide funds to purchase other farm lands of greater potential. These land assets gave the School of Agriculture a measure of independence from government disbursements in the acquisition of land.

The newly established University College in Christchurch was the only agency that could establish a school of agriculture, though no encouragement was forthcoming from the central government. Nothing was provided for agricultural teaching, for example, in the Education Act of 1877. Comparable institutions in Australia (Dookie and Roseworthy) and Canada (Ontario Agricultural College) were to be developed by government departments of agriculture but the New Zealand Department of Agriculture was not established until 1892, which was almost 20 years after the founding of Canterbury College. The identity of what was to become Lincoln College with a university institution is now regarded as a fortunate occurrence even though many years were to elapse before the agricultural college emerged as an integral and adequate part of such a university.

Several men in the province who had interests both in the Provincial Council and in the founding board of Canterbury College appear to have concluded that they had the necessary authority to establish the school of agriculture. In its first year the Canterbury College board noted that “the amount available for a school of agriculture is £1009 and it appears that the salary of the professor of chemistry (£600) can be fairly charged against this but the balance must be reserved for purposes strictly connected with agriculture.” Agricultural chemistry received its first recognition in New Zealand at this juncture when Professor A. W. Bickerton, one of the first four professors at Canterbury, was authorised to give public lectures on this topic. A class in agricultural chemistry was instituted in 1876 and Bickerton probably was the first university academic to acquire a public relations image when the public were notified in 1878 that he would give experimental lectures in agricultural chemistry at Leeston and two days later at Kaiapoi.

Some members of the Provincial Council, however, seem to have had reservations about the intent of the University College, for the council recorded in 1875 “that the resolution on 19/12/1872 under which a reserve . . . has been made an endowment for a school of agriculture, be carried out in its integrity” and they
appointed eight trustees to safeguard this “integrity”. Meanwhile the college board was required to cease paying Bickerton’s salary from agriculture endowment funds but otherwise the trustees never entered upon their duties. Some years later when commenting on this, the Hon. W. Rolleston explained that the trustees had been appointed by the Provincial Council on the eve of the passing of the Act in the General Assembly which abolished provincial government. Canterbury strongly advocated this abolition but wished to retain the educational endowments. Retention of the reserves was of greater immediate importance than the manner of administration and it was better that the School of Agriculture endowment should remain under the control of Canterbury College than that the lands should be nationalised. The provincial government was doomed but fortunately its demise did not occur before it enacted the Canterbury Reserves Sale and Leasing Act, 1876 (Appendix I), wherein the superintendent was authorised to convey the (agriculture) reserves to the Canterbury College.

H. J. Geddes said this made the Canterbury board realise its responsibilities and without further delay a committee was appointed to investigate and report on the best method of administering the endowment trust. The committee included E. C. J. Stevens* elected to the Canterbury board in 1875, described as a founder of Lincoln College. During his service of almost 40 years his influence, based on a most comprehensive participation in business and public life, was to be of great benefit to Lincoln interests.

The board adopted the committee’s recommendations “that steps should be taken to establish an agriculture school and experimental farm; that such should be situated not more than 15 miles from Christchurch and not more than three miles from the railway; that the school should be adapted for boarders, as well as day pupils; that the farm should be of not less than 150 acres, nor more than 300 acres and should if possible comprise land of various descriptions; that it should be placed under charge of an experienced and educated person who besides managing the farm, shall superintend instruction of pupils . . .”

By the end of 1877 purchase of land at Lincoln totalled 215 acres. Further land was subsequently secured making a total in 1880 of 662 acres, at a cost of £17,711-16-8 or an average of £26-14-11 per acre—a price at the time considered high. In 1877 the land was leased to local tenants at 1/- to 1/3 per acre/month. The cost of the

land was provided out of the proceeds of the sale of part of the endowment.

Competitive designs—a premium of £40 was to be paid for the one selected—were invited for erection of the “homestead building” initially to accommodate “the manager”, his family and 20 students each with a separate room and a lecture room to accommodate 70.

John A. Hendry, F.N.Z.I.A., an authority on New Zealand architectural history, has commented that “The original building and western courtyard were designed in 1878 and 1886 respectively by Frederick Strouts* who chose to carry it out in the Jacobean manner, which he did very competently. In 1923 the complex was completed when Cecil Wood designed the Memorial Hall in a simplified Jacobean form which blends very happily with the original work.”

Hendry added: “Perhaps nostalgia plays a great part in the move for its retention but, more importantly, the competence of the design and the excellent craftsmanship displayed in its construction create for it a special place among the remaining public buildings in the community.”

During the ensuing century there were exterior changes in the building that became known as Ivey Hall, and also in use of some of the internal facilities. When a central heating system was installed in 1954 the then redundant open fireplaces were sealed off. The distinctive tall chimneys, one of the features of Strout’s design were dismantled down to the roof-line, detracting from the visual character of the building. Government policy was to reduce earthquake hazard by removal of unreinforced structures such as high decorative chimney flues and cornices.

The director’s domestic wing was used until 1945 whereupon it became part of the registry and administration centre until 1976. The original dining-room was used as such until 1929 when it became the boardroom and office, while the “chemical laboratory” became the dining-room until the refectory was provided in 1954. Improvisation, so much a feature before government capital grants, was also evident in the conversion of the laboratory-cum-dining-room into a lecture hall. The need to use outmoded accommodation was shown by the story of the original lecture theatre and library in Ivey Hall, which became a students’ common-room, then headquarters for the accounts section of the registry, and is now

part of the rural education complex. Until early 1976, when the library-administration building was in full use, the most commodious rooms on the ground floor of Ivey Hall housed the administrative officers of the college. The smaller bedrooms were, however, still used as supplementary accommodation for students.

As the centennial of the college approached, the retention or demolition of Ivey Hall was debated. There was strong sentiment for retention, at least of the frontal aspect or facade, reinforced and attached perhaps to a utilitarian structure behind it.

The first action of the board on staffing of the projected school of agriculture was to seek a "manager" and 24 applications were received. Five only were considered, including two local farmers one of whom was the Rev. A. P. O'Callaghan. This interesting character is said to have retired from the Church of England ministry because of a weak throat. He appears, however, to have been unusually strong in other resources for after his arrival at Lincoln in 1868, he became a local M.P. and was able to purchase part of Fitzgerald's original Springs Station, some of which in turn he sold to the School of Agriculture.

In January, 1878, A. R. Wallis, secretary, Department of Agriculture, Victoria, wrote in response to an inquiry by the board on organising an experimental farm, that "it should be an experimental farm, not a model farm. The public expect too much from model farms: its very name leads them to anticipate greater results than it is possible to obtain. If the farm is to be a base for agricultural education the manager should be a professor of agriculture. A professor of chemistry is also required and lecturers in veterinary science, botany, geology, land surveying and mechanics. The students should be required to engage during a portion of each day in practical work on the farm."

A former Christchurch resident S. D. Glyde, then in Adelaide, visited Melbourne on behalf of the board to interview two applicants, one being Wallis, the other W. E. Ivey. Glyde wrote that the two men were friends working together in the Department of Agriculture and that Ivey had impressed him, "A pleasant gentlemanly man; his knowledge is thorough . . . Mrs. Ivey is the daughter of a dignitary of one of the colleges of Oxford or Cambridge. She is spoken of as an accomplished, domesticated lady. Others have testified that both Wallis and Ivey are men of strict integrity and unimpeachable morality. Wallis has greater scientific attainments but has a nervous hesitating manner. Ivey is being paid £350, Wallis is on £600".

Glyde then recommended William Edward Ivey, M.R.A.C., F.I.C., F.C.S., aged 40 years and he was duly appointed (March 28,
1878). Wallis wrote to the board attacking it over the manner in which the deliberations had been conducted, Ivey being appointed while negotiations were concurrently proceeding with him (Wallis).

W. E. Ivey was born in Hobart, and his education in England included a course at the Royal Agricultural College, Cirencester. He had farmed in England before coming to New Zealand in 1867, to farm again for a period in the North Island. He went to Melbourne to become a chemist, then superintendent of experimental farms in the Victoria Department of Agriculture. He and his wife arrived at Lincoln in April, 1878, the appointment carrying a salary of £600, with "residence and keep of one horse". They lived in a newly erected cottage (still standing) during the construction of the school.

Ivey was required to meet the School of Agriculture committee regularly in Christchurch. He obtained authority for a farm development programme undertaken by local contractors and labourers. Per acre rates were: ploughing, 10/-, harrowing, 1/- and sowing 1/-. Implements and stock were purchased but he was very tightly controlled by his town-based committee. On an occasion in 1879 when he had purchased five horses, rather than three authorized, the committee resolved "that the director (a change from the original title of manager) be requested for the future not to exceed authority given him for purchases . . .". He was similarly reprimanded in later years.

His superiors were cautious and required persuasion, step by step. Understandably so when the fledgling University College within its first years had, in addition to its basic academic plan, set about establishing not only the School of Agriculture, but also the Canterbury Museum, Public Library, and Girls' High School. The governors were also contemplating a medical school. These pioneers should be honoured for their enterprise, or act of faith, in nurturing a school of agriculture in a region that had been under settlement only 25 years. In 1878 the total New Zealand population (European) was 412,000; 92,000 living in the Canterbury Province and little more than 25,000 in Christchurch. The country's agriculture was characterised by mixed systems of ranging cattle and sheep on the extensive native grasslands of the South Island or, in the North Island, on pastures established by sowing over "bush-burn" country. It is difficult to assess the level of prosperity from agricultural prices of those times. For example Sir Julius Vogel quoted typical values in 1875 as follows: Purchases—draught horses £40 to £70; working oxen £10; cows £6; merino ewes 4/6 each; crossbred ewes 10/- each. Sales—fat wethers and mutton 3d. per lb.; milk 4d. a
quart; wheat 4/9 a bushel; wool 1/- per lb. Farm labourers' wages averaged 18 to 22 shillings a week and shepherds were paid no more than £60 per annum with board. The rural community was not clamouring for a costly academic institution to serve this sort of agriculture. The only Canterbury farmer organisations, the three agricultural & pastoral associations based in Christchurch, Leeston and Timaru did not comment at this stage, though advice from these sources was plentiful later.

There was justification in Canterbury for confidence at this time. W. H. Scotter, a Christchurch historian, has assessed the economic state of the province, stressing the benefits of considerable land sales in 1878. Among others these involved E. C. J. Stevens, "whose firm was probably the most prominent in land dealing in the province". There were then 4,029 farm owners and 10,240 farm workers in Canterbury in a period of general profitability when those who had no freehold could rent land at £1 per acre and make an excellent living from wheat or even pay off the costs of a farm from the receipts of a good wheat crop. The area of cultivated land exceeded 600,000 acres (in sown grass or crop) or one-third of the bought and occupied land. Sheep on small farms as distinct from pastoral runs, increased from 155,000 to 509,000 between 1871 and 1876 and the export of wool doubled between 1868 and 1876. This advance was allied to the sowing of new pastures and the growing of supplementary root crops to aid translation from merino sheep of low wool yield to heavier long-woolled sheep producing much more. Mixed farming was in vogue and men like John Grigg, Robert Wilkin and George Gould had forseen the value of importing Leicester, Lincoln and Shropshire rams for use in flock sheep and lamb production. The province also was about to benefit from Little's contribution in producing the Corriedale breed of sheep. The chosen site of the school was on the fringe of the Ellesmere district then growing 10,000 acres of wheat and where enterprising farmers like Job Osborne, were using improved ploughs, the reaper and binder, and steam-powered threshing mills. A school of agriculture, therefore, was relevant at this period of development and it was established appropriately at Lincoln in Canterbury.

Agricultural knowledge and extension information were available only through the Canterbury A. & P. Association's "The N.Z. Country Journal" (Vol. 1 1877) and through agricultural topics furnished in the "Lyttelton Times" (Vol. 1 1850), "The Press" (Vol. 1 1861) or "The Weekly Press" (Vol. 1 1865).*

In modern times the foundation of an academic institution would be dependent on considerable private endowment or massive state aid, together with a supporting staff. Ivey began his work with nothing more than some bare land and a strictly limited financial budget and, as a newcomer, no friends or associates to sustain him. He was undaunted by the task and from the outset had a clear objective. This was to conduct a programme that would convince farmers that the best way to prepare for their succession was not to put youth to follow the plough straight from school, but rather to train them in science and practice. He was aware of the limits of the course of instruction he was to provide at Lincoln and said, “... the experience necessary to perfect our ideal farmer must in great measure come afterward. At the school he gains much, but the experience of buying and selling, of dealing with labour, etc., can only be acquired after years of practice. It is no more possible to turn out a young man of one and twenty an experienced farmer than an experienced doctor. The young medical man when he leaves his special school goes to assist some surgeon or physician in good practice ... so must the young farmer, but the educated young farmer will do so more readily for his training ...”. He was anxious for the proposed teaching programme to be brought into as close connection as possible with field demonstration and well devised indoor or laboratory experiments. His view was that the school should be regarded as a technical one, to which students should be aided through Government scholarships (bursaries) and he expected that about half the anticipated enrolment would be students with grants-in-aid. He anticipated a demand for farm schools in other districts but intended that Lincoln should be the centre for scientific education in both agriculture and forestry. A few years later when his objectives were not being realised, through no fault of his management, he deplored the absence of experimental work “through want of funds” and said: “I fear this fact may be used against the school some day by its enemies.”

Other views on what was intended in the projected course at Lincoln were expressed during the inquiry of the 1879 Commission on the University of New Zealand. The Chancellor, Dr. J. (later Sir James) Hector, closely examined E. C. J. Stevens and J. N Tosswill who represented the interests of the school. Hector tested them with his opinion that the need was for students first provided with basic science, then persuaded to go to the school for practical agriculture. Could the students at Lincoln spend part of their time at Canterbury College?
In his submission to the 1879 inquiry, Tosswill envisaged an experimental farm of about 50 acres to conduct field trials (regardless of profit) and a model farm for practical training of students—to work towards a profit. But he claimed that profitability should not be absolute for it would be of value to show students the results side by side of different systems of farming—what to avoid and what to follow. This could result in loss of profit. He contended that a great lack, of farmers in New Zealand at that time, was instruction from men who were not only scientific but who had practical knowledge. He anticipated the teaching of subjects in their agricultural context and did not favour “sending the lads from the farm (Lincoln) to receive instruction at Canterbury College.” But he wanted them to have a liberal education, including English and general knowledge.

In his submission to the commission E. C. J. Stevens justified the previous and continuing use by Canterbury College of funds derived from the agriculture school endowment. He drew upon his experience at the Royal Agricultural College, Cirencester, and advocated liberal courses and acceptance of young men who were mature on entry and who had already had a sound basic education. He expected the Lincoln school to be dominantly technical and to use where possible the teaching facilities in basic science at Canterbury College. He believed that to be a complete farmer a man should be able to farm his own land, but also be qualified to do his own farm engineering, surveying and veterinary work. Questioned on his view as to whether two classes of students should be provided for—graduates and diplomates—he said he did not favour this.

Sir Julius Vogel also was interested in the Lincoln project and in 1878, while he was Agent-General for New Zealand in London, he advanced a proposal to the Government to assist young men in Britain to enter the Lincoln School of Agriculture. He wrote, “Let the Government put apart tracts of good agricultural land in various localities; payments to be deferred at suitable interest rates. Give assisted passages to immigrants—up to 20 of them to be received at the School on terms which will comprise a payment for their education and for a piece of land at the end of the time when they have obtained sufficient knowledge to practically deal with it”. The Agriculture Committee decided they would not do anything about this but that as soon as the school was in a sufficiently forward state to allow reception of students, a prospectus explaining the arrangements and charges, would be forwarded to the Government.
The School of Agriculture opened on July 19, 1880, with 16 students present, 11 in residence, the first enrolment being that of H. A. Knight.*

Ivey was manager-director, controlling all activities—residential, farm and instruction. He was the chief lecturer of the comprehensive subject "Agriculture", aided by a laboratory assistant, N. T. Carrington. In 1881 E. M. Clarke was appointed resident master, becoming the first of the diverse and colourful line of housemasters—single men—who throughout the years treated their duties with varying degrees of enthusiasm or apathy. In essence they were to supervise discipline in a residential institution. Clarke lectured in mathematics and surveying. One, E. C. Buckley, was appointed as an English lecturer but as was common before specialisation he had also to teach other subjects, in this case physical geography. He was required also to attend to clerical work after the departure of the part-time bookkeeper (Davis, 1881-2). Veterinary science was provided for the first 20 years on a part-time or visiting basis, initially by T. Hill, said to have revelled in animal dissection while smoking the strongest-obtainable tobacco. The pain of his gout and corns was evidently eased in language for which he became celebrated. F. W. Hutton, professor of biology at Canterbury College, visited during two years to conduct the course in natural science, half his salary paid by the school, until T. Kirk was appointed full time. Hutton also presented a collection of insects, relics of which are retained in the entomology department. This lectureship was unstable and succeeding teachers were Wainwright, Wilkinson and Dr. R. von Lendenfeld. Julius von Haast, professor of geology, spent one day a week at the school during the first two years and some of his collection of geological specimens are still in the soils department collection. Chemistry was taught by F. Barkas for two years until 1883 when George Gray**—"Paddler" on account of his style or manner of walking—took charge and became the first of the long service (32 years) staff identities, esteemed by generations of students.

On the farm, Ivey employed local labourers who were retained so long as they proved capable of giving instruction to students.


**George Gray, F. C. S. (1849-1934) born Southampton; teacher Hartley Institution; assistant to Prof. A. W. Bickerton Canty Coll. 1874-83; L/Chemistry Lincoln 1883-1915: Acting Director three periods; retired to live at Lincoln.
The first reference to a farm manager, other than Ivey himself, was not until 1890.

The Board was pleased with progress for the first five years during which about 25 students were annually in residence. The Premier, Sir Robert Stout, had visited the School in 1886, and he was reported to have been surprised at the extent of the establishment and to have expressed himself as highly pleased with it and the manner in which it was conducted. Other visitors included the Governors of the Colony, Sir Arthur Hamilton Gordon 1882, Lord Onslow 1890, Lord Glasgow 1894. Of the latter it was reported that their Excellencies would "drive over to the College from the Ilam homestead in one of Dalwood's four-in-hand drags" and for the occasion, at the preparatory board meeting "a return was required of members showing number of seats required in the horse-drawn vehicle". These occasions at Lincoln set an early precedent. All work at a standstill, visitors taken on a carefully devised tour of inspection under selected guides, followed by speech making and refreshments. The students, if not out of sight, at least held at a respectful distance. In recent times, as with the Duke of Edinburgh 1973 and the Shah of Iran 1974, there was more flexibility in the official planning.

Among Ivey's functions were those of controlling the catering. His original agreement was to provide board for students at £50 per annum; he purchased his own supplies and employed his sister as housekeeper. In 1883, at the request of the Board, he agreed to accept £45, which was a personal loss to him. He urged the board to arrange staff for the catering, upon which they agreed, but a substantial increase in boarding charge followed, although farm produce was used. The boarding fee increase to £65 (no charge was made for tuition) was deemed to be the reason for the decrease in 1887 to 17 students. A financial depression caused a fall in farm income. Throughout its first decade the college, largely dependent on produce sales for development income, suffered through the consequences of a nationwide depression. Economies were called for by the agriculture committee, including dispensing with the part-time veterinarian (Ivey being required then to lecture in that subject). Income from farm produce sales and from student fees was almost halved as between 1885-7, and by 1888 the working bank account was substantially in debit. In hope of reducing the loss, Ivey was urged to expand his dairying plan. He had early embarked upon cheese production, buying-in additional milk from outside suppliers—17,000 gallons in 1884. In the following years several tons of cheese went to London, some of which secured a premier award in the 1886 Colonial & Indian Exhibition.
A measure of public criticism became evident. "The system of management with regard to the School of Agriculture seems to be as nearly as possible what it should not be," said the journal of the Canterbury A. and P. Association. "It would appear that every precaution has been taken to ensure that the gentlemen comprising the governing body should have no particular knowledge of a special want of the agricultural section of the community... the Board of Governors have found in the Agricultural School a singular combination of a milch cow and a white elephant of uncomfortably large proportions." The situation resulted in the appointment by the Government of the 1888 Commission on the School of Agriculture (D. McMillan, a former M.P., M. Murphy, secretary of the Canterbury A. & P. Association, *H. Overton, then farming "Meadowbank", Ellesmere).

The Commission's report (1889) confirmed the suitability of the site, purchase and establishment of the land. They were impressed with the general condition of the crops and stock but took exception to the absence of neatness and order. They noted the absence of experimental work and instanced deficiencies that should not occur in a place charged with "the teaching of scientific and practical farming". They accepted Ivey's reason for the deficiencies as inadequacy of funds permitted by the board. The Canterbury registrar's accounts revealed that the agriculture endowment had been charged with £7954 as a contribution towards Canterbury College buildings on the Christchurch site. The commissioners contended that Section 9 of the Canterbury Educational Reserves Sale and Leasing Act 1876, relating to use of endowment funds for purchase of sites and erection of buildings, had not been correctly interpreted and that the board should have regarded the transaction it made as an investment, with provision for repayment, with interest. They found that the endowment account after providing the cost to date of the Lincoln farm (£17,712) and the contribution to the Canterbury buildings (£7,954) had a credit of £52,700, producing 5½% per annum. The buildings account showed an expenditure of £34,044 towards which £5,954 had been transferred from a general account leaving a debit of £28,000, which had been offset by that amount allocated from a general purposes loan on which 7% interest was being charged to the school. The interaction of these two accounts resulted in a loss to the School of £350 per annum and the commissioners called for legislation to enable the overdraft to be paid out of the endowment to save this annual loss.

* Grandfather of Dr. L. R. Wallace appointed to C.A.C. staff 1941 prior to overseas war service and with Brit. Ministry of Food, joined Dept. Agric. 1946; subsequently Director, Ruakura Research Centre, Hamilton, and of V. B. Wallace (B.Agr.Sc. at C.A.C. '36) killed on active service World War II.
It was further revealed that up to the end of 1888 £3650 had been arbitrarily allocated towards the expenses of Canterbury College (annual amounts ranging from £125 to £525) which "we consider to be out of all proportion to the work done by the college for the benefit of the School of Agriculture". It was pointed out that the college accounts laid before Parliament were prepared in such a manner that it was impossible to ascertain the state of the funds of the School of Agriculture.

The Commission contended that the farm should be able to pay expenses and contribute a reasonable amount for rent and management. The staff and course arrangements were deemed satisfactory and regret was expressed that so few students were availing themselves of the advantages to be derived from the institution. The fees were too high and if a different system of catering arrangements was adopted the fees should not exceed £30. A system of scholarships (actually bursaries) was also called for. The commission concluded that the board of governors had failed to manage the School of Agriculture so as to produce the best results. They could see little hope of improvement while the method of electing members of the board continued, viz. by graduates of the university. The commission regretted that the management had not been placed under a board of agriculture as contemplated by the Provincial Council when the endowment was made. The commissioners made comparison with the Council of Agricultural Education in Victoria (the Agricultural Colleges Act 1884, Victoria, Australia) specifically referring to a wide basis of representation of people who knew their business in these matters. They proposed government-appointed members and representatives of the A. & P. Societies. The latter were the dominant force in agriculture at the time and met in annual conference at which (from 1892) they reiterated demands for better provision in the teaching of agriculture.

Coincidentally, at this time Professor Wallace, of Edinburgh University, had visited Lincoln after an inspection of the Australian colleges, Roseworthy (Est. 1884) Dookie (Est. 1886) and Longerenong (Est. 1889). Of Lincoln, he said the facilities were excellent, pupils were too few and the fees too high. He believed the management at Lincoln should not be mixed up with the other work of the board (school of art, museum, library, schools) and he supported the proposal for a separate board. He urged the authorities to develop a system of bursaries to attract students from rural schools.

Another supporter was Sir James Hector, presiding at the Christchurch meeting of the Australian Association for the Advancement of Science. His group went to Lincoln in three horse-drawn drags
and in acknowledging the welcome he said the success of the institution was known throughout the Australasian colonies and he himself took deep interest in it from the fact that one of his boys had been a student under the able instruction of his friend, William Ivey. Hector, as Chancellor, also accompanied the Senate of the University of New Zealand on their visit a few years later when “they were driven out in the forenoon in Hayward's drags. The wind and the dust made the journey unpleasant”.

Support was also received from a source in the U.S.A. who in “The Press” of September 30, 1890, said: “Your college is a thousand times more efficient than anything I know here;—has just graduated from Pennsylvania College, by far the best I know, and he does not know one quarter as much as—learned at Lincoln. The Lincoln College and Mr. Ivey are far superior to anything of the kind in the U.S.A.”

The report of the 1888 Commission provided E. C. J. Stevens with an opportunity he had been waiting for. Notwithstanding his membership of the Canterbury College board, in 1889 he introduced into Parliament the Lincoln School of Agriculture Empowering Bill to provide for establishment of a governing body as recommended by the commission, repayment by Canterbury College of £7954 to the school's funds, an appropriation by Parliament to be utilised through a constituted council of agricultural education. The local newspapers referred to the measure as “The Hon. E. C. J. Stevens Bill”. He was asked by the Canterbury board to delay the bill until members had had a chance to consider further provisions. An exchange of telegrams followed:—From Stevens: “How long for consideration. Bill has been public property about 10 months.” From the board: “As to bill being public property 10 months, board has received no intimation whatever from Government who it assumes is introducing the measure”.

It was resolved that as the board had administered the school for many years a bill having as its object removal of management should not have been introduced into the legislature without consultation. The agriculture committee considered that no such change in the management was called for and that to require Canterbury College to refund the sum referred to would be inequitable. There was a temporary stay when the Bill was shelved for the session through being adjudged a local or private bill, not a public measure.

An attempt was now made to assist or improve administration by the establishment of a board of advice of four well-known agriculturists and the board chairman, one of the former to be the president, Canterbury A. & P. Association pro tem (Appendix).
The assigned duties included regular inspection at Lincoln, report on property and equipment, method and scope of instruction; examination of accounts; initiation and conduct of examinations, advice on agricultural experiments, advice as to improvements that could add to the utility of the agriculture college (the latter designation was now being favoured). Ivey as director was to be consulted but not to attend unless invited.

The board of advice functioned usefully for five years and replaced the previous system of an annual appointment of two farm examiners. The Overton brothers, Henry and J. W. were the stalwarts among those who served and as farmers they continued their strong advocacy for young men to go to Lincoln.

Further aspects of Ivey’s work are considered in the following chapter. Hard work had impaired his health and the board in early 1892 granted him six months leave of absence. He had made one return visit to Victoria to give evidence to a Royal Commission on Agricultural Education but refresher leave is not recorded at any stage in his 14 years service.

On April 18, 1892, when running to the road to meet the coach to take him to Christchurch to attend a board meeting, he collapsed. A student, H. H. Fisher saw him fall and ran to his aid but Ivey had died, aged 54—the only principal in the line of seven who died in harness. (Fisher later farmed at Albury, in South Canterbury.) The vicar of Lincoln, for whom Ivey had been warden and lay reader, arranged for a commemorative oil painting, which was accepted by the board and is now among the honoured relics in the Memorial Hall. The parishioners also contributed to memorial candlesticks and a book-rest for the altar.

Within a month the board resolved that £100 be paid to Mrs. Ivey in consideration of her vacating that portion of the school used by the director and his family, to enable the board to give effect to arrangements made for the temporary management of the institution, pending appointment of a director. The board’s action provoked criticism. One wrote, “I have been waiting to see if the Board would do more than pass an empty vote of condolence . . . he had the whole conduct of the school of agriculture on his shoulders, aggravated by want of sympathy from a section of the board. The least they could do would be to vote the widow six months salary for the leave period he was applying for when he died or to vote Mrs. Ivey one month’s pay for each year the late director had served—but within a week of the bereavement she was visited by the chairman and asked when she could leave and later voted £100 conditionally upon her leaving within a month . . .” Others wrote deploiring the cavalier treatment of widow and family. But in
response to a request from Mrs. Ivey, four years later her elder son was admitted to the school without fee. He successfully completed the course and some of his descendants remain in New Zealand. At the 75th anniversary of the college, Charles Wood, second student enrolled in 1880, gave a memorial plate mounted on an oak base, formed from a tree Ivey had planted, and this was erected on an entrance wall of the original building, thenceforward known as Ivey Hall.

Fifty-two applicants, most of them with no academic qualifications wanted the post. Professor Wallace, Edinburgh, urged the appointment of one G. F. Foaden, B.Sc., but the Agent-General in London, reported that he was too young and inexperienced. Other inquiries were without result, so the Agent-General was requested to appoint a commission in England (including Lord Onslow) to obtain a suitable man. In 1893 a cable was received, saying, "Bayne appointed Lincoln". This had been preceded by a mix-up reported by the London correspondent: an offer had been made to John Bayne, M.A., then professor of agricultural science at the School of Agriculture, Cairo. Whilst on leave in England he seemed anxious to obtain the post but on returning to Cairo he declined. "A suspicion has arisen that Mr. Bayne's salary has been sprung in order to retain his services in Egypt," said "The Press". Mention was made of using the law to make Bayne accept, he being regarded as a firm tenderer and bound by his tender. It was obviously unsatisfactory to have an unwilling man but Bayne later telegraphed from Cairo asking if the Lincoln appointment was still open, whereupon the advice was sent (16/11/1893) that he had accepted. He arrived in March, 1894, without a wife or helpmate and the board accorded thanks to Lord Onslow and the Agent-General for their help in selecting a director, and also commended Gray for his assistance as acting director.

The political battle had now resumed and a Lincoln School of Agriculture Empowering Bill (1892) was proposed. In moving the second reading, A. E. G. Rhodes outlined the evidence presented to the 1888 Commission. Maladministration of the agricultural trust was alleged and it was contended that the total sum taken by Canterbury College should be repaid, with 5% interest. It was suggested that the Government should take action in the Supreme Court to test whether the money had been legally appropriated or not. Other members advised the House to throw out the bill but Mr. Hogg said the Canterbury College Governors formed a close corporation that from time to time perpetuated their own existence. He declared they had not only misappropriated monies but had grossly mismanaged the School of Agriculture. The Hon. W.
P. Reeves said he did not like the bill at all and did not want to see any money paid to the school of agriculture. An amendment throwing out the Bill was carried. The matter was raised again by Sir John Hall at a meeting of the Canterbury A. & P. Association. He reminded members that £7900 was owed to the School of Agriculture by Canterbury College and he wanted the money to be used for scholarships. In 1894 R. Meredith again asked the General Assembly if the Canterbury board had refunded the sum of £7954 which they had wrongfully taken from the endowment funds of the School of Agriculture, and if not what steps the Government intended to take to compel the board to pay. The Minister of Lands, Mr. McKenzie, said he was not called upon to champion the school and could not see his way clear to introduce legislation until the parties had made up their minds what they wanted.

Within the board itself, increasing dissatisfaction was being expressed. G. G. Stead called for action to enlarge the scope of the school. He said the public received a poor return for the money spent and he thought there were hardly 100 men carrying on the business of farming that had gone through the school in the first 10 years. “The Press” in a leading article echoed the complaint and added that the former students “do not include one who may be termed a man of mark ... we cannot recall one instance since the college was founded in which it has taken the lead in any new departure or supplied our farmers with an item of information valuable or otherwise”. Ill-considered comment indeed, for several former students were at least on the threshold of distinguished careers and effective public service, including H. A. Knight, Charles and Walcott Wood, the Lance brothers, and A. J. Birdling. On information to farmers, a very great contribution had been made by Gray (Chapter 2). One former student R. N. Lyne (1887-9) who was to become a man of mark as Director of Agriculture, Zanzibar, learned of this criticism and wrote from England supporting the merits and qualities of the school, at least as it was internally managed and conducted, and suggested that it need not do original work, but should be the medium through which scientific discoveries were tested for local application.

The board was now more sensitive and perhaps belatedly aware of a need to demonstrate that the School of Agriculture would prosper, in time and with patience, within the aegis of their continued governance. Yet another committee was directed to report on the feasibility of enlarging the scope of work and within a brief space they recommended more accommodation for students, more scholarships, pig-feeding trials, renovation of what was a pest-infected orchard, development of a kitchen garden and small fruit
THE SEED THEY SOWED

unit, and a forestry nursery. Experiments were also conceived “with a view to learning, if possible, which breed of sheep consumes the least grass in proportion to the volume and value of wool grown and the weight and quality of mutton produced.” The college board debated the costs involved. It seemed they were anxious to impose an experimental charter on the staff but they were unwilling to provide the finance for it. Henry Overton, chairman of the Board of Advice, said the committee had not done its work properly and was in fact ignorant of work currently in progress or completed. He persuaded the board to reconstitute the board of advice, to comprise then three Board members, four “gentlemen experienced in agriculture not being members of the Board, and two ex-officio, the chairman and the A. & P. president pro tem”. It was a rearguard stand by the college, for the abolitionists led by Stevens, at work in the corridors of power, were now prepared to force the issue.

The issue was resolved in 1896 when the climate of opinion enabled G. W. Russell, member for Riccarton, to draft a bill to enable the Canterbury College Board to provide wider representation than permitted by graduates alone. “The Press” said: “The Government is introducing a bill to make better provision for the government of Canterbury College and Lincoln Agricultural College providing as from January, 1897, the School of Agriculture shall be deemed separated from Canterbury College and shall be managed by a separate body”. Two separate bills were initiated pertaining to each institution, but under the guidance of the Minister of Education and the Minister of Public Works they were incorporated in one measure and passed in October, 1896, as the Canterbury College and Canterbury Agricultural College Act (Appendix 1).

Canterbury Agricultural College was to take over the endowment reserves, the land and buildings at Lincoln “and all engagements, contracts and liabilities pertaining to the School”. Repayment of £7954 was referred to the Supreme Court. The first meeting of the Lincoln board (held at Canterbury College) on January 7, 1897, under the chairmanship of Henry Overton addressed a letter to the Canterbury board asking for the funds belonging to the School of Agriculture to be handed over. They were informed no funds were available as the account was overdrawn.*

*The College bankers throughout have been the Hereford St. Christchurch Branch, Bank of New South Wales, including for a period a mobile unit to serve the student-staff community; now established as a Branch in the 1976 Administrative building.
The Government was then asked to arrange for arbitration on money under dispute but somewhat naively the Lincoln solicitor* was requested to sue for the sum of £18,000. The Minister of Education indicated that Mr. Justice Denniston would consider the order of reference, which he did with such effect that the Canterbury chairman was able to announce that the Court had awarded the Agricultural College the sum of £6254 with interest at 5% from the date of the award until the amount was paid. The debt was finally settled seven years later (1907). The newspapers retained their close appreciation of the news value of the issue. The "Lyttelton Times" contended "the Agricultural College was long regarded by the governors of Canterbury College as an incubus rather than as one of the most valuable institutions under their control but it is to be hoped that now the college is on a separate footing ways and means will be found to realise the objects of its founders". But two months later the paper claimed that "the position of Canterbury Agricultural College appears to be drifting from bad to worse and if the board is unable to make it viable the proposal to hand the College and its endowments over to the State will have to be seriously considered".

* The College solicitors. In the period 1877-96, the solicitors of C.U.C. were Messrs. Garrick & Cowlishaw. At the separation (1897) T. W. Stringer was appointed by the C.A.C. Board and was responsible for College legal work until appointed to the Supreme Court bench in 1913. In 1905 the firm of Duncan & Cotterill amalgamated with Stringer & Cresswell under the name Duncan Cotterill & Stringer. Members of this firm who served the College in a wide range of legal work after Stringer were A. F. Wright (1913-49), P. Wynn-Williams (49-75) K. G. L. Nolan (75- ).
Ivey, who was an agriculturist, must have found difficulty in planning the course of instruction. His board before his arrival had imposed a structure of two alternative forms of entry by examination. Entrance scholarships, valued at £65, more than covered tuition and residence and were based on success in mathematics, natural science, physical geography, chemistry, English, Latin and a choice from French, German, Greek, English history. There were five successful scholars in 1880, two in 1881 and then this scheme lapsed. A matriculation or entry examination was also to be conducted requiring a 40% pass in English, geography, and mathematics. The examinations were conducted in December 1879 and May 1880, in Auckland, Wellington, Christchurch, Nelson, Dunedin (by what arrangement is unknown) but the entry examination had to be abandoned after two years as the pass ratios of entrants were woeful. The “Lyttelton Times” of February 24, 1880, said: “The backwardness of the public in taking advantage of the Agriculture School ought now to rank as a thing of the past. It is not only that the terrible preliminary ordeal of a certain examination has been wisely dispensed with, the director has added a positive incentive to those who want to give their sons a practical as well as scientific farming education”. Other comment said “the committee had recommended that a high standard should be fixed for entry in order to induce the clever lads to enter the school. Facts, however, were stubborn things and the fact that only two candidates came forward showed that the examination had frightened intending applicants”.

Attainment of the fifth standard in primary school then became the qualification for entry, and to this low standard may be traced some of the disapprobation incurred by the young college. Ivey was left to do what he could with intellectually and academically unpromising entrants. After its futile effort with the massive structure
of the scholarship and entrance examinations, the board had con­
ceded to him the planning of the course at the school. The absence
of any academic help, in comparison with the massive present day
professorial board participation in course planning and supervision,
is one of the sharpest contrasts between the states of affairs at the
beginning and end of this volume.

Ivey, almost certainly aided by E. C. J. Stevens, drew upon
recollections of the course at Cirencester and the outcome was the
initial three-year course leading to a certificate. The subjects to be
passed were agriculture, chemistry, geology, zoology, veterinary
science (three unit subjects), physics, botany, book-keeping,
mechanics (two units), surveying, mathematics (one unit subjects).
The level of knowledge required of students of these times, in
agriculture for instance, is revealed by the following example of
examination questions, Ivey himself being lecturer and examiner in
that subject.

"Show that land is improved by grazing with sheep."
"Describe the points of a Shorthorn bull."
"Give your idea of a typical food for a farm working horse,
a horse at rest, a fattening pig of, say, 3 cwt."
"How would you set about creating—by breeding—a sheep
of a type suitable in your opinion, for any particular
country?"
"What is meant by worked out land and describe the methods
by which such can be restored?"
"Describe Clayton & Shuttleworth’s combined threshing and
dressing machine. Trace the course of sheaf of wheat through
the machine."

The educational standard and intellectual capacity of early en­
trants, however, were too low. After five years only 20 had qual­
ified with a pass in the certificate examination, about a 20% pass
rate.

The working programme involved lectures and farm work,
initially a half-day each. This procedure continued for 80 years
though for the greater part the alternation was one week about. The
cost of residence and tuition was first £46.10.0, raised to £65 in 1884
and reduced to £40 in 1889. Thereafter and for the succeeding 50
years the full course at Lincoln, including board and residence,
varied little from £50 per annum. In the earlier years, students were
paid the cost of travelling to and from their homes within New
Zealand once a year. Payment to students for their farm work soon
became contentious. An investigating committee deemed that stu­
dents were being too highly paid, ½d. per hour should be
sufficient; but they settled for 2d. per hour. Commenting on students’ labour in a letter to his friend Dr. Volcker, F.R.S., Ivey wrote “... for my part I would gladly dispense with student labour but I think the weak part of the Cirencester course is the absence of compulsory farm work ... make compulsory farm work a feature”.

He reiterated in a letter to the board chairman, “I am strongly of the opinion that it is essential that students should go through the drudgery of the farm. A few students have an objection to confessedly unpleasant parts of farm routine and, unfortunately, some parents think their sons should not be required to do such unIntellectual work. There has also been a tendency to our getting a class of student who tries to appear to be above what is known as ‘Coc-katoo’ farming and these men have extraordinary ideas as to what they should not be required to do . . .”

The practical basis of the diploma course and the discipline of dirt, odour and sweat remained a feature of the Lincoln experience for 80 years, by which time the college farm could no longer provide work for the numbers of diploma students in the course. But there was no weakening of belief in the merit of practical instruction and pre-entry and post-entry farm training continue to be under detailed scrutiny. The examining of students in their practical farmwork by a panel of farmers—well disposed towards the school and friends of Ivey—was a feature during the first decade. J. W. Overton and John Rennie* regularly and enthusiastically served in this way and reported annually, at length and in detail, on the standard of student farmwork. After four years’ experience Ivey reported in 1884 that although most students could not pass the examination for the certificate under three years, “there was a minority of clever and more industrious students who could by hard work pass in two years and they often demurred at having to stay three years and left without completing the course”. To induce these better students to remain, the course was reduced to a two-year plan, those failing being permitted a third year if they so desired. The certificate was replaced in 1895 by the diploma of agriculture, requiring pass standards in lecture course and practical farm work. Certificates were available for passes in individual subjects. From 1903-29 however, the three-year course was re-

sumed. Throughout the history of the college, this diploma course with subsequent amendment has thrived and developed from the small enrolment in the Ivey era (never exceeding 25 in any one year) to a peak figure of 240 entrants in 1968.

Some analysis of the deficiencies at Lincoln after the first 10 years was made by Wild.* "One may inquire," he wrote, "what exactly was Lincoln expected to do ... The terms of the original endowment required it to provide a practical education in colonial farming and to afford facilities for the study of related sciences. This Ivey tried to do but through lack of finance he was not able to provide different courses suited to students with different intellectual capacity, attainment and interests. There was one uniform course for all. It was impossible to give a training in agricultural science to students who had no other training in science, as Gray who was responsible for agricultural chemistry, often pointed out. There was much talk, and a belief that there was almost mystical value in agricultural science, but in fact farmers were not yet ready to give serious attention to anything of practical value it had to offer ... There was as yet no great body of scientific knowledge either to hand on or to apply, and certainly not much that was of use to people untrained in scientific method. Even in such a fundamental matter as soil, while the chemist could make an analysis, he could make no sound deductions therefrom ... But there was more need and more scope for research in agriculture than for instruction in agricultural science and there was little of that ..."

Ivey and the Rev. C. Turrell (1883) discussed the possibilities of initiating a full degree course at Lincoln or, alternatively, a B.A. taken at Canterbury followed by a modified diploma. Nothing occurred until 1891 when the visit of Edinburgh's professor of agriculture, T. Wallace, revived and strengthened the ideas. Wild has discussed the Wallace proposition that a two-year course at Lincoln should count one year towards a university degree. He certainly expected fuller integration at academic levels between courses at Lincoln and at Canterbury. Wallace influenced the University Senate. Sir Robert Stout gave a lead at the 1891 meeting and called for plans either for holding university examinations and issuing certificates or for amending the B. Sc. statute to provide

agriculture as an option, the agriculture certificate subjects to be cross-credited. Stout said the agriculture school should be increasingly linked with the engineering and science schools (of Canterbury College) and that the Lincoln school should be recognised as the school of agriculture for the colony. He criticised the 1888 commission for its emphasis on practical courses. "The Commission have not recognised," he said, "that recent developments in agriculture require a more complete scientific training than that given to farmers in the past. What is needed is a full and complete course leading to a B.Sc. in agriculture".

He was supported by "The Press". "The Senate yesterday engaged in consideration of a question of great importance, the means of encouraging the scientific aspects of agriculture... we have the agricultural school at Lincoln, an institution in most respects equal to any in the world and we hope the step the Senate has taken will make the institution even more useful... the aim is to combine the Lincoln course with science instruction at Canterbury College".

The report continued with the indication that a course was contemplated that would be equated with the Edinburgh agriculture degree—said by the newspaper to date back to 1790. It was also contended that the proposed university courses "would be most advantageous to those students who may not have the means to farm".

The Senate was surprisingly and suddenly innovative. It resolved "that intimation be given that in 1892, the university will be prepared to issue certificates in agriculture to those who have kept two years terms at the School of Agriculture, Lincoln, or at any other school of which the Senate may hereafter approve, and that the subjects for examination will be those now taught in the Lincoln College".

No student availed himself of this university certificate until 1925-7 when J. E. Bell, later fields superintendent, Department of Agriculture, Auckland, and M. B. Cooke who became senior lecturer in farm management and valuation at the college, completed the requirements. They took the diploma course, and also passed the prescribed university subjects, then defined in the B. Ag. degree work, at Lincoln. In effect this university certificate in agriculture was the then (1925-27) bachelor's degree course, except for the three intermediate basic science subjects. Concurrently, the Senate of 1891 also adopted the report of a committee that had followed up Wallace's plea for a B.Sc. degree (in agriculture). A four-year course of 14 subjects was approved, the first two years involving mathematics and basic sciences to be studied at an affiliated college of the university, the next two years to be con-
cerned with agriculture and cognate subjects at Lincoln. The statutes of this degree, B.Sc. in agriculture, were adopted by the 1895 Senate which meant that Lincoln was recognised as a special school of the university of New Zealand, the first in Australasia offering a degree in agriculture. Seventeen years were to pass before any student elected to follow this degree course (W. S. Hill and G. H. Holford 1909-12). There was no course promotion, and the requirement of two years' terms in science at a university impeded students residing at Lincoln.

In Australia, agriculture degree courses commenced in the universities in Melbourne (1905), Sydney (science faculty 1910), Western Australia (science faculty 1913), Queensland and South Australia (1927), Tasmania (1962). The claim has been made that Lincoln is the longest established college of agriculture in the southern hemisphere, but a school of agriculture, now faculty of agronomy, in the University of Chile, Santiago, dates from 1876.

The 1891 Senate had met, appropriately, in Christchurch and it was reported that after their business dealings they made a visit to Lincoln. The Chancellor, Sir James Hector, was thanked for the recognition given to Lincoln and the confidence shown in allowing the school to carry out the technical part of the proposed course. The newly appointed director (J. Bayne) was given credit for the success of the negotiations on the degree but the plan had been conceived and launched in Ivey’s time (1891).

By 1886 the farm was being used as follows (approx. area):—

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
<th>Purpose</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat (7 varieties)</td>
<td>101</td>
<td>Fallow for turnips</td>
<td>85</td>
</tr>
<tr>
<td>Oats (3 varieties)</td>
<td>57</td>
<td>Rotation grass</td>
<td>189</td>
</tr>
<tr>
<td>Barley (2 varieties)</td>
<td>30</td>
<td>Permanent pasture</td>
<td>108</td>
</tr>
<tr>
<td>Beans (2 varieties)</td>
<td>17</td>
<td>Buildings, Plantations</td>
<td>47</td>
</tr>
<tr>
<td>Peas (2 varieties)</td>
<td>24</td>
<td>Experimental plots, etc.</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total grain</strong></td>
<td>229</td>
<td><strong>Total farm area</strong></td>
<td>664</td>
</tr>
</tbody>
</table>

The livestock were Sheep, (Leicester 267, Lincoln 87, Crossbred 970) total, 1,324; Cattle, 51; Pigs, 17; Horses, 17.

By present standards it was a well-provided, mixed livestock-cropping farm. With half the area in pasture it is evident that there was a tradition of rotation cropping and a proportionate annual renewal of pasture, cultivation being done with three to four horse teams, maintained on chaff and grain produced on the farm. Ivey contended that “the turnip crop is really the basis of all good farming in similar climates to ours and should be the mainstay for winter feed”. He adopted a system of management that used fed-off
turnips and swedes as a fertility restorative crop in the succession through cereals and back to pasture. There was an adequate range of implements, including a stationary theshing machine and an extraordinary unit that has vanished, not even a photograph remains. This was the water-drill, to which there were several references in early farm reports. This delivered turnip seed and water—up to 800 gallons per acre—and the process aided seed germination. Ivey reported (1886) "the turnip crop is very fair. Because of the dry summer the crop was necessarily sown late in January. Without the water-drill and a little artificial fertiliser we should have been like our neighbours, without turnips. With these aids we can winter 1,350 sheep and sell turnips for some hundreds besides".

Efforts were made to combine the farm routine with the conduct of field trials, really only observations, for statistical method and plot technique were then (1885-6) unknown among the Lincoln staff. In any event, Ivey had neither staff nor finance to conduct adequate experiments. He did record in his reports comparative yields in the wheat, oat and barley varieties. These rarely exceeded 50 bushels per acre in that era preceding plant breeding improvement and knowledge on fertiliser requirements.

In 1882 and 1891 he reported on experimental work in progress, probably the first New Zealand agricultural experiments. There was a plant introduction project listing growth observations on more than 200 species and varieties—including 44 wheats. They had been obtained from world-wide sources and among the entries were oil plants like castor bean and sesame, which failed, and other untested crops like sugar beet, that thrived. It was suggested that there were prospects in some situations for certain indigenous grasses. The three-acre orchard might have become the country's first horticultural research centre based on the observations made on the apple stocks, Northern Spy and Magentine, "both possessing powers of resisting blight". This biological work was in the care of E. Wilkinson who also reported on the winter food of small birds which had been shot to enable analysis of crop and weed seeds among the gizzard contents. Wilkinson reported on some of the first applied entomological problems besetting farmers in the 1880s. In the cereal growing routine the need to use a seed disinfectant as a specific against rampant covered smut (Tilletia levis) was demonstrated; also the value of hot water treatment against loose smut (Ustilago tritici), and the sowing rate of 1½ bushels per acre was recommended for wheat.

Agricultural science at the end of the 19th century was based predominantly on chemistry; both Ivey and Gray were fellows of the Chemical Society and this was manifest in most of their experi-
mental work. It was a time of exploitation and false claim of a miscellany of “manures”, superphosphate types of different origin, bone dust, nitrogen and potassic mixtures. The first guidance given the community in choice and use of fertiliser was that of Ivey and reported in detail in the 1882-8 N.Z. Country Journals. Gray was not orientated towards practical agriculture but where chemical analyses were called for he was without peer. His work was assiduous, in countless analyses in fertilisers, farm crops, butter and cheese, soils, bones, rainwater. L. J. Wild paid tribute to Gray as the country’s first agricultural chemist and T. W. Walker in a rural education bulletin in 1954 made this assessment: “One of Gray’s main contributions was the analysis of soils and fertilisers for farmers and he showed remarkable prescience in a talk on ‘The analysis of Soils’ given in 1879. With the crude methods of soil analysis then in vogue Gray concluded that New Zealand soils were generally deficient in lime and he was stressing then the value of lime for legumes . . . He analysed a large number of samples of superphosphate with the object of safeguarding farmers from buying inferior ones; he was combating the glib tongue of salesmen with facts and figures. He must have been one of the men who pressed for legislation to safeguard the farmer because he was appointed to assist with analyses under the Manure Act, 1894 . . . he estimated the small amounts of nitrogen and sulphur brought down in rain at Lincoln . . . he found that some 75 lb. per acre of salt were deposited by rain each year and New Zealand pedologists are now (1954) realising the effect this may have on soil-farming processes”.

In one of Gray’s reports there were details of analyses on bone dust (33 samples) Island guano (40 samples), superphosphate (58 samples) and soon after an appreciative letter was published by “A victim of a local manure”. Of Gray as a person it was said, “a short, dark man with a pointed beard; always immaculately turned out, wearing at lectures a black morning-coat, striped trousers, stiff high collar, black bow tie. We all liked our indoor staff but we loved ‘Paddler’, not so much for what he did but for what he was . . .” (J. Penniket 1900-1).

For many years there were no flocks of stud sheep at Lincoln. Requests for authority to establish them were repeatedly rejected, but Ivey was able to initiate some significant work which, however, he was disinclined to follow through. He said: “My instructions were to attempt to fix a breed of sheep equivalent to the first cross between the Merino and a long wool . . . from all breeding experience this seemed to me impossible . . .” He persisted for three years with two-way crosses between some Merino ewes and Border Leicesters, reporting on his progress, but he had no faith in the
exercise which others like James Little were concurrently carrying through to a successful conclusion in founding the Corriedale breed.

The milking cattle were all stud Shorthorn, all calves being kept, and upwards of 40 fattening beasts annually. Ivey had asked for the establishment of a co-operative dairy at the school and involving district farmers, but the board did not agree. Despite this rejection, he guided the farm staff in cheesemaking, and substantial amounts were shipped to London to test the market. The result was not reported but the return evidently averaged 7d. per pound.

The profitability of the farm as a whole was satisfactory in the first decade and the financial summary prepared for the 1888 Commission revealed a credit of £6000 on 10 years' working operations. This reflected credit on Ivey's management. He “carried” the farm until 1890 when the first appointment was made of an overseer (H. Allington). The Canterbury College treasurer, however, was able to translate this working surplus into a £6000 deficiency for the decade, after substantial accounts were offset against the credit, to cover students' labour £1530, rent at 20/- per acre per year from date of purchases (£5000) and an additional charge “management of the farm” £2500. Charging the latter item may have been legitimate when interpreted in a sense that it was a contribution from the profits towards Ivey’s salary (a high proportion of his time being devoted to the farm enterprise). It would have been just though, if some credit had been allowed in the compilation of accounts for the difficulties imposed on the director. In addition to those previously mentioned, he had to manage without a telephone (installed 1895) or typewriters. Local transport was by horse and gig, and train or coach to Christchurch once a day.

Most of the entrants in the first years were not well prepared in scholarship or educational qualifications. There were few representatives from New Zealand’s public schools. At an early stage, when the college was under incessant attack in Parliament, it was pointed out that up to 30 per cent of the students were from England, scions of wealthy families receiving cheap board and lodging for a sojourn in New Zealand. Another M.P. expressed strong disapproval of the presence at Lincoln of the sons of wealthy merchants and professional men who did not intend to take up agriculture as a career and who had no serious intentions towards their work. This member’s solution lay in his proposed abolition of the college. Pre-entry qualifications steadily improved, correlated with the increasing availability of secondary education from the beginning of the 20th century. Year by year, however, there was that interesting admixture that was the woof and warp of the student community: sons of
artisans and gentry, others closely hiding their antecedents or personal background, even some scions of noble houses. One of the latter was the Earl of Seafield (1896-7) of whom Y. T. Shand (1896-7) said: "The peregrinations of Seafield used to cause much tea-cup rattling in Christchurch. One of the students was lined up to see that Seafield did not get away from his family. He was duly lined up with one we always referred to as 'the white rat'. Eventually they were married and went to Scotland to assume the title". Captain, the Earl of Seafield, killed in World War I, is listed among his contemporaries on the Memorial Hall plates of honour.

Residential life was spartan, routine being defined by the bell. This had been installed in the tower in 1880 at a cost of £25 and continued to be a feature of the daily state until about 1940. It was rope handled and rung by a succession of porters. There were bells to rise, to eat, to go to work, to cease work, and of all contrasts with the present, a bell at 9.30 p.m. in the 80s, for prayers. The college calendar required every student to attend prayers each evening and religious service once each Sunday, unless a written objection was received from parent or guardian. Ivey was a devout man and vicar's warden of St. Stephen's, Lincoln, as also were some later staff—Geo. Gray, F. W. Hilgendorf. In 1882 it was reported to the Canterbury board that so many students attended the Lincoln Church that it had to be enlarged at a cost of £200. Would the Board grant £70 toward this? (Declined.) A request was simultaneously made that the parents of students contribute towards the clergyman's stipend. This was renewed in 1884, and the board passed the request to parents; two replies only were received. Formal religion was not stipulated after Ivey's time but in succeeding years staff and student lay preachers used to conduct services for small nearby congregations. In 1890 it was agreed to contribute £20 (pro rata) to various denominations according to the numbers of students attending places of worship, and for 50 years modest annual grants were made to Lincoln and Springston churches. In 1883 the organist of the Christchurch Cathedral was asked to buy an organ for use at the school, cost (£38), borne by Ivey personally. How it was used and what became of it is unknown. The first organised student forum appears to have been a branch of the Student Christian Union in 1896, Bayne acting as chairman of the Religious Instruction Committee. He delivered an address to the union of 21 members on alternate Sundays.

There were 56 clauses in the regulations—innumerable prohibitions. No profane language, no entry to public houses within five miles, nor certain other houses "that may at any time be posted by the Director"; within the College, no intoxicating liquors,
firearms, gunpowder, playing cards, dogs. “Students must leave their boots at night in the proper pigeon-holes, otherwise they will not be cleaned”. “Students shall hold no conversation with the servants, nor enter any room used by them.” The first director was certainly a disciplinarian in the Victorian concept but he was troubled throughout with a need to retain student numbers, regardless of the qualities of many of them. When 35 student signatories presented a petition to the board protesting against a reference in one of his reports to “listless, dull, lazy and in fact useless youths whom it is most disheartening to teach,” the “Weekly Press” said: “admittedly this is true in a few cases . . . it would have been wiser if the director employed his authority in raising standards of the institution by having an entrance examination that would exclude students not capable of benefiting”.

Students had separate bedrooms (chamber pots provided) but study rooms were shared. There was a library—reading-room, but an early grievance was the lack of a smoking-room. (“The practice of smoking is discountenanced . . .”) What they wanted was a common-room but nothing of this sort was provided for more than 50 years. This was deplorable but as time went on students began to fraternise and develop a rich and free communal life within their study rooms and during the long period when the institution was fully residential, study-room life was relaxing in a delightful manner.

After six years of catering by Ivey himself, during which he had to be reimbursed for losses sustained in boarding students and housekeeping expenses, responsibility for these and other domestic arrangements (kitchen, matron, domestic staff) were assumed by the board. The director, however, still had to hire or fire. A “Bill of Fare” dated August, 1883, looked impressive but reports of students of the period were that the food was only fair, often really bad. The same sort of complaint tended to be echoed through every generation. Even when quality and quantity of food were clearly satisfactory, at least in the judgment of their superiors, students found grounds for complaint, which invariably were ignored. Although surreptitious drinking was prohibited it has been reported that for a few years beer was served at the midday meal. Charles Wood, the second student enrolled in 1880 and who lived to the age of 94, said “many never took it, others had too much and it was a good thing when the arrangement was terminated”.

In the second year a students’ council of three members was instituted, primarily to screen complaints before handing them to the director. Before long the elements of organised sport began to flourish, and by virtue of its establishment in 1881, the rugby
football team became one of the first half dozen in the Canterbury area. Football at the college has always had some distinction. Thus after a game in 1883 against the Merivale team it was reported "that in the evening the visitors assembled in the lecture theatre where the time until the moon rose was pleasantly whiled away with songs and recitations". In later years, instead of post-game recitations in the lecture room, farm folk and livestock heard bawdy songs roared out as the conveyance carried the college team to its fixtures. Ivey would not have approved. During the 80s, college players of special merit played in the city when their own team had no fixture. There was some kind of link with the Christchurch Club, for several players from Lincoln found regular places there. Travel arrangements were difficult. Frequent mention is made of teams arriving by "a four-in-hand-drag". Nor were they averse to walking. In 1882 the Lincoln College team won a tug-of-war event in an athletics contest in Christchurch. To appear in the final they missed the return train. Their success was based on their preparation for weeks beforehand, when they had practised every lunch hour with the bricklayers, then building extensions. The Lincoln students won the event, had some refreshment and then walked the 14 miles back to Lincoln during the night. Walking was often the only way to get there. A. J. Birdling (1881-3), for example, once walked from the college to Motukarara where he was to connect with the Akaroa coach for the remainder of his journey home. He missed the coach so just kept on walking for another 20 miles. It was this man, one of the most successful as a farmer of the first generation students, who gave an insight into the sort of community that troubled Ivey when he said: "But Ivey was a fine gentleman and a stern head... most of the students came from town and a lot were sent to Lincoln to be kept out of mischief. The country was just being settled and few students came from farms; they were far too busy there. We really worked too hard to have much sport. We had no end-of-year or social functions, none of this hooraying business at all. The certificates were just presented in the classroom. We seemed a healthy lot, no such thing as this darned influenza, that wasn't known then..." His regimen must have suited him. He made these comments just before death in his 100th year.

Ivey himself was an enthusiastic cricketer and when games could be arranged he captained a mixed student-staff side. He arranged for the preparation of the original cricket and sports ground which, as his first tree plantations developed, became one of the graceful features of the property and remained so until it disappeared under building expansion in 1953. Horse-riding was encouraged for a few years during which diligent students were allowed to keep riding
At the end of the 16 years before the separation from Canterbury College, the student organisation had developed a measure of independence. The Students' council was widened in membership, accepted a wider charter than disciplinary responsibility only, and began improving their own state of affairs. The first magazine, published in 1895, preceded by 15 years volume 1 of the "New Zealand Journal of Agriculture", and this student-sponsored publication printed agricultural information, mingled with personal and institutional trivia. For many years the magazine was used by college staff for publication of experimental results and records and an annual review of farm operations. For the first five years its publication was possible only through the liberality of the second director, J. Bayne, who aided the student sponsors by paying the publication costs himself. Despite occasional gaps, the magazine continued throughout the first century, recording college activity, rarely of literary merit, not patterned upon sophisticated university publications. The magazine has been the only continuing published document on the life and work of the institution. Initially supported by the governing body, it became then the responsibility of the Students' Association which in turn shed the task, leaving only the Old Students' Association to carry on conveying this annual report to the College community.

In reflecting on the demise of the School of Agriculture administered by Canterbury College, an impression grows that the found­ing fathers made good provision in the form of physical facilities. Despite a herculean effort by the first director, a good intelligent man, the institution on the evidence reviewed hitherto was somewhat less than a thriving one. The plans of the University Senate to devise new course structures were to be of no avail for many years, because of the poor intellectual standard of the young people entering the School and through an absence of jobs in professional agriculture. With hindsight it seems that had the school been better provided in the first decade with working finance, and better staffing, the institution would have become better defined as a centre of agricultural teaching, research and extension. Despite the early lack of quality in student courses there was an opportunity when the school was alone in the field, 11 years before the establish­ment of a department of agriculture, to serve by way of research and the extension of the results to the community. It really is amazing what came from the school, more incidentally than by design, such as the work on fertilizers and seed quality, demonstration of crop production techniques aided by better cultivation, the concept of a mixed crop-stock farm, lessons in afforestation based
on the extensive tree plantings that Ivey made. There was no money specifically for research or experimentation. What Ivey and Gray did in this connection had to be within their budgeting for general farm or lecture work. The prejudice of the practical farmer against scientific agriculture was aggravated by the impression that the Lincoln “model farm” was not an impressive paying proposition. Farmers and others had neither the vision nor the means then to use this, the first farm experimental area in this country. The results in teaching agriculture may not have been commensurate with expenditure—there were only 44 students in 1896—but discounting this, it would seem that the administration and the public opinion that influenced the governing body failed to turn the resources of the Agriculture School increasingly towards the investigation of farming problems through the aid of agricultural research. Ivey certainly had this viewpoint in his mind for he reported to the board chairman on a suggestion that the Government was being pressed into establishing other farm schools in Auckland and Otago. He said that the scientific teaching was the same for all branches of agriculture and he urged that Lincoln should be made the centre for scientific teaching and experimental work. He urged the establishment of forestry and dairy units at Lincoln to take advantage of existing facilities and the pooling of limited resources rather than displacing or duplicating them. “I think it much to be regretted”, said he, “that the School of Agriculture should not be made of vastly greater value by its being placed upon the broader scientific and research basis my suggestion would indicate . . .”

At least 50 years were to pass before the school now emerging as Canterbury Agricultural College was to have any semblance of these functions.
PART 2

Canterbury Agricultural College
CHAPTER 3

Recovery from debility

No internal changes marked the eclipse of the School of Agriculture. Henry Overton led the board for three years until 1899, whereupon Stevens commenced his 16 years of chairmanship. The basic lecturing staff continued at four. The director, J. Bayne, said to be a large, florid-faced man, particularly neat of attire, always formally dressed and very insistent upon church attendance, was a factotum, man-of-all-work, in administration and lecturing. There were still no agricultural teachers; individuals were inveigled into serving. They were transients experiencing a rude awakening at Lincoln, preparatory to careers of eminence that were to emerge.

Lectureships, for instance, were held by C. E. Adams, later Dominion Astronomer-Seismologist; C. C. Farr, to become professor of physics, Canterbury College; P. Marshall, subsequently professor of geology, Otago University, then headmaster, Wanganui Collegiate School; J. W. Mellor, to attain international recognition for his authorship in chemistry as a professor of the University of London. Those who were extrovert found their situation tolerable, notably Farr and Marshall, who each contributed to institutional life; the former as secretary of the cricket club and concert vocalist, the latter magazine editor and tennis player who attained provincial ranking. Staff who lacked instincts of self-preservation could not survive. One such, in those days of chamber-pots, was found one night in distress, vainly trying to free himself from a pot that boisterous students had jammed over his head. A barricade of 40 chamber-pots stacked in the passage-way impeded rescue operations.

In 1899 F. W. Hilgendorf* joined the staff at the basic remunera-

tion, then £180 per annum, with board. He quickly demonstrated a desire to identify with the interests of the community and apart from work, sought and won a place in the 1899 rugby team, being described as energetic, on and off the field. In 1901, he formed with J. M. Ranstead (Bledisloe Medal appendix), the front row of the 2-3-2 scrum. A few years later he was prime mover in the establishment (1906) of the Ellesmere rugby sub-union and was secretary-treasurer during the first six years of what became the most durable country rugby organisation in the province. A crisis in his relationship with the governors led to his move in 1903 for a year to Southland B.H.S. There was a contretemps also in 1909 when, as acting-director, he resolved a disciplinary matter in his own way without reference to the board, which in turn repudiated his action and advised parents accordingly. In fact his action had been correct and justified but he became unsettled and contemplated joining the South Canterbury Education Board as agriculture instructor. The board, then appreciative of his value, “hoped they might make an arrangement to enable them to retain his services” which they duly did by regrading him lecturer in biology and farm engineering. (Salary £350 a year.) Wild regarded the appointment of Hilgendorf as a development from which immense benefit was to accrue—a most successful lecturer to student and public audience, able especially to adapt methods and materials to the capacity and needs of both. In his own personal assessment Hilgendorf said: “I taught botany and entomology and knew nothing about them. When I started I didn’t know a single grass or weed, although I could distinguish wheat from oats. So I must have taught from books, I suppose—chiefly about insects or weeds that don’t occur in New Zealand. Then there was the veterinarian who came two days weekly and taught far over the students’ heads as most vets do. . . . The mistakes were all a phase in the evolution of agricultural teaching. The teachers were university men who had not been to an agricultural college. In time we, the adaptable ones, learned how to teach our subjects, and with still further time, students that we had taught became lecturers, so that the teaching then became efficient.”

A further land purchase was made in 1896 by which time Bayne was directing operations on a farm of a little above 700 acres. He was urged to make greater effort to attract public recognition of the

college, but being shy himself he called upon Gray, equally reticent, to stand up and speak. This Gray did, impressively on the topic of dissemination of agricultural information. Within the college, however, disorder and disarray became manifest through lack of leadership and control. Y. T. Shand* said: “One night two of us listened to Bayne talking aloud to himself . . . we thought he had been drinking but the incident convinced us he was mentally unhappy. He always seemed to be nervous and on the defensive. Some students were a very bad influence and Bayne was worried by declining numbers, drinking troubles, and class discipline. There was some sort of celebration once. Beer was banned but someone suggested: “What about a barrel of cider?” Bayne was doubtful but listened to a tale that it was unfermented. Others said: “Look at the amount of cider drunk in the harvest fields of England”. The barrel was duly installed (45 gallons) and by lunch-time there wasn’t a student working anywhere. He asked them to keep out of sight as visitors were expected. Anyhow, the cider drinking went on for two days and the college was at a standstill. . . . Something went wrong with the food. We went on strike and didn’t report for farm work and made our complaint. He came out . . . “We haven’t the strength to go on, sir.” Some of them were chewing grass in front of him. . . . His trouble was that he wouldn’t kick out the poor students, and there were many of them”.

Of the situation Hilgendorf also related “there were about 20-30 students who used to defy his (Bayne’s) authority in all possible ways. Two students ploughing in the same field would each receive a team at one end of the field, turn it and set it off again, then sit under the fence till the horse-team similarly started by his mate arrived from the other end of the field. Class work was on the same scale. Students absented themselves continuously . . . this was not entirely Bayne’s fault, because the teaching was putrid . . .”

The college board became aware of the condition of morale and appointed an executive committee of three as an administrative pivot, but they became preoccupied with trivialities. In response to a letter received from the other lecturers, the board resolved that a much more stringent system of discipline and control should be enforced and that “disorder in lectures should be absolutely put an end to”. There were further instances of students failing to report

for farm work and lectures and allegations by neighbouring farmers of deplorable management of the farm (despite the increased area and the employment of a manager, the profit dropped from £2,000 in 1896 to £790 four years later). The total roll fell from 44 to 22 in the same interval. All this forced Bayne to resign, the college being in a state tantamount to disaster and disintegration. Disappointment in the lack of substantial progress was being widely publicised. W. Pember Reeves, in assessing the state of education in Australia and New Zealand, wrote enthusiastically of progress at the New South Wales College, Hawkesbury, established (1896) 20 years after Lincoln, with over 100 students while Lincoln had 35, "the small muster roll which for many years has caused searching of spirit among New Zealanders". The resignation followed an inquiry the board conducted, with evidence and submissions from staff. The director’s vigorous defence, attributing his difficulties to interference and inaction by the board, was printed and appended to the minute book but in response to his request for a supporting testimonial in his application for another position he received a statement "that Mr. Bayne was as from January 1, 1897, passed over with the institution on the separation from Canterbury College and has continued as director until the present month when he resigned his appointment". Despite the torture they had inflicted, the students provided the only valedictory function and arranged for a framed photograph of him for the college.

The nadir of college fortune and progress coincided with the end of the 19th century. Epochal events, "The Record Reign of Victoria", "The Turn of the Century", "Relief of Mafeking"* had been honoured by celebrations portraying Victorian patriotism, a bonfire in the grounds, possibly another barrel of cider and the formal hoisting of the flag. Of the latter ceremony, it was said that there were no halliards and the question arose, who should climb the pole and take the flag up? It was suggested that the college porter, being an old sailor should make the attempt but he was out of training. Another was prevailed upon, but when he was halfway up, the pole then swaying alarmingly, his spirit of loyalty waned, and he made a hasty improvisation. This resulted in these stirring events being honoured with the flag at half-mast and upside down.

The "Weekly Press" said the Board was in a position to make a fresh start and that, properly managed, the college ought to be second to none in practical value among educational institutions. It

* Fourteen old students served in the N.Z. contingent of the South African war; and as members of the Nursing Service, two former matrons of the College—Misses Williamson and Weir. From South Africa, Hugh Denniston (Cert. 1898) went to Patagonia and developed the Estancia Sarita.
was said “the board will find it no easy matter to get the kind of man they want, but the next step is to endeavour to gain for the institution the confidence of parents and especially the farming community. . . .” In Parliament there were expressions of disappointment and a call for a new order. In response to the view of a member that it was unfortunate the college had not proved of greater benefit, the Premier (Rt. Hon. R. J. Seddon) said that “along with others he had for many years looked upon Lincoln College as a ‘white elephant’. Considering the wealthy manner in which it had been endowed and considering the fact that £50,000 had been spent on buildings and also taking the cost of management and weighing against these the results, the college had been most disappointing. He did not suppose the college had produced 100 practical farmers”. Seddon commended the appointment of a full-time veterinarian (W. J. Colebatch) and suggested that branch should be developed. “We should train our own veterinary surgeons and not be everlastingly importing such experts. Also, in respect to bacteriology the training of experts for the dairy industry should also be a feature of the institution. . . .” He related that when he visited (1903) the College he pointed these matters out to some of the directors. He was told that a very large sum of money would be required and meanwhile they could accommodate only 40 students. His answer that “if you could only make it a serviceable institution; if it meets the requirements of the colony and trains experts, Parliament would not hesitate to grant funds. . . .” The board, dominated by farmer representation then (Appendix 2), and indeed for the first 40 years, was unmoved by this political overture. No-one had the wit to see that the college might, with Government aid, fill the gap caused by the absence of a national centre for dairying, forestry, and veterinary work. The attitude was crystallizing that C.A.C. was a provincial institution adequately engaged in furtherance of a diploma course solely designed to train a limited number of young men for farming (contingent upon residential accommodation). Financial assistance from the Government was suspect, if its use entailed outside control. An initial request for a grant-in-aid was, however, made in 1912 when Hilgendorf was making progress with plant breeding but the Department of Agriculture declined to give the £500 asked for.

There was a turn of fortune in the appointment of the third director, William Lowrie, B.A., B.Sc. (Edinburgh), at the age of 43, who for some reason in 1901 relinquished the principalship of Roseworthy Agricultural College, South Australia, where his work was greatly appreciated to transfer to Lincoln. Born in Roxburghshire, Lowrie had an upbringing steeped in the husbandries of
Scottish farming. For some years he lectured at Gordon’s College, Aberdeen, until he went to Australia in 1887. At Lincoln he soon made it clear a new attitude to order was to prevail. Ten students declined a request to resume work, whereupon Lowrie dismissed them and communicated this decision to the parents. The board complimented him and endorsed the action. Thereafter a reasonable code of regulations was enforced, a healthy happy tone established, and Lowrie came to be remembered by his stern but just demeanour. It was he who decreed the ban on liquor in the College. Students of that time say there was never a sign nor smell of liquor; the social climate and attitudes vastly contrasted with those of the present day. There was vigour in Lowrie’s reports made annually to Parliament and his policy of excluding undesirables was emphasised. Thus:—“The board fully recognises that the endowments supporting the institution are not intended to assist in the education and maintenance of such students as are not qualified to avail themselves of opportunities, or such as make unsatisfactory progress, and accordingly all such are required to cease residence. This policy will affect average attendance for a 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 it is measured only by the calibre of the men who leave it qualified”. Again, in the following year (1903): “It is unfortunate that the impression is abroad that young men of idle habits, who have proved failures at schools, might with impunity enter residence here . . . I can say with full assurance that the action that has been taken during the year in asking students who were not spending their time profitably, to cease residence, has been beneficial to the college.” In Lowrie’s years the annual student intake ranged from 23 to 33. It seems that a very specific generation of eminently successful farmers and good men stemmed from Lowrie’s guidance and direction. These included W. L. and J. M. Ranstead, Waikato; E. H. Beamish, Hawke’s Bay; G. W. R. Osborne, Ellesmere; J. R. L. Hammond, Marton; A. B. Moore, North Auckland. Several others became widely known as men who were a credit to the college, including A. T. and D. W. Ariel, Auckland; E. J. Jekyll, L. B. Scott, D. Chapman; C. (later Sir Charles) Clifford, Canterbury; E. Gillingham and W. Anderson, South Canterbury. They were referred to in later years as “Lowrie men”, not all farmers but retaining a link of appreciation with Lincoln. Among these were C. (later Sir Cyril) Ward, to become prominent in commerce, and J. I. Chrystall who relinquished farming for a professional military career, attaining the rank of major-general, British Army, Commandant Cairo, World War II. Records of admission to the college hospital wing
include C. Ward, in 1903, who broke a leg through an escapade when he fell from the roof of Ivey Hall. For some time thereafter, district residents were curious about a special train which was held at the road-crossing nearest the college. From it alighted the Rt. Hon. J. G. Ward, and retinue, making a visit to view the condition of his son and heir. Ward gave no time to inspection of other features of the property.

In assessing weakness and deficiency that confronted him, Lowrie realised that the quality of farm and class instruction had to be considerably improved. An appalling teaching arrangement with one man responsible for mathematics, engineering, and botany was abandoned and the first full-time residential veterinary surgeon, W. Colebatch, was appointed. He also accepted additional duties in superintending discipline, and was successful. Though he remained only three years, his impact was substantial and the esteem of local farmers was expressed at a valedictory function at which R. H. (later Sir Heaton) Rhodes presented Colebatch with an illuminated address and "a purse of sovereigns". Not since the days of Ivey had such appreciation been expressed to a member of the staff.

Excellence in course work—farm competence and class attainment—resulted in the establishment (1905) of the Gold Medal award, and for the first time students were given opportunities to assess things "off campus" when weekly visits to Addington stock markets were inaugurated. With the purchase of the light-land "Siberia" property, Burnham, there was a wider span in the basis of instruction and demonstration. Lowrie was able to attract a competent manager, Wm. Street, and a shepherd, J. Linton Snr., who were to serve many years. Thus the tradition began of taking particular care in the appointment of practical work instructors (they were also general college maintenance staff) in carpentry, machinery, wool, saddlery; also the first woman member of the farm staff, Mrs. Tabor. They were of the type who had a beneficent influence in the development of impressionable young men. There were many of them but among those best remembered were Street and Linton, together with T. Duncan, R. A. Fougere, C. P. Tebb as managers; James Frazer, C. Brown S. C. Harris as farmhands. Illustrative of these people was James MacIntosh (1907-39). Like Linton he came direct from Scotland, appointed as farm (maintenance) mechanic, but as with others called upon to do countless tasks—including repairing the director's bed, after an alarming collapse. Students were attached to these men on roster, and could not help but learn by precept and example. MacIntosh was a disciplinarian. Conscientious and tireless himself, he required the same of others. At the striking anvil as he made horse-shoes it was ever
"harder, harder, faster, faster...". There were exhortations also at manual concrete mixing for which an expanding programme was undertaken. His interests were diverse—lodgeman, church elder, choirmaster, horticulturist. He also grew at Lincoln his own tobacco leaf and compounded his own pipe-mix, which had a most pungent odour, detectable in the working locality as he strode up the farm drive, always punctually at 7.44 a.m. and 12.59 p.m. These were the kind of men Lowrie was seeking and he certainly began a tradition in this kind of appointment.

This man succeeded in bringing the college, really for the first time in 25 years, to a point of public recognition and esteem. "Time was when it would have been gross flattery to term the Canterbury Agricultural College a successful institution; now no educational centre in the colony better deserves the description. The fact that the college is crowded with students of excellent type, lads who go there to learn and not waste time, bears ample witness to the truth of the assertion," said the "Weekly Press" of January 3, 1906. Reference was made to the increased measure of support, the profitability of farm operations, and the pleasure the board could derive from the note of change in public opinion. "The change is shown by the way in which North Island men send their sons to learn farming at Lincoln and the action of the Manawatu A. & P. Association in making a donation". Lowrie was given credit for the results now accruing and it was concluded that "it is an institution of which the colony may be proud". The manner in which the staff were now being invited to go out into the community—the extension service role—is referred to elsewhere. In this period there was sufficient confidence to invite the public to attend an annual "gathering", the precursor of field days.

Public approbation was demonstrated also in the support given Lowrie by highly-regarded leading farmers. One of these, Job Osborne,* provided the college, before his death, with substantial funds in perpetuity that established the first private scholarship. Approximately 50 scholarships available for the support of students are now listed.

As unexpectedly as he came, so William Lowrie was to depart. At the end of 1908 he became Director-General of Agriculture, Western Australia, this appointment in itself signifying the renown of his accomplishments; but he also made the transfer for family reasons.

A few years later he moved to the comparable post at Adelaide, South Australia, where he died in 1933, aged 75 years. In 1950 the Old Students’ Association honoured his name and seven years at Lincoln by the erection of a commemorative plate in the Memorial Hall. His departure from Lincoln was regretted throughout the community and after reviewing the progress made under this leadership the “Weekly Press” said that “a new spirit filled the college, its value became recognised from one end of the Dominion to the other and instead of a scanty attendance of students the difficulty was to accommodate all who wished to come. . . . Lincoln College has become a centre of agricultural education. . . .” His farewell function was the college’s greatest public gathering to that date. An illuminated address was presented on behalf of the Farmers’ Union and the A. & P. Associations, and the board chairman, E. C. J. Stevens, on behalf of the college praised the transformation of the preceding seven years.

Lowrie is to be remembered for his enthusiasm, indefatigable work, excellent teaching, stern discipline, scrupulous fairness. Hilgendorf said that his service was to make the college a credit to the country and to bring it into contact with the life of the farming community. He also recollected an incident portraying an intriguing aspect of life of the times. “One day Lowrie and I were threshing, he supervising students on the mill, I on the steam-engine. We had arranged to go with our wives to a cricket match in Christchurch in the afternoon, catching a train at Lincoln. Of course we were late in for lunch so our wives cycled to the train to keep it waiting while we dressed and drove to the station in the (horse-drawn) buggy, which they had left harnessed at the door. We caught the train. At Prebbleton some on the platform said, “Your train’s late.” “Oh yes,” said Lowrie, “Mrs. Hilgendorf and Mrs. Lowrie hadn’t finished dressing, so they telephoned to have the train held back for them. . . .”

Another mind-picture is derived from what E. H. Beamish* said. “For him nothing was good enough. He wanted only the best and he never expected a student to do what he himself could not or would not do, but to him the job in hand was paramount. . . . June 1907, the whole countryside covered in snow, an important football match and still quite an area of mangolds to pull and cart. Every student was detailed to the job and most thought it was a bit tough. We had barely started work when we realised the ‘boss’ was pulling

too. As he passed all of us along the rows he remarked ‘it’s very cold this morning’. Anyhow the job was done and the ‘boss’ was heard to say: “I am indeed glad we’ve finished. I am most anxious to see the football this afternoon but the mangolds had to be pulled.”

Though he was well fitted for the position, it is doubtful if Hilgendorf aspired to become director. In the interregnum after Lowrie, when acting director, he had suffered an unwarranted humiliation, which students regretted, and Wild who was intimate with Hilgendorf, regarded the incident as significant in two respects. First, it induced him to believe his role was as a second-in-command, staff or liaison officer. Second, had his first experience of temporary leadership been successful, Wild’s thesis was that Hilgendorf with his acumen, scientific ability and qualities designed to attract popularity, would have achieved the position of leadership, with consequences that the development of agricultural education would have evolved very differently from what in fact was to occur in the ensuing two decades. Be that as it may, Lowrie’s successor was Robert Edward Alexander,* aged 35, appointed to the position in fact by a board member, W. F. M. Buckley, who was given carte blanche while in Britain to obtain a suitable man. Buckley was an intimate family friend thenceforward.

The Alexander era which was to span 26 years began on a high note of confidence, with a student complement using all accommodation and the property left by Lowrie in an efficient and productive state. A narrow charter was, however, becoming defined and H. A. Knight,** who walked closely beside Alexander—they were arm in friendship and mutual esteem—said “there were still many people who criticized the college and some had said the fees should be substantially lowered; but to lower the fees was to lower the status and the board had no intention of doing that for there was a marked difference between a school of agriculture and an agricultural college. It had also been said that the college instead of having 50 students should have 200 but the maxim ‘beware of overstocking’ applied there as elsewhere”.


** The dedication of H. A. Knight to service at Lincoln was exemplified in numerous ways. It is known that for some years after he joined the board (1902), to attend meetings he caught a morning goods train at Racecourse Hill, with a bicycle in the van. He cycled from Rolleston to Lincoln (six miles) to attend the meeting, then back to catch the evening return train.
1977 The Lincoln College Campus and community (original Ivey Hall, centre).
Farm group, 1897

Farm and maintenance staff through World War II
*Seated left* A. K. McLay, overseer,
*Seated second left* C. P. Tebb, Manager-Superintendent.

(M. M. Burns)
The School of Agriculture 1880.

Canterbury Agricultural College, 1930.
The Farm centre (1910) site, south of present day Union.

Stack building (1928 harvest)
Farmers field day inspection (1907).

(The Weekly Press)

The engine and threshing mill (1938).

(M. M. Burns)
DIRECTORS OF THE SCHOOL OF AGRICULTURE AND OF THE CANTERBURY AGRICULTURAL COLLEGE

Above right  J. Bayne, M.A., B.Sc., 1894-1901.
Below left  W. Lowrie, B.A., B.Sc., 1901-08.
EARLY LEADERS

Above left  H. A. Knight, first student enrolled in 1880. Board member thirty years, Chairman 1915-26.


Below left  Hon. E. C. J. Stevens, M.L.C., Board member twenty years, Chairman 1899-1915.

Below right  F. W. Hilgendorf, M.A., D.Sc., F.N.Z. Inst., 1899-1936, Lecturer, Professor, Board member, Acting-Director.
Students’ council, 1898.

Housekeeper and servants, 1895.
college did not do enough experimental or research work he asserted that its primary business was to teach farming. Alexander echoed this a year later (1913), adding that the limits of enrolment had been reached; that though they laid no claim to being a model farm, the property was run on a commercial basis, the best proof of which was that it was a paying concern. Despite disruption which was pending through the 1914-18 World War these were times of challenge and opportunity in agricultural research, extension and education. Except for a farm school programme which had now been initiated at Ruakura by the Department of Agriculture, Lincoln still was the sole institution engaged. Retrospectively now, it would be said Lincoln was still sitting on the field of opportunity, inactive. Hilgendorf had commenced his research and though the college gained public approbation as a consequence, his effort was largely through his own ego and dynamism. He testified, however, that Alexander supported and encouraged his plant breeding work to the limit of available cash resources. An approach from the Minister of Agriculture revealed that an opportunity existed then (1913) to make the college a centre for agricultural research. On the opportunity lost in education and extension, Wild discussed the Lincoln failings in a Macmillan Brown lecture on the development of agricultural education, a revelation being the proposition championed by Sir Robert Stout, Chancellor of the University of New Zealand, that Lincoln be the location of the biological section of the Department of Agriculture. The failure to sponsor a degree course in agriculture had created a void which was being felt by State departments who now wanted instructors and research workers. Through the influence of George Hogben, inspector-general of schools, (1899-1915), and on the recommendation of the Cohen Commission (1912) efforts were being made to foster the subject "agriculture" in schools. District High Schools had been established and Education Boards had been encouraged to appoint itinerant agricultural instructors. Few qualified men were available for this work. The first of them, like F. R. Callaghani and W. C. Davies (later curator, Cawthron Institute, Nelson) developed their techniques as they grew or evolved in the job. At successive conferences of the Council of Agriculture, which had evolved from the annual conference of the A. & P. associations, and of the Board of Agriculture, which had been set up by the Government in 1914, pleas were regularly made for Lincoln to produce men to supply these instructional needs. It was this atmosphere of argument and debate that Alexander encountered early in his reign but he had clearly in his own mind that he was director of a college now working on a defined charter; independent of Government control,
which prospect alarmed him; enjoying some independence through the land endowment and a profitable farm; aiming to produce good young farmers, all in an administration which if it lacked state assistance, on the other hand had no interference or surveillance. This attitude was strengthened by a vice-regal visitor (Lord Islington) who addressed the assembly of the college. He said he was convinced the college was one of the mainstays of the Dominion’s progress and that the system of agricultural education at Lincoln was better than at any college he had seen in any country. Alexander was very pleased with His Excellency’s sentiments and claimed subsequently “that according to the highest authorities we are studying along the right lines”. His board was also satisfied and at the end of his first five-year contract, increased the director’s salary, which through a long period of no inflationary pressure had remained at £500, to £720 per annum (with free board and one servant). The director continued to be the focal centre, fountain spring of all action. Duties were multifarious but administration was of simple pattern. There seemed no interest in typewriters, for example, until 1928, on the evidence at any rate that the minutes of board meetings were handwritten to that year in Alexander’s own clear, unaffected calligraphy.

The horse and gig were superseded in 1912 by the first motorcar on the premises, a 30 h.p. Cadillac which, despite its prestige name, was temperamental. It was a multi-purpose vehicle in domestic, farm and official usage, until replaced in 1924 by a huge touring Austin which was generously lent by R. E. A. to other staff who had no car.

Alexander made it clear to the board that employment inducements to Hilgendorf should be countered. Lowrie, former director, had in 1911 offered Hilgendorf leadership of a wheat-breeding centre in South Australia, house included. Salary-raising through expediency, or to retain key men, was practised until about 1950 when the staff, appropriately graded, came under the university teachers’ salary scales, negotiated by the Association of University Teachers.

General Godley, C.O.C. N.Z. Forces, visited the college in 1911 and spoke of the accepted threat of war involving Britain and the Dominions. He suggested the formation of a half-company O.T.C., commanded by a subaltern. Thus in the vacation period of 1912 all students then subject to the Defence Act, 1909, which created a territorial force and imposed universal military training, went into camp at Rangiora, allied with other conscripts under the extraordinary title Right Half Company of F Company, North Canterbury & Westland Regiment. Thereafter regular days were
set aside for company drill at the college and this organisation continued for ten years. Annual camps of two weeks continued at Yaldhurst, Lakeside and Burnham, and the college gravel pit was used as a 25-yard target range. The purpose of the unit was to produce N.C.O.s who, if seeking commissions when war came, would have had adequate preliminary training. By 1917 the officer-in-charge was L. J. Wild, who also served posterity by preparing a résumé of the college’s military history, the details of which aided the subsequent erection of the rolls of honour in the Memorial Hall, by the Old Students’ Association. In the first year of the outbreak of World War I more than 100 of the 150 students who had passed through the college in the preceding five years had volunteered for overseas service with the N.Z.E.F. Twenty-five students enlisted directly the war began and a group who had been students at the beginning of 1914 left for overseas before the end of that year, viz. Lieut. A. D. Stitt,* Q.M.S. A. W. Duncan, Sgt. L. I. Manning, Cpl. S. Musgrove, Pte. T. Edridge, R. H. Kember, R. T. Barlow, G. J. Wilde. They were followed soon after by A. Taylor, veterinarian, who served overseas for the duration and during whose absence temporary teaching arrangements were made.

During the war, enrolments fell and there were few older men. In the years 1916-18, end-of-course diplomas were awarded only to three, four and five students respectively. Prizes were dispensed with and the money saved was given to Red Cross funds while the board endeavoured to transfer all possible money to national war loans. The appropriate closing act in the war record was the erection of the Memorial Hall through an appeal among old students, college friends and supplemented by the board. H. A. Knight was the major individual donor and he was honoured by being asked to open the building (1924) and unveil the greenstone slabs bearing the names of 222 students and old students who served. Fifty-five of them did not return. From its opening until the 1950s, the hall was the centre of public gatherings, social functions and chapel services. For a time it was the staff common-room. Though no longer able to accommodate a college function as a whole, it remains the only consecrated building on the campus, one of the few not erected with State funds. The repository of student and staff memorial plates, commemorative paintings and honours of two World Wars, this small building in the attractive style of a great architect, Cecil Wood, attracts old student visitors, most of whom upon entry pause, smile at the memory of past social events or bow in medita-

tion or prayer, as their minds dwell on the names of friends enshrined there.

In the early 1920s, exigencies of war being forgotten, with student accommodation fully used (50-55 students) C.A.C. returned to its state of euphoria or restricted "dynamic conservatism", but there were new vociferous elements no longer prepared to tolerate the limitations of the country's sole college of agriculture that had at the end of 40 years become placidly entrenched. Before we proceed to observe the eruption that was to occur, the reader at this juncture should be led through an assessment of how the course work and academic structures had been developing.
CHAPTER 4

Initial Developments in University Agriculture

Lowrie initiated improvements in the three-year diploma of agriculture course, notably employment of a resident veterinarian who could not only teach students but also take them with him on professional visits. Chemistry was reduced but meteorology and physics remained in physical science presented by Gray. Natural science (Hilgendorf) received more time but for some years this lecturer also had to teach engineering, though the mathematical content was reduced. Engineering appeared then to have comprised practical instruction of the structure, firing and working of the steam engine,* and measurement of field areas by chain and cross staff. The director, as at the beginning, presented "agriculture", comprehensive, diverse, entirely of his own concept and experience. Students who produced evidence of sound preliminary practical experience were permitted to enter the course at the start of the second-year curriculum. Farm labour was also changed to give students every possible kind of farm operation, under supervision. The result was that students became interested in their farm work, but on present standards and requirements the academic content of the course was slight. The essence of the course was a first-rate pattern of practical experience on a large diversified farm, linked with instruction on hand and mechanical skills and a perfunctory effort to identify what had occurred on the farm with lectures on applied science.

The degree course B.Sc. in Agric. stood unheeded in the university calendar and was amended to B.Ag. in 1905. There was a murmur of interest in a proposal of the Government in 1903 to utilize the college for practical instruction towards the veterinary

* Hilgendorf wrote: "An example of the practical nature of the teaching was that I, as teacher of engineering, drove the traction-engine during threshing. Students assisting me were given credit for practical work on the engine and each year we used to present the two best students with certificates that enabled them to get traction-engine drivers' tickets. Later the farm overseer took his ticket and I was no longer required for steam-engine instruction . . ."
degree that also stood neglected in the university statutes, but nothing developed. Sir Robert Stout, as Chancellor, said at the 1906 University Senate that he regretted there were no students aiming at any degree of science connected with agriculture.

"The keen competition which our agriculturalists will in the future have to meet should make us realise the necessity of having trained, skilled and scientific farmers," said the Chancellor. "The utilization of lands in the far North has hardly begun... it might be wise for the Government to consider whether there ought not to be an agricultural college affiliated to Auckland U.C.

A few years later when F. R. Callaghan,* then an agricultural instructor, Auckland, was on a committee that attempted to persuade the Government to establish another college of agriculture at Ruakura, "They thought," said Callaghan, "that the Prime Minister (Rt. Hon. W. F. Massey) being an Aucklander would support the plan" but were chagrined to receive a summary dismissal of the project, Massey indicating that the country had a perfectly good college at Lincoln and one that was well conducted. Unbeknown to the Auckland petitioners there was a bond of kinship between Massey and Alexander—both Londonderry men and the Prime Minister indeed, a cousin of Mrs. Alexander.

Although there was no promotion of the degree at Lincoln, several students had inquired about transferring from the diploma to the B.Ag, but found that they were debarred by the requirement of two years' university terms before entering upon the agricultural subjects. The 1910 alteration to the degree statute more clearly defined the B.Ag.** degree and enabled students to opt for a back-to-front, cart-before-the-horse, degree in which they were permitted to take the prescribed applied or agricultural subjects first (at Lincoln, or anywhere else offering) and later go to a university college to study science subjects (biology, physics, chemistry—inorganic and organic, mechanical drawing). Most of the work of the first degree students at Lincoln was taken concurrently with diploma classes, including farm work. Degree students pursued the normal diploma course and some additional subjects. Thus for

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** This degree was consistently and incorrectly designated B.Agr. in college staff lists and by some of the recipients. The abbreviation was B.Ag. in the U.N.Z. Calendars.
some years they qualified with the diploma of agriculture and competed for the college gold medal. Several men, who were to attain success in their careers graduated B.Ag. and were also diploma course gold medallists: P. W. Smallfield, C. J. Hamblyn, G. A. Holmes, D. J. Sidey, A. H. Flay, H. J. Geddes. The first to graduate B.Ag. in N.Z. were W. S. Hill* and G. H. Holford** who were in the 1909 diploma intake, but with the statute amendment that allowed university terms to be taken at any time, they both elected to follow the new course, and graduated in 1913 and 1914 respectively.

Canterbury Agricultural College continued to be harassed by a form of attack by commissions, committees, individuals collectively asserting that the college of agriculture was not adequately providing for the country’s demonstrable need for many more trained people than were being annually attracted to the Lincoln programme.

In introducing the Board of Agriculture Act, 1913, to the House of Representatives, W. F. Massey expressed regret that there was no agricultural college under the control of the government—as was the system in Australia and Canada where agricultural education was under the supervision of the state departments of agriculture. It was claimed that many New Zealanders were ignoring the prospects at Lincoln and were going instead to the Hawkesbury College, New South Wales, for training. The Board of Agriculture was, therefore, requested to consider the matter of agricultural education and the justification for establishment of further agricultural colleges. George Hogben, inspector general in the Department of Education, continued to support this general proposition in the General Council of Education (1915) while Sir James Wilson was much more specific (1917) in his advocacy of a North Island, Government-supported college. He called for the use of some of the science staff of Victoria University College in association with the Department of Agriculture, together with utilisation of the department’s farms at Wallaceville and Wereroa (Levin). A movement to establish a professorial chair in agriculture was also gaining momentum though Massey was unimpressed with the suggestion that a professorial establishment should be supported by the Gov-


ernment. From what he had learned of the degree course in agriculture at Sydney and Melbourne Universities, the Prime Minister did not believe that endowed state-supported professorships were going to solve the current problems of agricultural education. Auckland University had been holding a £20,000 bequest of Sir John Logan Campbell; Victoria University was about to receive £10,000 from Sir Walter Buchanan for purposes of a chair in that university while in 1922 to add further confusion, Josiah Howard offered a very large sum for an agricultural college in Hawke’s Bay.

Between 1920-22 the issues of higher agricultural education were intensely debated by the Board of Agriculture, to the conclusion that the time was propitious for establishment of another college, there being no doubt in the minds of the North Island advocates that Canterbury Agricultural College was just not in the picture or plan. The people at Lincoln, were, however, doing what they could, but they did not want Government funds for fear of coming under departmental control. They had an excellent farm at Lincoln; the buildings were still adequate for the small enrolment. They had a detached view of the machinations of the two North Island universities, each with an endowment for a professorial chair but not enough money to support the proposed chairs within an established school or faculty.

In 1916 the Department of Education, having developed an agricultural mindedness, asked the Lincoln board if more agricultural instructors could be trained and outlined a proposal to grant bursaries to returned soldiers and others who would pursue diploma or degree courses meeting the needs of the department. Agriculture had then become a subject for matriculation and entrance scholarship and further accommodating revisions had been made to the B.Ag. syllabus. There was also a proposal for the university subject, agriculture, to be an option within B.A. and B.Sc. statutes, rejected however by the Board of Studies.

Alexander and his fellow conservatives (H. A Knight had become chairman after Stevens’s death in 1915) were convinced they were doing all possible within their resources. The first Education Department bursars had arrived in 1918, seven of them to take the combined diploma and B.Ag. degree course, and they graduated into professional employment as the country’s first teachers of agriculture in secondary schools or as education board instructors. They were F. B. Belcher (Auckland), G. Holgerson (Wanganui), N. Tankersley (Nelson), W. C. Purdie (Marlborough), I. McHarg (Masterton), K. McKinnon and S. D. Barr (Feilding), J. Pennycook (Timaru) and a year or two later, B. B. Blackmore and S. A.
LaRoche (Canterbury). J. W. Calder* was in the original group but he was siphoned off, or hand-selected, to serve the needs of the college. He became Hilgendorf’s assistant in 1923, adopting also his mien. Shortly after, another interesting group were similarly engaged, whose careers were to flourish, because of, or despite, the unpretentious pioneer B.Ag. course. These were P. W. Smallfield (Director-General of Agriculture)**, K. G. McIndoe (Firestone Company, Liberia), N. P. Neal (professor of agronomy, Univ. of Wisconsin, U.S.A.), E. R. Hudson, A. W. Hudson (professor soils, Massey College), R. H. Bevin, G. A. Holmes, L. W. McCaskill, R. A. Calder (Director, Agronomy Div., D.S.I.R.).

It was not enough, the Senate was testy and irritable again. It debated a motion “that if the scientific equipment is inadequate for the training of graduates in agriculture, the Senate will withdraw recognition of Canterbury Agricultural College . . .”, but this lapsed in favour of a resolution that a commission should be appointed to report on the provision made for the scientific instruction in agriculture at Lincoln. The consequence was the 1923 report by Professor A. E. V. Richardson, of the University of Melbourne, revealing a deplorable state at Lincoln as to the requirements for presenting agriculture at the university level. While observing that the farm was probably better than any college property in any part of the world, Richardson contended that an agricultural college of university rank should do more than turn out annually a handful of practical farmers, and he deplored excessive farm work required of students. He found the human equipment at Lincoln lamentably short of the requirements of a modern agricultural college with the teaching (apart from practical instruction) confined to Alexander (agriculture), Hilgendorf (botany, zoology, farm engineering), M. J. Scott (chemistry), A. Taylor (anatomy, physiology, veterinary science). Richardson called for integration of the degree course with Canterbury College, the latter to provide tuition in plant pathology, geology, rural economics and agricultural engineering. It was on Richardson’s recommendation that the B.Ag. statute was repealed and the B.Agr. Sc. enacted. This was a four-year course, four basic science subjects to be taken first at a university college


** Twenty years after Smallfield had completed his service career, another Lincoln graduate, M. I. Cameron (B.Agr.Sc., 1950) was appointed Director-General, Ministry of Agriculture and Fisheries.
before taking the professional papers prescribed for Lincoln (or the new college about to emerge). Richardson was emphatic that Lincoln was basically founded to do all that was required and with financial aid, should proceed without competitive influences. "It is probable," stated the 1923 report, "that in the course of the next decade there will be a clamour for schools of agriculture in the Dominion. . . . the present population and resources do not justify establishment of additional schools of agriculture of university grade. . . . one strong well equipped and organised college will accomplish a great deal more for agricultural education. . . ."

John Macmillan Brown, Chancellor of the University, an academic with an unusual interest and advocacy in the cause of agricultural education and research, reviewed the Richardson report and its implications at considerable length in his address to the 1924 Senate. Concurrently he tabled a paper from Alexander containing some expression of appreciation of certain features of the report but affirming that Lincoln was not departing from the first duty—to train farmers. In this regard his attitude seems to have been at variance with that advanced by some of his Canterbury friends. Possibly unknown to him a deputation from the North Canterbury Farmers' Union (J. D. Hall and D. Jones) had waited on the C.U.C. board seeking provision for better arrangements in agricultural education at university level. The deputation was reminded that policies involving Lincoln were beyond the terms of reference of C.U.C., but it was resolved to give support to submissions to the Ministers of Education and Agriculture that it was necessary to take urgent measures to dispel the now recognised general dissatisfaction with the state of agricultural education. The Chancellor, a professor of English literature and therefore an unusual advocate, made the first plea for action and encouragement towards careers in professional agriculture. He urged the Government to provide career posts for agricultural teachers and instructors and for the university to aid this cause by implementing Richardson's recommendations, providing a senior scholarship in agriculture and establishing an advanced (master's) degree. Towards the end of a stirring address, Macmillan Brown said "the talent of this country has hitherto sniffed or turned up its nose at the agricultural career; and yet it is the one career that already is or will soon to be in need of the finest talent and greatest originality that New Zealand can produce. . . . if we are to meet the difficulties in front of us we shall have to induce a considerable proportion of our young talent to enter in the study of agriculture and take it as its career. We must prevent this basis of all our prosperity being side-tracked. . . ."
We accord honour to Macmillan Brown, over and above the name of the scholarship* derived from his own bequest. There were additional factors but it was coincidental with his advocacy that agriculture as a profession began to advance. He expounded on the same theme at the 1926 Senate by which date a major new development had taken place with a prospect then of not one, but three faculties of agriculture. The new elements were the endowed professorial chairs of agriculture at Victoria and Auckland University Colleges.

The massive exposure of inadequacy was augmented by two further assessments. In the reports of the Royal Commission on University Education, 1925, Sir H. Reichel (Wales) and F. Tate (Victoria), compared New Zealand unfavourably with Denmark; reiterated the deficiencies of Lincoln in similar terms to those of Richardson (“New Zealand has no efficient university course in agriculture”); strongly opposed the continuance of three schools of anaemic mediocrity; and recommended that an agricultural college in association with the university should be established somewhere in the North Island by a combination of the Wellington and Auckland endowed chairs. “The course at Lincoln,” Reichel and Tate said, “should be recast or improved, or discontinued and work there confined to diploma courses for farmers. . . .” The second explosive discharge was in the report of Sir Frank Heath (1926) on scientific and industrial research that led to the establishment of the D.S.I.R. In the section on primary industries, Heath said the most serious difficulty in plans for agriculture was the shortage of well-trained research workers. His impression from a visit to Lincoln (and Ruakura) was that science received less than due attention. At Lincoln the laboratories were inadequate and with the exception of valuable work on wheat breeding and grass selection (Hilgendorf) “the standard of efficiency . . . seems below that necessary . . . but the principal gap is in the university plans. Without a college of the highest rank devoted to investigation and teaching, no systematic approach to the scientific problem of the primary industries will be possible”. Macmillan Brown still had an open mind about three institutions, thinking each would serve specific objectives. As before, he enthused on the vast possibilities for research. He was pleased to learn that representatives of Auckland and Victoria University Colleges had met and had agreed to work for one agricultural teaching institution of university standard in the North Island, but he hoped the Government would help this one institution.

financially and equip it as liberally as if there had been two. Sir James Wilson, national farmer leader, would have been pleased with the trend of thinking for he had deplored "the present position that makes our task especially difficult . . . Canterbury, a special school of agriculture, without a professor; Victoria with a professor (G. S. Peren), 10 students but no school; Auckland with a professor (W. Riddet) but neither students nor school."

Political battle was now to be joined in the corridors of Parliament, but elements in Canterbury were stirred at the possible demise of C.A.C. Lincoln students were among the first protesters. Alexander himself was overseas throughout 1926, on a return visit to his Ulster homeland and elsewhere on refresher leave, and records do not reveal that he was kept in touch with the campaign. On the other hand Lincoln now had the advantage of an academic on the board, Professor C. Chilton (Governor-General appointee), a cultured, shrewd farmer in John Studholme, and an M.P., David Buddo. These, aided by Hilgendorf as acting-director, reported to the board on several occasions as "having waited on the Prime Minister". In the early part of the 1926 session of the House of Representatives Buddo in a long speech entirely on the subject of C.A.C. gave the legislators evidence that a splendid accomplishment had been attained within the limits of financial resources. Knowing of the Auckland and Victoria marriage of the endowed professorial chairs, he urged that the best possible use be made of the college the country already had. He said: "The contention that there should be an institution other than the present one is a mystery that seems to belong to an inner circle of people who aim more at self-glorification than at the economical expenditure of public money for an institution (Lincoln) that is capable of providing what is absolutely necessary for agricultural education . . . ." He pointed out that with an educational grant of £30,000, Lincoln which had been running on its own balance of income from endowment, farm produce sales and student fees, could adequately provide all that was required.

Arrangements were made for giving special powers to the chairman (H. A. Knight) "if the emergency called for it," and Hilgendorf as acting-director was to be within reach in "his intention to travel during the August holidays in search of grasses for plant-breeding work". Studholme endeavoured to secure conciliatory resolutions, designed to ensure that if there were to be two colleges, co-ordination between them should be defined early, providing a solution to the problem "that would satisfy both provincial feeling and the requirements of agricultural education". The Prime Minister (Rt. Hon. J. G. Coates) assured his Canterbury
party members that the Government had no intention of interfering with C.A.C., which supposedly really meant that they were not proposing to do anything for it either, leaving it to its own destiny and devices. Of the new college project, it was said that an industry where exports then exceeded £20m. could support an enterprise not expected to exceed £¼m. for establishment. In other discussions the C.A.C. board was urged to ensure at least half-a-loaf rather than no bread at all but assurances were received that South Island M.P.s were constituted as a committee in Wellington, where work and influence were to ensure that C.A.C. lost nothing in the establishment of the new college. One is reminded that this was a time when the distribution of parliamentary seats was not disparate as between North and South Island. Studholme was not convinced and as a safety device he suggested the only course was to have Canterbury Agricultural College reincorporated within Canterbury College. This proposal was rejected. In August, 1926, the board chairman and the South Island M.P.s in Wellington were asked if the board would be willing to hand over the college to the Government, on condition that it should be the only agricultural college in the country. They agreed and the full board later approved this epoch-making offer, which, however, was not sufficient to impede the momentum. Studholme persisted with his objectivity and persuaded his board that in making this offer they should also tell the Government that in their view there should be only one New Zealand college of agriculture consisting of a branch at Palmerston North, the other at Lincoln, the former to be restricted to dairying and matters related to it; that teaching of all other branches of farming to a degree standard be given at Lincoln, it being understood that when the number of degree students warranted it, teaching to degree standard of other subjects than dairying be provided for at Palmerston North as well as Lincoln; that to facilitate co-operation and co-ordination between the two branches each should have representation on the board of the other.

At this juncture an interesting domestic interlude occurred. Alexander was still overseas and the secretary-accountant, F. C. Roberts, was returning officer for a board election. Hilgendorf should normally have been returning officer, but one of the candidates, G. Murray, was related to him, so Hilgendorf disqualified himself. H. A. Knight, the chairman, tied with Murray in the election and after two weeks' deliberation the returning officer cast his vote against Knight, the long-sitting member and chairman for the preceding 12 years. Knight was later re-elected for another term. Meanwhile on the eve of the crucial Parliamentary debate, a new chairman was required. This was Professor Chilton, the first
academic in the office, and good fortune resulted from his wisdom and leadership at this difficult time. Meanwhile the contentious New Zealand School of Agriculture Bill had been drafted, was before the House, and occupied 44 pages of reporting in Hansard. South Island members were drawn together in a defensive bond, regardless of party allegiance. Buddo led and he was supported by other Reform Party members, David Jones and H. S. S. Kyle. G. W. Forbes, a Liberal, spoke in a sense with two tongues. He regarded the anticipated cost of the projected new college as unwarranted; submitted that there were few positions in New Zealand for graduates, and that what the country needed was a greater supply of efficient farm-workers. He said “in the past farmers in Canterbury had regarded with some doubt the value of training given farmers’ sons at Lincoln”; that farms schools should be fostered; that Lincoln should be handed over to the Government to be co-ordinated with other existing agricultural agencies—Cawthron, Wereroa, Ruakura. Some of his critical comments were not inscribed or quoted some years later when Lincoln College celebrated the opening of the George Forbes Memorial Library. On the other hand he revealed how he would vote when, in response to the contention of the second-college advocates that Lincoln had done so little for agricultural education, he said: “Is it not a wonder they (Lincoln) have done as much as they have. . . .” Sir Joseph Ward, who had supported his son through a course of study at the college, also showed that he bore the place no grudge. The Labour Party members including their leader, H. E. Holland, with H. T. Armstrong, E. J. Howard and D. G. Sullivan, knew little about agriculture but were all Canterbury men and that was sufficient for them to defend strongly. Support came from members representing other parts of the South Island.

Lincoln had offered too little too late, and the bill became the New Zealand School of Agriculture Act 1926, but as a result of further activity in the recess, the Government became aware that the matter had not been disposed of. The University Senate found fault, in that the status of Lincoln had not been defined. A consultation had taken place of representatives of Lincoln (Chilton and Hilgendorf), and of the new college and Drs. Reakes and Marsden representing the two state departments implicated. The establishment of the new college was accepted but on the understanding that the name “New Zealand College of Agriculture” was not applied to any individual college and the board conveyed its view that the arrangement could be given effect to by the establishment of two separate colleges of equal status with approximately similar constitutions, to be embodied in a single Act in lieu of the 1926 Act, or
by direct incorporation of Canterbury Agricultural College with Canterbury College, subject to a similar incorporation of the Palmerston North college with Auckland and Victoria University Colleges. The Canterbury members of Parliament went to the Prime Minister with the consequence that the two 1927 measures were enacted. One gave Lincoln equal status with the new College, enlarging the board of governors, authorising a grant of £10,000 for laboratory buildings and £3700 for research staff salaries. The other replaced the name “New Zealand” in the title of the other college with “Massey”, an action which J. C. Beaglehole thought “was one way of commemorating a Prime Minister whose endeavours for education had been in truth somewhat negligible”. Or as E. T. Beardsley expressed it “if Canterbury could not manage a disqualification it could in the end force an honourable draw. . . .” There would have been wry comment elsewhere in the knowledge that the title conferred on the northern college commemorated the name of a public figure who had a few years earlier privately conveyed his admiration for the qualities of Canterbury Agricultural College.

In November, 1927, the first official communication from Massey College was a request for Lincoln support in a petition to the U.N.Z. for holding B.Agr.Sc. examinations in August instead of November. The support was declined. Professor Peren, the principal, wrote saying he had made a mistake, as the time asked should have been September, not August, but Lincoln continued haughty. During the period 1928-60 when the two colleges were comparable, official exchanges tended to be strictly formal, lacking cordiality or warmth, each requiring a power of persuading to accept the proposals of the other. Relationships between staff members varied. Between 1928 and 1952 the respective principals had no personal dealings with each other, but the rank and file had bonds of fellowship in subject interests; they collaborated and conferred and exchanged visits but the exchanges tended to be dominated by their functions as co-examiners or assessors for the university in degree subjects. These functions generally went no further than to reduce a colleague’s marking by one or two points, or to make an editorial adjustment in the other’s proposed examination questions. The students inaugurated an inter-college rugby match in 1929. On a regular schedule for the first 10 years, it then became intermittent and aroused no fervour. By 1965 the match had been dropped, each college then confining its interest to the North and South Island University games. Lincoln-Massey relationships were never closely integrated or cordial. The duplicate colleges were competitive—for funds and students. After Massey became a uni-
versity in 1962, that new university's faculty of agriculture became even further removed from identity with Lincoln's development.

The establishment of Massey College had several effects on attitudes and policies at Lincoln of substantial lasting benefit. First, the changes in the empowering Acts had provided for membership on the Board of appointees of Canterbury University College, and this together with better use of the opportunity to nominate appointees of the Governor-General resulted in the vision and effectiveness of the board being strengthened. At this critical juncture these benefits resulted from the service in particular of the university academics, Professors C. Chilton and H. G. Denham, and the businessman C. H. Hewlett. This trio gave sustenance to the farmer-dominated board. Denham and Hewlett, for example, insisted that the stage had been reached when effective administration required operative committees;—education and research, finance and endowments, farm and buildings. The second consequence was that Lincoln, becoming aware that another college of agriculture was now functioning, almost entirely supported and maintained by Government finance, realised that equivalence and relativity could only be maintained by seeking a proportionate share of public money. A small annual research grant had been made from 1919 but it was from 1928 onwards that grants for capital expenditure were sought. From that year the concept of a self-supporting provincial institution was erased. Although an independent outlook prevailed for a further 30 years, reinforced in the knowledge of a substantial measure of income from farm assets, the inevitability of increasing State aid was accepted, until by 1960 the institution had become completely dependent on the State. One hastens to add that real progress only began when this kind of funding was initiated, though when the 1929 laboratory building financed by capital grant, was opened it was pointed out by John Deans*, chairman, that for 14 years previously the board had in fact been regularly asking for State aid for improving the teaching facilities. There was enthusiasm for the facilities of the 1929 laboratory building and it was to provide for most of the academic arrangements for the ensuing 40 years. No thought had been given to a gas supply for the laboratory bench burners. H. A. Knight provided the full cost of an Aerogen gas-producing plant. The third consequence of the revolution of the mid-1920s was that the staffing structure began to approach adequacy. It was quickly

pointed out that the Massey College had two professors of agriculture, untired, unproven, imported from abroad, still in the process of appraising the New Zealand situation, while Lincoln had none, despite the generally recognised stature after 20 years involvement of Alexander and Hilgendorf, the former an agriculturist, the latter a teacher and scientist. The 1930 Act sponsored by the University Senate placed Lincoln on an equal basis, and did justice to the two Lincoln men.

The same statute also required establishment of a professorial board which in addition to the Lincoln professors (only two from 1930-52) had the benefit of two or three professors of Canterbury (University) College. Other senior members of the staff were appointed to make it a viable structure—increasingly the guardian of academic concerns. The Canterbury participation was of great advantage, especially in the first 25 years, and members like Professors A. H. Tocker and J. Packer regularly attended the Lincoln meeting. At first they spoke often, but as the professorial stature grew representatives from the parent university tended to act more as observers. Certain other staff appointments deserve mention because of their involvement in pending developments or subsequent history. M. J. Scott* (1922-36), returned soldier, war amputee, became responsible for applied chemistry but in the continuing tradition of flexibility and improvisation this ranged from animal nutrition to soils. Taylor, the veterinarian, whose health was impaired by war experiences in the Middle East and Europe, had retired in 1922 and was replaced for a five-year period by another soldier-veterinarian, J. Stafford, always conceded the rank of colonel. After a term of three years by R. B. H. Murray, another soldier (Gordon Highlanders), relative stability was restored with the appointment of A. Leslie in 1930. The research and education grants derived from the 1927 Act also facilitated expansion through some specialist appointments:—D. J. Sidey (wool), M. C. Franklin (animal nutrition), R. L. James (engineering), L. Morrison** (entomology, part-time), and a much desired specialisation in farm economics was provided for. F. R. Callaghan was responsible for this forward move, made through a rural economics committee of the D.S.I.R., then only in its first year of development. A research grant from the D.S.I.R. enabled G. A. Holmes (B.Ag. '24) to be


appointed farm economist in 1928. He vacated the position after a year but his successor I. W. Weston (p. 77) was to remain for 32 years and to develop the subject on a base of commodity price analyses, farm performance statistics together with instruction in bookkeeping practice. A. H. Flay also commenced his career (p. 76) at this time, from a humble start as pasture research officer supported by a research grant, another of Callaghan’s innovations.

The comprehensive subject agriculture, a preserve of the director,* was now anachronistic and he was pleased to be able to depute much of the work to younger men who had kept in step with the evolving husbandries. Alexander for years had been lecturing with no notes or reference documents, and a readiness to digress, with pleasing effect. Those who aided Alexander in this work were three successive graduates, serving apprenticeship, preparatory to initiation of their careers in a wider connection:— H. J. Geddes,** H. P. Donald (Ref. Bledisloe Medal p. 325) and J. W. McLean.***

The repeal of the B.Ag. and replacement by the B.Agr.Sc. statute caused no increase in degree enrolment; they still came in twos and threes, 1932 being an inexplicable exception with eight entrants. The allied innovation of the first masterate statute—M.Agr.Sc. with eight options enabled three graduates in 1929, P. W. Smallfield, A. H. Flay, C. E. Iversen, and one in 1930, L. W. McCaskill, to qualify in agricultural economics. They completed this degree under a professor of economics at one of the university colleges. Further masters degrees in the agricultural economics option were conferred in 1934 on N. S. Tankersley and W. S. Allan, as external students. The former then became the agriculture master at Nelson College until he retired to Masterton where he was that town’s very long-serving mayor. Allan made his career in agri-business based upon Auckland.

The attainment of a 50 year anniversary had become an event worthy of recognition in this country. Thus 1930 was the occasion

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* The 1930 Act (Appendix 1) defined the head of the college as “principal”. Alexander ignored this, as did his successor who insisted that the all-embracing responsibility of everything from the cooks to the farms implied directorship rather than principalship. . . . The title principal was assumed in 1953 by Dr Burns.


of jubilee functions. It was 50 years from the year of admission of the first students. The celebration was deservedly modest for at the end of 50 years, revealed thus far as generally characterised by travail, the college had provided no more than approximately 1,000 diplomates and 30 graduates.

Lord Bledisloe, a Governor-General who entered fully into New Zealand life, was an eminent agriculturist. During his 1930 visit he recalled his possession of the premier award of the Royal Agricultural College, Cirencester, and asked if he could present a medal in perpetuity to Lincoln in token of his admiration of the quality of the training given. The medal was to be awarded to an old student who, in the opinion of the authorities, appeared to have most thoroughly justified the education received at the college. The Bledisloe medal has become the college’s premier honour and is widely regarded as a prestige award. The terms clearly provide for all types of qualified student except that the award has yet to be made to a woman student. The terms were laid down 15 years before the arrival of women students at the College in 1945, but it is certain from perusal of their attainments, that a woman will win the Bledisloe Medal before long.

Lord Bledisloe made a return visit in 1947, during which A. Briscoe Moore* received the 1946 Bledisloe Medal from the hands of the donor.

We want to return now to the beginning of this distinctively autonomous period and reflect upon how the staff and students had been occupying themselves.

* A. Briscoe Moore, Dip.Agric. 1908-10. Born Dunedin. Auckland Mounted Rifles, World War I. Developed 1900 acres hill and bush, Pipiwai, North Auckland. Past member N.Z. Wool Board; farmer leader in several organisations; Author “From forest to farm” Pelham Books in which he noted “the period at C.A.C. was one of my best investments. . . .”
CHAPTER 5

First Achievements in Agricultural Research

Bayne made a bid to attract public interest with useful experiments. Using student labour he established field plots in 1896 designed to test the yielding capacity of potatoes (40 so-called "varieties" imported from Scotland) and other root crops, including sugar beet. The water drill was put to use with turnips to apply 2 cwt. superphosphate with 400 gallons water per acre delivered through a spout. Another trial, peculiar if judged in relation to modern knowledge, was to examine the effect of applying 2 cwt. per acre of bran on growth of wheat. These agronomic experiments included rates of drilling, distance spacing, changes of seed, time of cutting clover for hay or seed, undersowing clover with cereal nurse crops, and modifications of cultivation preparatory to cropping. These experiments, with little or no replication and no statistical analysis, attracted the commendation that genuine efforts were being made to render the institution of value to the community but it was also said by the "New Zealand Country Journal" that "they are experiments which might be equally tried by any intelligent farmer since they involve the employment of no special scientific knowledge". Another criticism was that the results were not being published in a form that would attract farmer notice. In Bayne's work there were glimpses of phenomena that came to be understood 30 years later when the Agronomy (now Crop Research) Division, D.S.I.R. was established. Bayne’s experiments in animal husbandry also had potential significance when he used crossbred ewes with stud rams (Shropshire, Leicester, Southdown) and the results were assessed on lamb-carcase weight and cash returns. Reports were obtained on the lamb carcasses as received in England and these experiments were probably the first derived from Lincoln that influenced livestock farming, in that there was enhanced regard for the use of Southdown rams in fat-lamb production. The quality of the college livestock was revealed at early shows: in 1900 forty-three show awards were secured. But in this branch again, no one
was thinking in terms of developing an animal research centre and
the hapless director was dashed when his suggestion (1901) of
"inviting the farm community to visit the college to see the experi­
ments" was not adopted.

Colebatch the veterinarian, and Lowrie were the first to succeed
in developing a rapport with the local community. The former was
a skilled practitioner, fond of lecturing, and his director persuaded
him to offer regular "Friday-evening" lectures for farmers between
1903 and 1906. They became immensely popular and are notable in
being the first exercise in agricultural extension, the taking of
information direct to the community.

The good response of the public to the free veterinary lectures
encouraged Lowrie to offer short courses on dairying, book­
keeping, agriculture, nutrition, grasses and seeds. A fee was stipu­
lated and a minimum of 20 enrolments required but these courses
do not seem to have flourished, for they were not listed after 1905
and this form of extension was not reported again until Allan Leslie
became veterinarian (p. 76). For five years from 1905 arrangements
were made for the college to conduct the egg-laying competitions
of the Utility Poultry Society. "A very exciting affair", according
to G. W. R. Osborne. "One hundred pens each of six hens, erected
by student labour. Imagine being 'on poultry' for a week! Feeding
and watering on exact time and in precise quantities. What a job­
each pen had two doors to open for cleaning every day. However
the hens laid well—in fact on several occasions, seven eggs were
collected from pens in 24 hours, and at other times the results must
have been complicated by the disappearance of eggs taken by
students to their study rooms." In 1906 the costs of the egg com­
petition were £350 against a return of £165, but Lowrie persisted
with this sort of extension service as the poultry interests in the
community wanted it.

There was an awareness at the college of national possibilities,
but when the Director of Technical Education requested (1905) that
some of the Lincoln men should give short courses at New
Plymouth, the board declined. It said "the staff have their whole
time occupied; further, that as the staff has had no practical experi­
ence of conditions obtaining in Taranaki it would be inexpedient
for members to attempt to give lectures having a practical bearing
on that district".

Though some of the newspapers were reporting agricultural
topics, the "Weekly Press" in fact being a leader in agricultural
journalism, there were limited opportunities for the staff to publish
reports of any substantial nature. Volume 1, N.Z. Journal of Ag­
ticulture did not appear until 1910 but in this period the college
magazine aided extension with contributions (1905) entitled “Agricultural Schools” (H. A. Knight), “Italian Ryegrass” (W. Lowrie), “Equine Influenza” (W. Colebatch), “Bumble-bees” (F. W. Hilgendorf). It was not until 1929, with the publication of agricultural bulletin No. 1 of the Canterbury Chamber of Commerce, that a steady flow of extension information came from the college. Those pamphlets were published monthly until the last issue, No. 467, in 1968. This series, each number dealing with a topical subject written by a member of the staff, became widely acclaimed. They were distributed (6000 copies) throughout the agricultural community, and also used within student classes, and were undoubtedly an effective agency for extension of technical information. The Bulletins were extremely well edited, through being pre-circulated to all staff and a committee of the chamber before the scheduled monthly “bulletin meeting”. At this encounter the author had to contend with the views of his colleagues, some of whom on specific topics were ignorant or ill-informed, but endeavoured to display a profound knowledge of the use of the English language. On occasions there was humour and banter, sometimes vituperative dispute, overlying a determination of the author to preserve as much as he could of his brainchild, upon which the utmost preparatory care had been bestowed. The termination of the bulletins was widely regretted, especially as it was caused by a reluctance of many of the latter-day staff to write the material without pay, an arrangement accepted without question by the pioneers in this extension service.

Another annual staff exercise was compiling the reports on diploma students. The academic and practical record having been displayed, the chairman sought comments to be added to the report. Some examples: “advise discontinue”; “first-class performance”; “has had too much rugby”; “he comes from a straightout Merino family and that’s where his interests lie”; “I like Riley...”. Some of the lecturers unhesitatingly strove for good words to be recorded for the sons of their friends. This horse-dealing required the round-table comments to be interpreted as a staff consensus. Some chairmen, like J. W. Calder, had a masterly ability to find the felicitous phrase. The striking thing compared with later times was that all the staff truly knew something about all the students.

Whereas Bayne’s request to unite the community to the college had been spurned, Lowrie was encouraged to inaugurate an “annual gathering” initiated in 1902 when selected farmers were invited to inspect the property and enjoy a garden-party and end-of-year function at which student awards were presented. For several years these gatherings continued, including lunch and drinks.
About 75 guests were provided for by a city caterer. The select nature of the gathering attracted a complaint: "I notice the annual day for farmers to visit the Lincoln College is again approaching", said a letter from M. Corrigan. "I also notice that the directors want nobody to attend except those who are provided with a wedding garment in the form of a ticket. As there are thousands of farmers who have never received an invitation and are at a loss to know who pays the expense, would you let us know if this is borne out of public funds or do the directors provide the annual luncheon at their own expense... if the expense is borne by the public I maintain that nobody should be debarred from attending..." The function, of course, like all other activities, was paid for by the college; there were still no public appropriations. The success of Lowrie's management of the farms had facilitated these extension services to at least some of the community and the college naturally tended to seek out its friends. "Farmers Day", but without the expensive hospitality, was later held only once a year, integrated with prize-giving. For the rest it was left to farmers to arrange visits to the College to confer with staff and this activity tended to be limited by proximity. This sensitivity to opening the gates to all and sundry inevitably induced controversy and the board (1910) found it necessary to resolve: "that in view of the fact that perverted ideas about the college seemed to be rife amongst members of the House of Representatives and Upper House, invitations should be sent to all Canterbury members to come and inspect the College...".

Farmers Day (or a day for some of them) was eventually dissociated from the occasion of prize-giving and diploma presentation but it was not until 1935 that arrangements were made for open field days of inspection and instruction; from these the present plan has evolved. There were occasional arrangements of note; for instance a special train arrived in 1935 laden with 300 Southland farmers, and a year later, 450 from North Otago. The trains were halted on the Southbridge branch line contiguous to part of the farm. The farmers returned to the train after their field day, which involved for the Southlanders two successive nights in a train, a low grade one by modern standards, with a 380-mile journey each way.

The direct contact with the community received impetus also when the "College tent" or extension display was instituted (1931) at the Canterbury A. & P. show. The exhibit varied in concept, endeavouring to display by object lesson, or visual aids, current interests of college staff. The tent was of demonstrable benefit in public relations but more efficient ways are now available for communication and exchange with the community.

Farmers' short courses received their strongest support from
1929, this probably being correlated with the economic depression: younger farmers were seeking guidance towards efficiency or alternative practices. In 1932, short-course farmers slept on stretchers in the Memorial Hall; in the following year the overflow from this hall was accommodated in the attic or storeroom floor of the laboratory building. Over 40 farmers were in residence. This kind of development reflected the extending competence of the staff and the capacity of the new members to demonstrate techniques or to stimulate discussion from their ideas.

In this period, Hilgendorf was following his scientific interests. Much of his work was aided by students attached to him on roster as one of the jobs in their practical experience. From 1899 until his retirement in 1936 he established for himself a pre-eminent position in professional agriculture and in the natural sciences. His own memoirs depict his delight in investigation. His heavy lecturing commitments, together with the meagre resources at Lincoln, would have dissuaded others of lesser integrity, ability and enthusiasm. His interests were more in the unusual than the profound. He probed several research possibilities and eventually published 16 papers in the Transactions of the N.Z. Institute (Royal Soc. of N.Z.). As a youth he had been mainly attracted by geomorphology and zoology. In the latter context he recorded swarms of the green parakeet and flights of the long-tailed bat. As a senior university scholar in natural science he studied aquatic microfauna (rotifers) and the results led to his D.Sc. (1905) through the University of Otago. He said of this work “it was fairly good for the condition of study at the time but nowadays would not be considered of D.Sc. standard”. In his early years at Lincoln he wrote several papers on insect life (Costelytra beetles and bees). He wondered for instance, if bees found their way home by magnetic sense. “I used drones so that I wouldn’t get stung, and rolled them in flour so that I could recognise them. Then I tried to upset their magnetic field in all kinds of ways. I carried them away from home in a hollow iron ball with thick walls, or fastened on their backs little magnetic needles so arranged that when the bees were flying south the needle would say they were flying north. Then I would take them a mile or so away on my bicycle, liberate them and try to race them home. They were nearly always there before me, sitting on their alighting board, cleaning off the flour in which I had rolled them. I used to keep a hive of bees in my study by an open window to see what they would do when the hive was moved. I found at last that bees found their way home by muscular sense, aided by sight”. He wrote descriptions of bumble bees and their capacity for cross pollinating red clover.
Between 1911 and 1936 he regularly observed the height of the college artesian well and correlated the variation in its static head with rainfall on the plains and with barometric pressure. Some of this sort of work was given small grants from the Philosophical Institute of Canterbury, (now the branch of the Royal Society of N.Z. on which body he served as a councillor for 15 consecutive years and as president in 1907, 1923 and 1938. He was elected to the fellowship in 1921. Until he bought a car he used to cycle to and from these scientific meetings, 14 miles each way. In 1910 he started plant breeding in a small rather uninformed way. In customary manner he began by selection and by 1914 had produced College Hunters—a pure strain of a very attractive looking wheat which was an immediate success. He worked to improve other wheat but never secured any notable success. He did manage to produce a good strain of Algerian oats, however, and College Algerians became even more widely known than College Hunters. He became enthusiastic about wheat hybridisation while working at Cambridge with Sir Rowland Biffen in 1922, a visit made with his family at his own expense. There he saw the variety White Fife used as a quality parent and on bringing some seed back to N.Z. established the plants and crossed them with the Tuscan variety. As well he made 16 other crosses. From this material—Cross 7—the first release of the institute he was to establish was eventually derived.

In the early 1920's he organised a Pure Seed Association which sponsored the first seed certification in New Zealand, subsequently conducted and expanded by the Department of Agriculture from 1925 onwards and for many years thereafter directed by his student, J. H. Claridge (B.Ag. '26).

Between 1923 and 1928 he also started selection of grasses and demonstrated in plots the fact that there were short-lived and long-lived strains of perennial rye.

Hilgendorf had plots of cocksfoot strains growing at Lincoln and among them was C23, in contrast with Danish which was then being largely imported. When showing Mr. Coates, then Prime Minister, round the plots in 1924 he remarked that C23 was throwing twice as much seed as Danish. "Twice as much," said Coates, "why don't you tell the truth? Ten times as much. How much money does the college need to carry on this work?" Hilgendorf suggested £500 a year. "All right," said the Prime Minister, "it will be on the estimates". With this money Hilgendorf travelled all over the South Island, selecting cocksfoot from the heaviest to the lightest land, and established plots in about 20 places from Tasman on the Moutere Hills (Nelson) to Waimahaka, near Invercargill, including two on the West Coast. He found no cocksfoot on these...
trips better than C23 itself, but collected material on the distribution of the various grasslands of the South Island and started to draw a map of them. After about 10 years of work he completed the map which when published in 1935 was the first ecological study of the kind.

He was also a front runner on the statistical interpretation of field experiments in the light of the concept of the probable error. Before that time (circa 1924) every agricultural experiment in the country consisted of two plots, one with manure and one without. Hilgendorf laid down replicated experiments with his wheats, and subjected to statistical analyses as far as possible all the field trials recorded by the Department of Agriculture from about 1900 to 1923. This was published as Bulletin No. 1 of the Department of Scientific and Industrial Research.

Hilgendorf now began to realise that he must breed for quality as well as yield. The Flourmillers' Association offered him a flourmill for testing flours from different wheats. It was then that the idea of a wheat research institute was born, and Hilgendorf eventually persuaded Dr. E. Marsden, head of the newly-formed D.S.I.R., to form the institute exactly as he proposed. Hilgendorf became director of the institute.

Contrary to some prejudice and misconception among his critics, Alexander was alert to the need for research efforts. He encouraged Hilgendorf, and those who were to follow, Calder, Leslie, Flay, and others. Between 1919 and 1923 he made repeated representations to the Minister of Agriculture saying that "for some years the board has been hoping to co-operate with the Department of Agriculture on experimental work . . . of far-reaching importance." The bureaucracy in Wellington with responsibilities for agricultural extension and research were now entrenched, and if Lincoln had lost opportunities in the past, it was too late in 1923 to retrieve the situation.

When J. W. Hadfield and A. W. Hudson (B.Ag. '33), the department's agronomists, were transferred to Palmerston North, the board protested that such location of agronomy in a centre of dairy and pastoral pursuits, and detached from the county's arable farming, was contrary to national interest. The college offered to set aside 101 acres on lease to the department for purposes of seed and plant research and after protracted discussion this was accepted in 1931 with the establishment of the Agronomy (now Crop Research Division D.S.I.R.) on college land. This was the first accomplishment in what became a continuing plan to have Government and allied research units near the college, entirely dissociated in administration but unquestionably of indirect benefit to the
As Hilgendorf's assistant, J. W. Calder was among the first to derive further aid from the D.S.I.R. research grants that were provided annually from 1927. After Hilgendorf concentrated on the Wheat Research Institute, Calder reported success in improvement by selection in oats, ryegrass, clover and cocksfoot.

After Bayne's effort with fat-lamb sires, there was no planned experimentation with animals for several years. Alexander publicly advocated his methods of pig management; he called for more attention to be given to herd-testing and he published the results of experiments supervised by his stockman, M. M. Fleming, on winter feeding of cattle. After M. J. Scott joined the staff in 1922 as "chemist", he like Hilgendorf and Calder before the development of narrow specialisation, met the requirements of an agricultural scientist with an adaptability that served some of the needs of the time. Though he lectured in soil science and animal nutrition, his research interest was pigfeeding and management, most of his findings still being basic in this branch of animal husbandry. Before he became superintendent of the pig industry, Wellington, some of his interests in animal nutrition had been transferred to M. C. Franklin on his return from post-graduate work at Cambridge. Franklin later went to the McMaster Institute of Animal Research, Sydney. He had guided the students I. M. Brown* and W. R. Lobb (1937), D. V. Gordon and D. Newall (1938) towards masterates in animal husbandry, the first since McLean (1934).

The pioneer work on wool that D. J. Sidey (B.Ag. '27) completed tends to illustrate further the success Lincoln derived from the employment of its own graduates who had a wide view of agriculture and its deficiencies and the will to solve some of the problems.

During the first 40 years, the college veterinarians followed in the earlier tradition of their profession, as practitioners using their case histories for student instruction. There was no report of veterinary research until Murray, in 1928, described his observations on lamb mortality and pulpy-kidney disease but during Leslie's incumbency (1930-5) there was inspiration, vitality and accomplishment. The dryland property, Ashley Dene, had not been developed agronomically since its acquisition in 1909; it was a financial liability in 1930 carrying 800-900 ewes of low productivity during a period of economic depression. Leslie was enabled to place the whole flock under experimentation and McLean, who was his graduate assistant at the time, has described how the sheep were identified,

* Lost his life World War II on service with R.A.F. Europe.
weighed and distributed for husbandry treatments. In McLean's appraisal the Ashley Dene property was then the largest sheep research unit in New Zealand and from the work Leslie published several papers of distinction which were largely responsible for his election to the fellowship, Royal College of Veterinary Surgeons. His lecturing was of outstanding merit.

After Leslie's* departure from Lincoln he continued to be influential in the development of another generation of veterinarians, particularly the first group of Lincoln graduates, J. W. McLean, A. A. Blakely, J. M. Stewart, W. D. Robinson and M. C. Armstrong, who were supported by Government bursaries in veterinary training at Sydney University before the establishment of the Veterinary School at Massey University.

Only a limited contribution to knowledge of soils was made in this period. Gray's assiduous analyses included reports on samples of soils and manures and Walker's assessment of this work was noted earlier. Before he came to Lincoln, Wild (p. 25) had initiated a soil survey of the Wairau plain, Marlborough but was unable to obtain assistance for the continuation of these studies. At Lincoln he concentrated on teaching. He was said to have been a dull lecturer, and his concept of the subject of soils was revealed in his textbook which prior to the explosive unfolding of soil-science literature achieved a demand of several editions. Scott did not regard himself as a soil scientist either, and his course in the pre-pedological era was predominantly one of soil chemistry and mechanical analyses. Nevertheless his field trials on pasture topdressing were remarkable achievements, since the work was done with little technical assistance. It was the perception of Scott and Callaghan (of D.S.I.R.) that induced Alexander to engage Flay** under a small research grant. It was urged that Flay should guide Canterbury farmers towards better pasture management and utilisation. The fields became his laboratory and he travelled to them almost continuously and in doing so, observed the unthriftiness of grassland. The outcome was that Flay became a pre-eminent extension man as from 1932, when he was enabled to establish the Farm Advisory Service. This had coincided with the economic depression (1930-2) and the


service of Flay and his first group of assistants was directed towards farmers in financial difficulty.

Flay was self-made; he was an original, developing his metier within his own thinking and devices. He would be the first to praise the allied dedication of the assistants who grew in experience and stature with him. The first were M. H. Rogers, C. P. Tebb, J. F. Pyne, former diploma students. They and their successors grew in the shadow of their leader, to become a group of farm management appraisers who were of great benefit to the community. A somewhat incongruous partnership had developed between Flay, the practical agriculturist and R. L. James, the first lecturer in agricultural engineering. James had a basic-science interest in aspects of soil physics. Between his relatively-light lecturing commitments, he conducted studies on physical properties of soil with particular reference to water absorption. A tripartite link then developed between James the academic, Flay, and M. B. Cooke, then managing a Lands Department dryland farm at Seafield, Mid-Canterbury. The outcome was the first scientific studies on irrigation in this country. Hilgendorf said James's published paper was of great value as a record of the first exact experiments on irrigation and he praised one particular study as being the most elaborate trial so far conducted in New Zealand. Flay assembled and published the economic and managerial aspects of irrigation farming at Seafield. Two masterate students were recruited in work on managerial aspects of irrigation, A. A. Copland (1939) and B. H. Miller (1952). The former made his career later in Britain as manager and director of the estates of Lord Beaverbrook in Somerset (Bledisloe Medal Appendix 4).

I. W. Weston's* critical studies within agricultural economics were expressed in his reports on farm and district surveys; one by J. Fleming, a masterate student under Weston's guidance was published as a D.S.I.R. bulletin. Weston wrote on beef production, arable farming and marketing of produce in Professor H. Belshaw's comprehensive book, and he wrote textbooks on taxation, farm book-keeping and accounting.

His original concepts as a pioneer in economic farm analyses linked with his bright personality, attracted several graduate students. A. F. Greenall (1936) surveyed farm costs, and three submitted theses on aspects of land use and management. These "Weston men" were A. C. Norton (1951) who made a career in conservation

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with the North Canterbury Catchment Board, M. Nelson (1952) who became prominent in international economic assignments in Central and South America associated with Stanford University and the Ford Foundation; W. O. McCarthy (1954) later to serve for some years as a professor in the period at Lincoln when agricultural economics had far exceeded Weston’s concepts.

C. E. Ballinger (1936) travelled by horse through much of the high pastoral country of Mid-Canterbury and published an economic report, and B. Wallace (1936) also used a horse in reporting on economics of Banks Peninsula seed production.

It may be concluded at this juncture that there were substantial research accomplishments at the college during the period when the institution as a whole was not regarded as either dynamic or progressive. The work commented on was derived from the personal bent of individuals, unsupported by co-ordinating committees, but encouraged by a few departmental officers, of whom F. R. Callaghan was an outstanding example.

The recognition of research in the life of the college and the determination to carry it through was indicative of the erstwhile unthrifty degree course burgeoning to a state of vitality. Significantly, it was still a general-purpose degree, with only a limited number of options available at the masterate level. The adaptability of students, all of whom experienced an identical undergraduate course, to proceed separately to masterates in animal or field husbandry, nutrition, genetics, economics appears to be testimony to the first requirement of research students—interest and motivation.
Within the first 40 years no substantial additions were made to student accommodation and the accepted enrolment was stabilised, at best, between 50 and 60 students. A “degree cottage” accommodating 10 enabled the enrolment to reach 68 by 1932. Even if the students knew of the crises that taxed the administration, they were not affected by them. A corporate student life began to evolve. It matured into a rich and happy experience; a community of young men detached for the most part from city life, having to develop their own code of behaviour in a residential hall where the weak were supported by the strong, or the brash deflated by those who had greater wisdom and experience of life. Canterbury Agricultural College became an amalgam of sons of the poor and the rich, of yeomen, artisans and gentry, most within the dominant diploma course; the few degree students were happy to be integrated.

The incorporation of foreign students has been interesting. First there were the Englishmen, an infusion of young men on remittances or sponsorship, seekers after success in what used to be a Dominion of a motherland. Some were scions of distinguished families, others came to escape from earlier troubles, and for some of them it was either to be Canterbury Agricultural College or the French Foreign Legion. The Englishmen were enterprising, confident and courageous. H. N. Gray (1924-6) was typical. He plagued lecturers but never with ill-intent. He would try anything, as in 1924 when a Royal Show was held in Christchurch. McLean, of Maraekakaho, was so pleased with the arrangements that he provided a dinner for all the attendants of animals at the show; college students were annually involved in this work. A band was sought for the dinner. Gray persuaded Mr. Alexander that he and some other students could provide all the music required, which they did with an amazing medley of variations on one tune, “D’ye ken John Peel with his coat so gay. . . .” As the dinner proceeded most of the guests became undiscriminating in their musical ap-
preciation but the Hawke’s Bay aristocrat and politician was evidently pleased, for on the next evening of the show season he entertained Gray and his fellow students at the premier hotel in Christchurch. Later a board member, John Studholme was seeking a good stacker for his harvest at Coldstream. Gray and his bosom companion S. Cooper asked for the job, though on the college farm they were regarded as inept in this branch of work. However W. C. Stafford showed them how a stack was built, using wooden matches on a study table to demonstrate sheaves; they practised assiduously with the matches, then reported for Studholme’s work contract.

Other Englishmen before World War II who were to be remembered fondly by their contemporaries and who returned to Britain, were W. and J. Robinson, N. H. Chapman, P. Thoms, A. Izzard-Davies, B. W. Francis, S. A. Mossop, J. G. Castling and P. G. Young. Others like C. P. Tebb, J. Pavey, F. J. W. Billings and G. S. Moore became New Zealanders. Foreign students unexpectedly presented themselves at Lincoln during a period when no inducements whatsoever were publicised. So long as they had instincts for survival they were happily assimilated and they enriched the student body. For instance there were the Chileans, the MacLeays* and Victor Braun (’31-2) the latter later prominent in South American politics; then Isamu Kawase (’31-33) from Japan. Kawase had a distaste for farm work. When he sat on a stool to milk a cow he just remained there until the whole herd had been finished by the other students. Despite the threats and curses of the coarse New Zealanders, his urbanity was impenetrable. So also on the tennis court; as his sneakers and cuts infuriated his opponents, the Japanese response was a wide smile and a succession of apologetic or self-laudatory bows. Kawase had a difficult experience in Japan during World War II, largely because of his refusal to connive with the high command in formulation of possible invasion plans for New Zealand. He retained his fond regard for Lincoln, and made a return visit in 1977. Over the years he had become a prominent agricultural adviser in Japan and a public relations guide to numerous visiting New Zealanders. Bertil Hjelmstrom, a Swede, was another foreign character in his own right. An apprentice tailor, he had been lowered over the side of his vessel, one of the last full-rigged ships, into a bath tub off the Australian coast. He made his way to the shore as a deserter in this bath tub, provided with a paddle and improvised sail

and somehow he evaded deportation and was able to complete his
diploma course (1936-7).

A wave of interest in the college developed later among Austra-
lians; then came a group of Indians, preceding the Colombo Plan (p. 280) which provided entry for large numbers of Asians and
Africans. The end point in this sequence was the attainment of
international recognition and today all parts of the world contribute
to the student body.

Regrettably few Maoris enrolled, but those who came were
singularly distinctive as personalities. In the first period, they in-
cluded A. T. (later Sir Turi) Carroll (see Bledisloe Medal p. 323), the
Ormonds of Mahia (G. E., D. and A. R.), T. R. Ngata, I. Trainor,
M. Kohere, S. T. Anaru and H. Hipango; and latterly as V.F.M. men
(p. 107) J. T. and W. R. Wordley, W. and R. Apatu, E. Wikaira, J.
Runanga and L. Karatau. The late Bishop Bennett had hoped Maoris
would be attracted in larger numbers and as a gesture, he presented in
1931, a carved tablet embodying the kiwi and tekoteko with the
inscription: “He toa riri he toa pahekeheke he toa mahi—Kai he toa
mau tonu—a mate noa iho matekohengenoa iho”. Translated this
reads, “The fame of the warrior on the field of battle is transitory but
his fame in the field of industry is everlasting.

For most of the college’s existence, the fee for board and tuition
varied little above £50 a year. This was based on diploma students
being in general, an efficient and economical farm labour force,
while degree students, not working fully on the farm, were in
residence for a shorter period of the year. None the less the standard
Education Department bursary available to matriculated students
did no more than cover somewhat more than half one’s annual
financial needs. This was accepted without question:—the balance
had to be obtained, and there was no thought then of study bur-
saries expected by students to cover all board and fees.

Students got about, as did A. J. Birdling, by walking or on
velocipedes or penny-farthing bicycles. In 1901 there was a college
cycle-touring club and on a 54 mile round trip the participants had
to face newly metallled roads and a stiff nor-wester which gave
several members a bad time. There used to be cycle races on the
college sports programme. The record time was 3½ minutes for
the mile on a grass track. Many people cycled to and from Christ-
church, including some younger staff during World War II when
money and petrol were scarce. A motor-cycle era of the 1920s was
probably the most colourful in student transportation. In 1924 there
were 20 motor-cycles among 50 residents. In use, each machine
invariably carried two students. One group made a cost survey
which showed that the machines ranged in age from new (cost of £155) to 14 years (£30). It was calculated that the total overhead charges for maintaining a motor cycle then were £21 per annum; the distances covered were from 1500 to 6000 miles at a running cost of 1.3 pence per mile.

When the hitch-hiking habit became accepted some students soon proved themselves experts. They would arrange to meet a girl in an hour, go out to the main road to obtain a lift and arrive as speedily as by public transport. Even the staff had to "hitch" in emergencies. One member, having shattered his false teeth on an apple at lunch, retrieved the remnants of the dentures, placed them in a college envelope and rushed to the road to hail the first vehicle that would get him to the dentist. He took the first offer, was told to get into the back (the cab being fully occupied) found himself among the joints of a butcher's van cargo. It is said that he arrived at Riccarton with festoons of sausages and saveloys round his shoulders.

There were annual visitors who came on foot, the "swaggers" like John the Baptist or Russian Jack. They had the Lincoln students on their list of contacts during their rounds. The message passed through the study rooms, "John the Baptist's at the front door. . . ." Amid the banter of the audience the little man gave his mouth-organ recital with tap dances; a good meal was arranged in the kitchen and some time later, usually unnoticed, the swagman moved down the drive into the night and within a few years to oblivion.

Then came the cars, only a few at first. There were some classy sports models like those of A. A. Macfarlane and G. A. Holmes (circa 1930), followed by less ostentatious models such as D. Wilkie's Model-T Ford, with no effective brakes but a useful reverse gear. Student cars now number hundreds, are registered with the college authorities for identification, and parking accommodation has now to be provided. There were few comforts in residential life when corridors and studies were illuminated by kerosene lamps and bedrooms by candles. When bathing facilities were limited, six to eight usually used the same water, partly immersed sideways in a bath discussing the day's experience, before plunging under the cold showers. Even cold water could be rationed on occasions until 1908 when power driven pumps were installed. Before that the water supply depended on a windmill near the farm centre. When the weather was calm there was no water.

Two or three students shared a study, which were centres of studious intent only near examination times. They were small rooms, simply furnished, decorated to taste, and with facilities for
supplementing the college food. Pin-ups of the female form were not common. There was a fire-place, but the college provided no fuel. The wood box was filled from nearby plantations and by dealing in coal illegally extracted from the college supply. Coal was delivered to the Lincoln railway station, and students on roster had to bring the coal by dray to the college. The ploy was to throw off all the large lumps into conveniently placed ditches and other hiding places, to be later retrieved. The college wisely tolerated this practice, though occasionally a token remonstrance was expressed at its extent. There is a legend, one of several relating to Charles Upham (p. 110). With his mates, Upham listened to the Director complaining that the difference between coal ordered and the amount the students delivered had become too great, whereupon Upham said: “Sir, on behalf of the students, I wish to protest that the quality of coal is below standard”. Max Van Asch, one of Upham’s (1928-30) contemporaries, related that on hearing a suspicious noise beneath the study floor, they opened the man-hole to reveal a small student who said he was earning 5/- per hour to carry Van Asch’s coal from his “cellar” to one further along, where stocks were low. There was a durable brotherhood in this group. During a study fracas, one of them was quite severely injured, and in circumstances that would have entailed dire disciplinary consequences. The students brought Dr. Cooke down from the village and said: “Sir, we don’t want the ‘Old Man’ to know about this: we will look after him till he’s fixed”. The doctor admonished the culprits and though he was a great friend of R.E.A., he did his part in the interest of the fraternity. For three days the injured student was nursed and fed by his fellows, until he was able to reappear.

In the pattern of daily life, old clothes, almost rags and football jerseys, were the general rig of the day. If there was an occasion to be tidy, a school blazer was employed, and the colours of the nation’s great and lesser schools were all represented. In this matter of dress several students at different periods had an encounter with Alexander, hereafter to be referred to, as students knew him—R.E.A. or the Old Man—which followed this form. “Good morning Sir,” said the student with deference. “Good morning. Have you got any matches?” “Yes Sir,” said the student struggling to find his smoking equipment, happy in the thought of helping the Old Man. “Right,” said the Old Man, “you go and put a match to those clothes. They ought to be burned. . . .”

A group photograph of the whole college (male members only) was taken every year. It was referred to as the “Farm Group”, but they were all there, lecturing and farm staff, diploma and degree students. The Old Man, seated as the centrepiece, was flanked by
his aides and the young men, in miscellaneous apparel. Some of the
groups were able to bring a popular horse (Duke) or a bull (Loobah)
into the picture and Steffano Webb was at his wits' end to know
when to regard the scene as composed. Later, a "College Photo-
graph" was commissioned annually and was continued until the
mid-1950s by which time it was impossible either to assemble or
photograph the college as a whole.

The McLaren traction-engine acquired at the end of 1899, re-
main in use until 1942. It provided useful mechanical experience,
but working on or with this engine possibly caused more laughter
than came from most other phases of work. The traction-engine
powered a Ruston Proctor threshing machine, which was used for
the grain and seed harvest during two months' continuous work
before the year's course work began. The engine was in constant
use on belt work for chaff cutting, saw bench and grain crusher or
for haulage and stump pulling. C. P. Tebb,* R. A. Fougere and G.
W. R. Osborne, who would today be regarded as "traction-engine
men" when rallies are held, used to enthuse on the perfection of
these steam engines. They spoke of the importance of water quality
in the boiler, the injectors and valve and piston lubrication. Tebb
said that for students working on the engine was a mark of merit.
First year students admiringly watched it at work from a distance;
second year students came a step nearer when they were allocated to
the water cart keeping the boiler supplied, a duty that also entailed
lifting half bags of coal to the firebox. For senior students came
graduation to assistant-engineer status. This included getting
steam-up before breakfast, even a little unauthorised driving round
a paddock, and certainly blowing the whistle to let the neighbour-
hood know the machine was under good care. Tales have been told
of occasions when the fusible plug blew out with an explosive roar;
when a spark ignited stubble and the straw stack caught fire, though
the mill was pulled clear; when an unauthorised student attracted to
the engine standing in the yard with full steam up, tested a lever or
two and was unable to prevent the machine demolishing a shed
wall. Probably for every year from 1900 to 1946 there was an engine
story, for it was a character piece. For example, C. J. Hamblyn's
(Dip. and B.Ag. 1920–2) tale illustrates how the engine impinged
on college life. "It was Saturday morning—the day of a rugby

* Cuthbert P. Tebb. Born London 1907. Arriv. N.Z. 1925 under Public Schools immigra-
tion scheme. (Dip.Agr. 1928-30 Gold Medallist) 1931-4 farm staff. 1935 Farm Advis.
1940-3; 1946-52. Outstandingly successful as a manager and as a personality able to obtain
best efforts from students. Econ. Service N.Z. Meat and Wool Bds. Hamilton and Wel-
lington 1952-72. Sec. (1935) President (1949-50) Old Students' Assn responsible for fund
raising. World War II Memorials.
championship play-off against Leeston, a team that had Hugh and Bill Dalley, a couple of seasons or so before the latter was to become the All Black half-back. A working crew had the engine and chaff cutter out, with Dick Fougere in charge and I was stoker. With thoughts of a great football match ahead we worked hard and finished early and were coming back, flat out along Springs Road. I was shovelling coal, when Fougere told me to take the steering wheel, but for some reason he had jumped off the engine before I had shut the furnace door. By then the engine was heading off the road so I grabbed the wheel and started winding but she kept on, so I thought I must have been winding the wrong way and tried the opposite circle. It was no good, the engine went into the ditch. There was a lot of cheering but R.E.A. was not far away. He came up in a rage. ‘Urrh, man, what have ye done? You can’t leave that thing there for the farmers to laugh at as they go by. You’ll have to get it out...’ An urgent message was sent to Pearson to bring his traction engine down to assist. It was no use, so most of the college had to set to with picks, shovels, spades and levers, and half the road was dug up. The footballers were let off to go to Dunsandel. ‘Hilgy’ was to drive us but when he started his car there was a terrific explosion—the silencer had blown up. An urgent message was sent to another college supporter, Dr. Cooke, the village doctor, asking if he would take five players to the game. He had a brand-new Essex, just run in, but he went past Ashley Dene at 70 miles per hour which was great speed in those days. We arrived at the ground 20 minutes late and the original ten starters were exhausted, but the game ended in a 6-3 win for us. Back at the college the excavations had been continued right back to the centre of the road and the half-prostrate engine was dragged out by the aid of Pearson’s machine. When I visited the College 15 years later the scars were still visible on the side of the road....”

While the traction engine was in use a harvest fire was expected, even hoped for by some students who delighted in the diversions. The hazard of sparks from the engine getting into straw, during a high nor-wester gale, created a danger to plant and property, but the army of student beaters put such fires out, with the help of other experts using tractor-drawn ploughs at phenomenal speed to provide fire-barriers. There was an historic harvest-field fire in 1933, but these ceased after 1942 when the steam-engine was replaced by stationary tractors to drive the threshing mill. The engine, incidentally, after just on 50 years use, was sold for £20 for scrap in 1948. For several years diploma students became fire-fighting specialists for the district within the Lincoln-Rolleston-Springston triangle. They moved by truck with a high-pressure trailer pump, but most
The call went out "send for the College . . ." and in 1954 the force saved the Springston Methodist church and adjacent parsonage, and in the following year, the Lincoln maternity hospital. They had been endangered by grass fires, there being no fire service in the district. The relative freedom from fire in the college buildings was noteworthy when one considers the hazards. The house occupied by P. G. Stevens was razed in 1941, supposedly because of a mishap with a heater that was being used to comfort some of McMeekan’s (p. 114) piglets temporarily isolated in the washhouse. The student force was called, though all they had was buckets and a poor water supply in a ditch. They made progress until the fire engulfed the roof, but by that time they had saved all the house furniture, as well as many fittings including doors and fireplace surrounds.

For a long time the college equipment was a two-wheeled rubber-tyred hand-cart equipped with hoses, branches, axes and beaters, and the fire party in the main was made up by farm staff. A trailer pump was lent to the college in 1960 by the Ministry of Works and some instruction was given, but by 1963 more adequate equipment became available, mostly fitted out by the maintenance staff. A M.O.W. fire officer gave weekly training for some time until staff volunteers became proficient. There were false alarms in the early days, but not so many as in the later years when more detection equipment was installed and reliance was placed on underground Post Office cables and monitoring equipment.

The appropriate students learned something about every machine or piece of equipment in use on farms. This emphasis on practical training had been criticised by viewers from a distance but the young men thrived on the work roster system, especially in work with animals, dominated until the Second World War period by working horses. Fondness for the working horse, inbred among farm staff, was acquired by students, even a respect for the recalcitrant animal, the rogue in a team. T. Duncan (manager 1917-24), for instance, made students understand what a great worker and friend was to be found in the well-kept horse. He required the students “on teams” to do the proper feeding and grooming, but he himself gave all the horses their goodnight ration of oats, at which time he checked their appearance, before releasing them to night pasture. His tools of trade, always on a spring cart that he used to visit students at work, were a can of plough oil, an oil-can and plough spanner. His first words on coming into a field to start a student off were: "Have you oiled up. . . ." On occasions his practical advice
was more personal. He recommended burning a gorse branch under the cold seat of a farm implement before sitting on it on a frosty morning, thus avoiding the painful affliction that had beset him.

Colonel Stafford, veterinarian (1923-7), never lost a chance to talk horses. From his case book: "Duncan told Ruddenklau to take a pair of horses—Captain was one of them—and mow the paddock. There was a valuable ram there—one of Linton’s pets. Ruddenklau had to push the ram out of the way several times but once when he got off the mower Captain bolted, the mower collected the ram and cut off his four legs. There was a row over that! Another time, Sam Gibson was mowing, again with Captain in the pair, when Mrs. Alexander came out and offered Sam a cup of tea. He tied the reins and left the two horses, but Captain didn’t like being idle, so he came through the wire fence, mower and all, and by the time the horse reached the stableyard there was not much of a working mower left. The more we complained about Captain the better the Old Man liked the horse—even when T. Clarkson with three horses, in a reaper and binder, Captain one of them, lost control and they bolted round and round the paddock like a Roman chariot race. The binder was shaken to pieces." There were stories in this vein year in and out, until horses were no longer used as work animals. F. Dixon (Dip.Agr. ’40) related: "My most vivid recollection of the kind was when chain-harrowing with a four-horse team, presided over by one of the most objectionable horses ever known, Hero. I was so sick of him I hurled a rock and hit him over the ear; the whole team bolted with me flopping along behind; . . . they piled into a fence, some were on my side, some on the other. I was sorting out the mess to the accompaniment of the worst language I could summon when the director (E. R. Hudson) turned up. I was so upset and shaken I told him it was time someone shot the — before he killed someone. E.R.H. did not bat an eyelid, nor smile. He just gave me some advice on how to get the mess untangled and left. . . .!"

A. N. Wrightson (Dip.Agr. ’25) described the night the horses got away. "They were to be let out at 9.30 p.m. Someone had forgotten to close the gate. It was a clear frosty night and one could hear the thundering noise of 28 galloping draughts, free and on the loose. Some came up the main drive, making great hoof marks in the lawns and flowerbeds. For two hours we had to hunt for them in the night air and when they were finally shut in the horse paddock, no one was sure all were present. A tally in the morning showed that two were missing. About 10 a.m. a Tai Tapu farmer telephoned to say there were two strange horses outside his gate."
they College horses?"

There were instances of degree students electing to forgo their May vacation to remain at the college to work on teams, learning to plough under instruction and walking the furrows with a four-horse team. The present generation may find it difficult to appreciate what a part horse teams played in work of that day. "Stables" began at 6.15 a.m., when each horse was groomed and fed before students had their breakfast. The allocation of teams was closely followed, for there were horses of roguish, lazy, temperament and the manager also tended to place work teams according to his estimation of a student's ability to get the work done. Since all fields were ploughed in lands, striking out and finishing entailed skill in plough adjustment. Prizes were awarded for horsemanship, such as the G. W. R. Osborne medal, and the accolade was awarded when two of three of the top teamsters were selected to represent the college in a local ploughing match, that of the Lincoln Ploughing Association, one of the longest established in the country. In 1936-7 the students organised their own ploughing match, under external supervision and judging, using double-furrow ploughs and three-horse teams, each being judged on the ploughing of a quarter-acre bed. An anonymous donor provided the ploughman cup inscribed: "No honour is too great to be given to the plough". It was won successively by L. R. Morris and C. N. Watts. But it was the twilight of a declining day. It was not feasible to continue this event and within a few years there were no horses in the Lincoln association's competition.

Some drivers had reason to appreciate the reliability of the light gig or trap horses. A blacksmith regularly drank at the Springston Hotel, three miles away but he relied on the horse to bring him home, on a highway then without motor traffic. With the driver generally in an alcoholic stupor, the horse was accustomed to stop in the yard and to stand until the boozer recovered. The possibilities of this situation had not gone unnoticed. One evening students found horse, gig and driver, so they unharnessed the horse, put the gig shafts through the rails of the enclosure gate which was then closed, and re-hitched the horse on the other side. When Mr. —— came to, his predicament so shocked him that it was said he lost interest in alcohol for at least two weeks.

Work with other livestock was done with less enthusiasm. Cows and pigs had a few devotees, sheep many more. While the Lintons were in charge of the college stud flocks, over 2,000 show prizes and championships were won. Some men who were to be among New Zealand's most accomplished sheepbreeders, R. J. Low (Dip.Agr. '12), H. J. Andrew (1913-14) E. Cameron (1914-15) all Bledisloe
Medallists, testified that Linton senior had set them on the road to success. Another favoured assignment was the week “on vet” since this involved accompanying the veterinarian on his calls.

The military unit continued until 1921. Returned soldiers like the two Hudsons, C. J. Hamblyn, S. D. Barr, J. A. Dennehy, J. F. Cracroft-Wilson and B. E. Hamilton were excused what was now playing at military drill. There was still war in the offing, however, and when the Turkish-Greek conflict occurred, E. R. Hudson perpetrated a clever hoax that purported to call for a volunteer advance party to go to Trenthem to prepare for overseas service. Tremendous enthusiasm ensued. No work was done, lectures and farm work were at a standstill, and students were sending telegrams home to say they were enlisting. Towards the end of the day the hoax was exposed, but not the perpetrator. Army authorities laughed, but according to R. H. Bevin “the Old Man was near apoplexy. He began chain-smoking cigarettes and whenever R.E.A. forsook his pipe and began smoking cigarettes, it was an indication that he was furious about something and on the warpath. . . . The incident created an uproar which subsided only after many days. . . .”

The new generation of peacetime soldiers began to adopt passive resistance to military authority, as represented by junior N.C.O.’s, post-war soldiers sent out from Army Headquarters. So long as they wore a hat, troops were required to salute officers, so students carried their hats under the arm and did no saluting. Sick parades became clinics for shamming every complaint listed in the medical officer’s manual. Some paraded with puttees rolled to the knee, others to the calves, some with no leg accoutrements at all. Fly buttons were as conspicuous as badges, while physical training became near-riotous. When B. B. Blackmore, refusing to keep time with instruction, was told by the sergeant major to run across the parade ground and back, he went at a crawl on hands and knees. These incidents occurred at the 1921 camp. The last straw that broke the military back was the effort of bugler H. E. Pearce, who sounded reveille at 7 a.m. instead of 6 a.m., and thereafter paraded in un-military manner, stark naked except for a G-string, improvised from an old belt connected fore and aft by a football stocking. It was too much for the Army, who wrote to the officer commanding, Lieutenant C. L. Gillies: “Re Lincoln College platoon. With reference to the above, the members have now become non-effective and will not be required to do any military training while resident at the college. We regret that the Lincoln College unit had to go out, for it was one of the keenest platoons in the regiment, but it could not be avoided”.

AN INTEGRATED COMMUNITY

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In the early 1900s the student corporate body was administered by a finance and general committee of amalgamated clubs. These clubs, of course, were small but well-supported, an exception being the Students' Christian Union. It would seem the administration misinterpreted the aims and objects of the union. In response to the director's request for approval of this activity, the board indicated "they had no objection to such students as thought fit forming a branch of this union, but on the understanding that no member of staff should be associated with it or take any part therein". They probably thought it was some sort of trade union, viewed with suspicion by the arch-conservatives. The Students' Association was established in 1919 (Appendix 6) and its clubs were cricket, golf, rugby, swimming, sports (athletics). In addition it had some responsibility for the magazine and a recreational library. A radio pioneer, J. G. Gibbs (1923-4) was told "that the board had no objection to his installing a small listening-in set".

Before 1919, monogram badges had been used on sports jerseys or caps, inscribed A.C. or C.A.C., the colours being royal blue and gold from 1898 (although white football jerseys were used until 1964). Although the board arranged in 1896 for the establishment of the college seal, and notwithstanding the heraldic shield of the province of Canterbury inscribed by a craftsman above the entrance of Ivey Hall, the first crest or badge was created on the initiative of the 1919 Students' Association, and designed by the veterinarian A. Taylor. It was used on sports blazers and trophies until 1940, by which time it was recognised that the design was not in accord with heraldry. The Canterbury College School of Art was asked to design a suitable heraldic coat of arms. Of the 1919 device the original scrolled motto was retained, "Scientia et industria cum probitate". Translated this was: "Science (or knowledge) and industry with uprightness (or integrity)". This coat of arms carries ecclesiastical symbols indicative of the original association of the Canterbury province with the Church of England and the settlers of the church-based Canterbury Association. From this base, the heads of sheep and ox and the sheaf, represent the part of grazing and arable agriculture in the development of the college; these are linked with applied science, represented by the symbolic mortar and pestle. The chevron, an architectural structure, depicts the combination of these under one roof. This coat of arms was approved by the College of Heralds, London, who estimated that a fee of 130 guineas would be required to effect registration. The college was pleased to learn the coat of arms was acceptable but decided in 1940 not to register it. The coat of arms is now used as the official emblem and was also conceded to the Students' Association to
replace their original badge.

The foundation Students' Association established a canteen, largely through the effort of R. H. Bevin, aided by R.E.A., who provided a personal loan to buy the initial stock. For many years the canteen was worked by students as a shareholder co-operative, selling confectionery, tobacco, toiletries, stationery, and indent purchases by members. The first annual turnover in 1922 was £303; it exceeded £2000 in 1950. Many amenities were derived from profits, notably billiards tables and other recreational equipment. The canteen did business for 32 years in a transformed lavatory unit at the back of Ivey Hall, until the Students' Association, largely from its own resources including voluntary labour and aided by a board grant, was able in 1955 to provide a new building. The billiards tables derived from canteen profits were highly important for relaxation, especially so for the directors—R.E.A. and E.R.H. For each of them J. W. McLean was a worthy opponent, in the first instance as a junior, in the other a senior colleague. McLean with his subtlety and greater skill, conceded points with a discretion that enabled the older men to believe their skill was not declining. The assistant registrar (finance) was astounded to be informed (1975) that he was standing in a part of his accounts office where a bull had once urinated. This was in 1940 when W. Hudson and A. L. Burton, finding nothing better to do, brought a great Shorthorn bull into the common-room (later the accounts office) where two of their fellows were playing billiards. “Jake Schmidt was leaning over the table preparing to play a shot into the corner pocket, when he looked into the brown and slippery muzzle of the bull; this player thereupon fainted. As the bull was taken out he paused to relieve himself, which led to the suggestion that he was disillusioned through having to watch such poor billiards.” (G. B. McLeod).

Rugby football started strongly at Lincoln and continued so. For some years from 1905 the team went on tour, as far afield as Palmerston North, Wanganui, Te Aute and St. Patrick’s, Wellington. The teams soon outgrew secondary school standards, and it was recorded (June 3, 1912): “The team left on southern tour, stayed at the Leviathan Hotel, Dunedin, and visited Taieri; had a stock-judging competition which was won by A. B. Martin. On Wednesday played Otago University (won by Lincoln 8-6). Left for Ashburton, visited Longbeach, Friday defeated Ashburton Old Boys 25-3. Returned by train Saturday night. Total expenses each £3.15.6”. The college team and many staff, as officials, contributed to the progress of the Ellesmere sub-union, and until their translation to the Canterbury Rugby Union (p. 291) the senior teams were grade champions in 16 years, the junior in 8 years. Country football
did not stop the most talented players reaching provincial or national distinction. While within the jurisdiction of the E.R.S.U. 23 college players became members of the Canterbury provincial team and 4 of them All Blacks. The staff followed the teams with intense interest, but coaching was minimal. Alexander was a well-recognised figure on the sideline. Often groups of district supporters took up a position nearby, with the idea of irritating him by disparaging reference to his team’s methods. In some years, with three teams amongst 50-55 students, practically the whole college was engaged. When the college was playing old rivals like Southbridge, Leeston, United (Springston) or Waihora, there were large attendances. Sometimes the playing surfaces were rough. In 1908 a club entry said it had been decided “to have the young bulls removed from the football field and kept off for the rest of the season”. The end of a game at country hamlets was afternoon tea supplied by women supporters of the host side. The tea and cakes were followed by short speeches, sincere in appreciation of the game, the referee and the refreshments. There were no showers until return to the college, then an evening playing poker with others in a cosy study. Rugby of that vintage, with no ambulance men and rare serious injury, is now only a memory for old men.

Cricket was of comparable order, the college team gaining some good players from the schools. The playing season in the Ellesmere district competition was confined to pre-New Year. During January and February all sport was suspended for the college crop harvest, then dependent on abundant man-power rather than, as now, on few men and huge machines.

The end of harvest work was the recognised occasion for a combined sporting and social event, the swimming sports and harvest concert-dance. For the swimming there had been no training, but everybody who could dog-paddle took part in some event; the egg and spoon race or the pillow fight on a horizontal pole would suffice.

One difficulty for some was to obtain a garment, for apart from the actual sports afternoon, swimming trunks were not used. The swimming baths, now improved and fully provided with water-hygiene controls, were originally excavated and partly concreted by students. The 1908-9 students worked hard to provide this community asset. During his visit on a very hot summer day in 1949, Anthony Eden (later Lord Avon) accepted an invitation to cool off there. He was told that the baths were used by students, as the need warranted, to throw in any of their fellows, fully dressed, who had incurred displeasure, failed to conform to the unwritten codes or, more rarely, if they looked in need of a wash. One of the
most substantial sports relics is a handsome challenge shield (relay and water polo) given in 1909 by two former students, E. H. Beamish and L. R. C. Macfarlane.* The harvest concert after the swimming sports, occupying about an hour with original items and sketches, gave scope for the wit and humour of each year's funny boys, who were as adept performers in costume as on the farm or in lecture room. During World War I, students had been used in Red Cross concert parties that visited various centres to raise money for welfare funds. One group titled "Pierrots" (1919), "Buffoons" (1920), included R. E. Tolhurst, G. R. Cracroft-Wilson, A. W. Cargill, R. McMillan, R. C. Smith, J. H. Pennycook, F. G. Jones, H. E. Pearce, A. H. Partridge, and L. W. McCaskill. They were bold enough to give public concerts in four district centres, also at a Christchurch cinema after the film performance. They also went to Timaru and Ashburton, "having no difficulty in filling the first two rows of seats, thanks to doorkeepers and reporters", according to the college magazine.

The tennis and golf clubs conducted competitions within the student body. Golf had been played spasmodically, more or less as stroke practice on farm fields. Lowrie had strong views, though, on how the Sabbath Day should be used, and E. H. Beamish and his friends were told to stop playing on Sundays. Between 1930-4, golf was popular and the standard of players like P. H. Davies, W. S. Allan, J. W. McLean, I. L. Elliott, was high. R. E. A. also played. The club was affiliated to the N.Z. Golf Association and through student effort (the benevolent administration providing equipment) a good six-hole course was laid out, incorporating the original football and sports fields and part of the farm (horse paddock). The fairways are now beneath massive buildings. Boxing had a burst of support, flourishing from 1910 to 1913, and in 1930 to 1933 when a professional instructor was engaged and an annual tournament conducted in the open air, refereed by the late Dr A. M. Hartnell, a former university blue. The student bouts displayed prodigious energy and vigour but little finesse.

Sports day was a great occasion and nearly every student took part. It was also a notable social event. The sports were held in the spring and there was, with good weather, a beauty in the setting of


Ivey’s sports field (now under Hudson Hall and the library) with its perimeter of unfolding foliage of oak and poplar. Intense pride was taken in preparing the field. The running track was marked out by the engineering and surveying instructor and for 10 days beforehand was given careful attention. The turf was mowed daily. Practically every staff member served as an official, and notable citizens, some former athletes like Charles Thomas, an eminent barrister, assisted. In general, every able-bodied student would enter in some event. Over the years some very great athletes performed, as the record book reveals. Long-standing athletic records were those of N. M. Orr, 1895, J. T. Chrystall, 1907, M. M. Cowper, 1914, E. W. Kerr, 1927, A. Newman, 1929. There was none greater than V. P. Boot (1934-5), who won every open event from 100 yards to one mile, also the annual cross country which each year attracted the entry of every fit student. In one 220 yard handicap race when a bunch of limit men endeavoured to block Boot near the tape, he was heard to shout: “Get out of the way you great bunch of———”. Boot was the first Lincoln student to run in a university tournament, (as an honorary member of the C.U.C. team) as were several other outstanding athletes later, like R. G. Ball, B. K. Cameron, R. P. Pottinger, B. J. P. Ryde. In 1936 Boot represented New Zealand at the Berlin Olympic Games. The college sports included contests in sheaf-tossing, old students’ and visitors’ races, an extraordinary obstacle race, a tug-of-war which engendered inter-class fervour. The concluding classic was a draught horse “Derby”, a dozen of the less temperamental draughts, ridden bareback by selected students providing a strict no-gallop, double circuit of the track, which so churned up the perfect turf that it took a year to recover. The sports came soon after the football season and most were in trim, ready to have a go. A. T. Carroll (1910-12), later Sir Turi Carroll, for instance recalled that he had never won a sports event. In his determination he planned things so that after a season’s football, including playing for Canterbury, he was fit and, to the amusement of his mates, he entered every event in the sports on the assumption that he must get a place in something, and so he did. He won the long jump in 1911 never having jumped before.

Handsome silver trophies had been acquired for all events, several of them of a family commemorative nature. No-one now knows where these substantially valuable trophies are. They at least deserve a place as relics. Some of them had 60 years of names inscribed on them—really listings of honour, of men who competed as athletes, made a mark in life and have passed on. For all this sporting activity, not only in the athletic events but also for champ-
ionship success in other games, the Students’ Association provided winners with inscribed pewter mugs in addition to the trophies. The most accomplished had up to two dozen mugs after a two or three-year stay, but most managed to earn at least one. They are all anachronistic now, as are the blue velvet rugby caps with gold braid and tassle, mementoes awarded at the season’s end.

The athletic sports attracted an attendance from the province, district and city. The girl friends were present. In the evening there was again a concert, usually better than the hastily-prepared harvest function, and then a dance. For some days after the sports there was an atmosphere of deflation; movements and spirits were sluggish.

The Ball was an even greater event in the social calendar. This function in mid-July was always enjoyed by students, staff and a large cross-section of the community. The decorations transformed the place: a conventional reception hall at the entrance, greenery and coloured lights in the next corridor, horror galleries and traps to induce feminine shrieks, streamers and wall posters in the south corridor, more greenery and J. Russell’s (gardener 1929-45) renowned Cineraria display leading to the hall. How the regular attendance of 500 people were accommodated in the Memorial Hall is impossible nowadays to imagine but in fact they were never all in the one place. The students introduced their girls to the director’s wife, then darted off to the studies, also decorated, so that the College was host to scores of separate parties. Couples made a token appearance at intervals in the hall or supper rooms. The affluent had their formal evening dress, those who had none hired it. The girls were all provided with dance programmes—gold painted cards with pencil attached (rarely put to use). This ball in some strange way became a feature of the social season in Canterbury. Although liquor was there, it was inconspicuous, this being a period when young men tended to drink only intermittently, bearing in mind that one must be able to stand in front of Mrs Alexander and converse intelligently, even though one’s eyes were closed under the strain of standing like a guardsman while Mrs R. E. A. inquired: “Where have you been all the evening?”

The Alexander family grew up at the college, and in 1935 there was another social event, unique at that date, when Mary Alexander was married in the Memorial Hall to David McLeod (p. 48), attended by three former students, B. N. Thomas, W. D. Westenra and N. O. D. Alexander. The couple left beneath a student archway of farm tools and showers of wheat as confetti. (The college happily retained this link with the family during the McLeod's occupancy of Grasmere high country station at Cass.) The Students' Association executive attended the wedding reception, held in a great
marquee in the grounds. Cider was given to the rank and file elsewhere, but they were all guests at the post-wedding dance. There were some rascals in the community who burgled in a modest way the director's cellar. The wedding of Elizabeth Burns also took place in the Memorial Hall, and when the refectory organisation reached its present high standard of catering, the wedding receptions of other children who had grown up happily in the staff-college community were also held there.

In 1931 Lincoln entered the university students' capping procession in Christchurch. The Lincoln floats were among the most creditable, or least discreditable. Small piglets were lent in 1933 by a benevolent stockman, but in the characteristic irresponsible capping day exchanges, one of the piglets escaped in Cathedral Square. It was retrieved by an enterprising citizen who retained it for some months, until he decided it was more of an embarrassment than advantage in his back garden. It was returned to the college in an emaciated condition compared with its fellows.

In intellectual pursuits among students there was some progress. Wild had identified himself with the first degree students between 1918 and 1920 in the nature of a forum (Saturday Night Club). Participants like P. W. Smallfield, J. W. Calder, L. W. McCaskill had said that this was a vocational and intellectual aid to those who were to become the nation's first professional agricultural teachers and scientists. R. E. A. regarded this detached group with suspicion, and would ask Wild: "Well, and what has the secret society been talking about now?" It must have been a worthy and beneficial activity if the 1920 programme was typical. Starting the year with a dinner in the city, they then met fortnightly, addresses on agricultural and general topics being followed by discussions. This club did not survive Wild's departure, but the Degree Colloquium and Diploma Clinic Club served similarly between 1932 and 1936, the former guided by E. W. Hullett, the latter by Allan Leslie. Individual contributions were of high quality. Some presented for discussion results of original work they had commenced as masterate students, but extra-mural subjects included silver-fox farming, vitamins, rubber, cranks, John Ruskin, lion-hunting in Africa, and the art of love. These societies disappeared with the onset of ready-made entertainment.

Culture in the accepted sense did not consistently thrive, and attempts made to interest students in it were deplorably unsuccessful. Once an eminent overseas pianist was induced to give a recital in the hall, at a nominal charge. He came on the assurance that he could expect a good house, appreciative of light classical music. Three students attended, together with nine staff members and their wives. The pianist was furious, the hapless organiser mor-
tified, and nothing of this kind was attempted again until recent years, when in a different climate of musical appreciation there was success. There was a period when eminent Canterbury College men came to Lincoln on a rostered programme to give extracurricula lectures. Some of these were of highest intellectual quality, like those of Dr (later Sir Karl) Popper, but student participation was only fair and the plan languished.

The relationship between students in class and lecturing staff was generally one of mutual esteem and cordiality; with farm staff it was entirely so. Competent lecturers were praised; those who were mediocre, pompous or overbearing, provoked reactions. Leslie's habit of darting about as he expounded was checked by sprinkling sugar on the floor and for a time he remained stationary. He made his students writhe under the cuts of his sarcasm and asperity, but his lectures were vital and not the second-hand stuff from any predecessor's book. Lecturers who could not overcome a shy or nervous manner tried to improve attentiveness by resort to other teaching aids. One of these was a pioneer in the use of visual aids and prepared illustrations for overhead projection, but he lost enthusiasm when the student assistants projected illustrations from the equivalent then of the "Playboy" magazine. He was to learn from his students that class instruction was often not easy to translate into practice. When his car would not start he in characteristic fashion checked for faults, A. to Z. in the manual. While he was so engaged, Dick Fougere, the farm manager, who knew and anticipated every student trick arrived on the scene. "Car won't start, Jimmy?" Fougere thereupon removed the potato from the exhaust pipe and, without revealing the cause, said: "I think she will go all right now". In this long period of happy rapport between students and staff who worked and lived in close relationship, the senior men were known only by nicknames or personalised abbreviations—Hilgy, Torchy, Scotty, Jimmy, Shirty, Trotsky, Bucky, Albie, Montie, Sharky. As numbers of staff and students began to increase and personal relationships declined, this system was abandoned.

So we conclude that during a period when the college was being judged adversely and critically by some of the public at large, and by bureaucrats and national policy-makers in particular, as a place in need of reconstruction, student life was of a particularly happy order. Theirs was a well conducted integrated society. The evidence is that the men who came through that first period of C.A.C., ending in 1935, were successful in life in diverse occupations. When a question was put to them "40 years on", few disputed that it was a high point in an enriching, human experience. And that was the objective that R. E. Alexander had given his service for.
The income from the Lincoln farms was vital to the finances of the college. At the end of his stewardship, Alexander, through his lieutenants, controlled a farm of just short of 1,000 acres, plus Ashley Dene (870 acres) seven miles away on the dry-land Burnham Plains. This was a very substantial holding in a locality where few farms exceeded 400 acres. Neighbours and passers-by are still inclined to look critically at the condition and utilisation of college farms.

Alexander’s policy was based on a British tradition of arable farming for quick cash return, with a balance of crops and livestock to maintain fertility. He was no innovator, nor were his farmer friends who then dominated the board. It has been shown that the accepted purpose of the farm was to furnish a training ground in farm practices for a limited number of students; they were an elite corps. During a quarter of a century there was no extraordinary agronomic development on the farm, outside the specific researches already reviewed. If one now asks, “What was the accomplishment?” the answer could only be that sheep studs comparable with the best in the land were developed and the value of tree-planting for farm purposes, and of concrete for use in farm structures was demonstrated. The dry-land farm remained a near desert of poor pasture and stones with no plan of fertility building or renewal. Its function was to carry as many sheep as possible on winter rations, as a beneficial change from the heavy Lincoln swards and to provide cultivation by horses for students in training.

Times became hard, with wool prices less than 12 pence per lb. and wheat 4s. to 5s. per bushel. Farm sales plummeted from above £10,000 (1928) to £4,200 (1933) and the over-all college accounts went into debit in 1928 and continued in the red for 10 years. This situation at the outset was disastrous, for though capital and research grants were continuing, the main source of revenue for development had been the farm. The present generation may not
comprehend how the depression (1929-33) affected life in general or at the college in particular. An annual substantial loss was shown in the farm balance-sheet and the Ashley Dene account was worse. Staff who now receive regular salary increments may note that in 1932 all salaries were reduced by 10 per cent. One newly appointed staff member (H. J. Geddes), an excellent man in his job, saw his salary reduced annually until he had to find a new position.

In 1932 student bursaries were cut by 50 per cent. There was, however, no reduction in student entry in the depression. Some young men who could raise £50 came to the college because they could live and learn there more cheaply than they could elsewhere. There were numerous student and parent applications for deferment of fees, and in 1934 the board was compelled to seek relief by passage of an Amending Act which was an overdraft bill, authorising borrowing (for the first time). The limit was £10,000 with a liability clause on board members for over-borrowing. Tenants of leased endowment properties sought rental reductions of as much as 50 per cent, and despite its own situation the board was generous. They also influenced mortgage adjustment proposals to help continuing land settlement by old students and farmers generally. Special instructional courses of two months were provided for unemployed youths. Many men who later farmed in good times have testified to the help given them by the college during these bad years.

The farms began to show the effect of a struggle to make ends meet; they became unkempt and rundown. An intolerable strain fell upon the long-serving director. A pleasant function in 1934 had honoured his 25th year of service and the Governor-General, Lord Bledisloe, invested him with the C.M.G. His accomplishments were acknowledged. These included the doubling of teaching staff, provision of new buildings, increase of the area in use, improvements in course structures, attainment of university status, and though the necessity had irked Alexander, greater stability through government assistance. Hilgendorf in 1934, said he wished to retire and in November, 1935, he had left the college, without the honour of an appropriate farewell because of the internal upheaval which had then developed. Moves by the board reflected their dissatisfaction with the condition of the farm and some uneasiness about internal discipline affecting some staff and students. The farm committee had become critical in its reports, for the director had shown a reluctance to accept some ideas and proposals. For instance a board member, H. S. S. Kyle, M.P. returning from an Australian visit highly impressed by the virtue and benefit of subterranean clover, had tried in vain to persuade the director to introduce this
THE SEED THEY SOWED

Plant into the depleted Ashley Dene. A few years later this annual clover was to transform that dry-land property and many acres of similar country. The disciplinary difficulties were more involved but came to a crisis after several board decisions. The director's engagement was to be terminated at the end of 1936, after twelve months' leave of absence (on full salary £1200) from the beginning of that year. A special meeting of the board held at the chairman's residence resolved that as certain information had been received concerning planned serious disorder at the projected end-of-year ceremony, the director should be held responsible for breaches of discipline; the ceremony of presentation of diplomas should be held in Christchurch; a senior staff member who had become unwisely involved in matters relating to a board election, staff appointments and student attitudes, should be suspended and required to vacate the premises within 24 hours. Those who lived through this palace revolution were amazed to find plain-clothes police picketing the grounds on the night of the end-of-course dinner, December 16, 1935. A garbled account was featured in a national weekly. The departure of the director and his wife who had given the best of their lives for the college, saddened everyone. He was aware of the forces and circumstances that had engulfed him and probably became reconciled in the thought that the merit of 26 years as the head of C.A.C. remained in the minds of old students and associates who really came to know him. On first impression he was dour, brusque, rather intolerant of those who did not accept his views or direction and not impartial in some of his relationships. The human insights revealed to students were unknown to many beyond the boundaries of the place he loved. His manner often screened an innate perception and sensitivity. He wrote to one who had remonstrated with him on a personal issue: "Your views have become cramped, hence your attitude to others. You will find later that each individual has his or her own troubles and doesn't give the thought to others you imagine. The way to create good fellowship is to exhibit good fellowship. Try it and you will find you can make hosts of friends. Adopt the other attitude and you become a living example of the outcast portrayed in the Scriptures ..." Of the college leaders he was the only one referred to as "the Old Man"—This was not because of age. It was recognition of his unchallengable authority, like that of a ship's master. The students would trick him if they could, accept his discipline when they failed, and rely on him in personal emergencies. The appellation was appropriate, in demonstrating the awareness of students that beneath the dour manner there was a sense of humour that aided and complemented his tolerance and justice in ruling the affairs of
the integrated college. Alexander had an uncanny knack of arriving on a scene just as something was about to go wrong and his unexpected arrival either unnerved pranksters or embarrassed others. With Irish complacency he would then say, “I knew it would go wrong”, or “I told him so”. This prescience also typified Alexander’s successors when the institution was paternal in government; they instinctively kept pace with, or were not far behind, most of the designs of students. Dick Fougere, farm manager, recalled: “There was a momentous occasion when R. E. A. was taking a majestic turn in his car into the stableyard and hit a gatepost fair and square. The working students had assembled at 1 p.m. ready for work. There was a deathly hush, no comment, suppressed jubilation, but no-one had the nerve to say what was in their minds: ‘I told you so’. I was driving the traction-engine through the same gateway, when something distracted my attention and I finished up with the engine funnel sticking out of a mass of crumpled iron of a shed roof. Of course, R. E. A. was walking down the drive only a few yards behind and I heard him say, ‘I knew it would happen’.”

The Alexanders lived in retirement in Christchurch for 10 years until R. E. A.’s death in 1946, and that of “Mrs Bob” the year after. After his death, the Old Students’ Association erected a commemorative tablet in the Memorial Hall, appropriately placed alongside that of his friend and supporter, H. A. Knight. A project to commemorate the Alexanders in appropriate form was initiated by Allan Leslie and he established a fund with a personal donation, which was augmented by old student contributions and the college board. In 1960 the Alexander Memorial Entrances of high crescent walls in brick, with sandstone facings on the pillars, were dedicated. In acknowledging the family’s appreciation, N. O’D. Alexander (Dip. Agr. 1929), Onewhero, quoted some lines from Cicero “De Officiis” Book 1, 151, and the governors accepted Niall’s offer to meet the cost of two plaques, one bearing the quotation, the other the translation which reads: “This is nothing better than farming, nothing more rewarding, nothing more congenial, nothing more befitting a freeman.”

In the spring of 1935, when the board deliberated on the pending retirement of Hilgendorf and their intention to enforce this also upon Alexander, the plan was for two new professorial appointees. One should be the director (principal) to be responsible for over-all administration. The other, designated warden, would reside within the college, with responsibility for residential organisation and academic development. This move was not implemented when it was unofficially intimated that the man intended for the warden-
ship was unlikely to be confirmed as a professor of the University of New Zealand if the vacant chair was not internationally advertised. Consequently, arrangements were made to seek a new director only, one who would also meet the university’s requirements as a professor; meanwhile, the second Lincoln chair should be listed as vacant. Hilgendorf, after a few weeks’ retirement, accepted with reluctance the invitation to return in 1936 as acting director—an unenviable situation. A number of key members of the staff had departed, Leslie, McLean, Fougere, Scott, not all for the same reason, and no doubt as a consequence of adverse publicity, diploma enrolments for 1936 were halved. Temporary arrangements were made for management of the farm and the only new staff appointee when the year began was I. D. Blair.* A Hilgendorf-Calder hybrid, designated to assist the latter and “with duties as housemaster”, Blair was the last, with D. R. Muff, H. E. Garrett and G. B. McLeod, of the lineage of junior staff members on whom, being unmarried, these additional duties were imposed. Such duties were multifarious, from supervising dining-hall behaviour to putting out corridor lights at night. They had little privacy, had to take their chance with the student rush for bath or shower, had no schedule of duties, but there seemed to be an expectation that they would, in their own way, manage to control or prevent unseemly outbursts from the seams. The housemasters who had been students knew the tricks and trends; they made mistakes but broadly they did good work and were in harmony with the students. The bonus for this work, which included also functions that are now recognised as career advice, was a concession of two-thirds the normal charge for board and residence.

Hilgendorf was casual in attitude towards administrative matters but he drew upon his genial and extrovert traits. At one stage he extended an invitation to the junior resident staff member to “have a look through that pile of documents on my office desk and tell me which of the applicants you think the board might appoint as director of the college”. The year following the traumatic shock and upheaval turned out to be one of happy placidity. In musical terms the tempo was andante after allegro furioso. Behaviour codes and work and play patterns that had become traditional were retained unimpeded.

Despite reduced numbers (47), students had no cause to restrict their activities which were normal with one addition—the Alpine Sports Club. O. H. Frankel,* whose work was then at Lincoln, lived at the college. It was Frankel (still an active skier in 1975) who guided a staff member in organising this new activity. Purchase of expensive equipment resulted from an uproarious money-raising venture, euphemistically called the “Snow Ball”. The young club continued sponsorship of this function for several years, until it became too difficult to organise and control. Meanwhile, money had been raised from this enterprise. Encouragement was given by the Christchurch Ski Club, with whom the Lincoln group was nominally affiliated for 15 years, allowing the use of the mountain huts at Arthur’s Pass. There, joyful occasions were held, notably the annual August vacation expedition, when upwards of 30 students and staff had the hut for one full week. In the era before coaches skiers were largely self taught. It was a period also before fashions in ski clothing, thus nobody scorned then the predominance of football jerseys or farm boots with a screw in the heel to secure the ski bindings. Evenings in the alpine hut were devoted, in order, to eating, drinking, card playing and merriment, most evident after lights out. It is a pity there were no tape-recorders then, as some best-seller tapes could have been made: the night the kea came in, for instance. Tap, tap, tap it came through the door, left open for ventilation. Someone managed to slam the door, catching the curious kea unawares, an unwilling occupant of the now noisy hut. In alarm, it took wing, landing here and there with telling effects of its talons on recumbent forms trying to hide beneath blankets. The cries of the kea in the uproar of the hut, mixed with advice and counter-advice as to what to do, have probably not been heard before or since in a mountain hut. The kea eventually died, from a sharp blow with a ski stick by one who said he “wanted some of these feathers for his fishing flies”. These student expeditions enabled young men to discover their strength and weakness.

The first N.Z. University ski tournament was arranged by Lincoln students in 1938, with R. D. Dick (1935-8) and D. V. Gordon (1936-9) in charge of plans, the venue being Temple Basin. Later, R. S. Whitehead (1946-7) made a trophy with silver devices on a wooden shield derived from polished, now obsolete, half-crown coins, and on this club trophy is the name of the only great skier Lincoln had, H. E. J. Familton, who became a member of a New

Zealand group of skiers in the Winter Olympics, Oslo, 1952.

During the August ski week of 1936 the announcement was made that the new director was to be E. R. Hudson,* selected at the age of 41 from 28 applicants, among whom his closest contender was his brother, A. W. Hudson. He arrived in November with his wife and four children and Hilgendorf was able to return to retirement. He retained his irrepressible activity of body and mind, for in 1937 he joined the board of governors and served five years until his death in 1943, during which interval the council of the School of Agriculture (p. 111) also benefited from his wisdom and experience. To commemorate the service of this extraordinary man, the Old Students' Association in 1945 established the Hilgendorf Memorial Lecture, as well as providing a commemorative plaque in the Hall. The inaugural lecture, appropriately delivered by L. J. Wild, reviewed the life and times of Hilgendorf. To date, three further memorial lectures have been delivered. When it was decided in 1968 to confer a name on the centre that provided for most of the teaching and research interests of the greatly enlarged college (p. 191), the generally-held view that there was only one name that could be considered was upheld—Hilgendorf.

With the departure of Alexander and Hilgendorf, the former with 26 years, the latter with 44 years of involvement, an era closed. Dr. K. G. McIndoe, Firestone Company, Liberia and U.S.A. (Appendix 4), notwithstanding the breadth of his academic and professional experience after leaving Lincoln, said of it: "I believe we lived through a golden age". If true, such sentiment did not deter Hudson, whose initial appraisal revealed need and opportunity for reconstruction and development.

CHAPTER 8

Progress Through State Financial Support

In 1936 Canterbury Agricultural College had only 33 students in the diploma course and 14 in the B.Agr.Sci., none at masterate level. Ten years later, these course numbers had doubled and with three new courses, 229 full-time students and 440 on regular or special short courses, made a total college of 669. This was the first major acceleration of growth since the foundation. There were staff appointments of utmost significance before this development. Hudson lost no time in drawing back to his side his associate in Tasmania, R. H. Bevin, for whom he had designed a specific role, and who with C. P. Tebb (p. 84) was to be closest in accord with the director. Also, in 1937 M. M. Burns (p. 180) was appointed to the lectureship in soils, aided from 1938 by A. F. R. Adams (p. 118) as an analyst who had also assisted Franklin similarly, before the departure of the latter for Australia. McLean had returned from Sydney in early 1939 with a veterinary qualification and took charge of that subject, and animal husbandry was strengthened by the appointment in 1939 of P. G. Stevens. Stevens, though not a research man, had a tremendous fund of livestock lore with which over the years he was able to influence his younger colleagues, McMeekan, Coop, Hart and Hollard. He also passed this livestock lore on to the many diploma students, and it is said that in lectures on breeding he would start with race-horses, pass on to pigs, sheep and cattle, and end on breeding roses.


The second professorial chair was still vacant but it had been decided that the appointment was to be in animal husbandry, and this was accepted in 1940 by C. P. McMeekan.

There were no departments in 1939, lecturers still being listed according to subject interest or responsibility, 10 of them. Hudson decided that a senior appointment was necessary to bring about long-overdue reorganisation and control of administration. J. A. S. Kirkness* was appointed registrar, and thus the registry was founded. Early directors had had to attend to book-keeping and accounting, aided on occasions by lecturing staff. Board minutes had long been kept by the director or acting director, written in longhand. Early volumes show the copperplate script of Ivey and Gray, the yeoman hands of Lowrie and Alexander, the free-flowing style of Hilgendorf. The first full-time office administrator had been O. B. Pemberton, who later became secretary of the Canterbury A. & P. Association (1900-20). For years, accountancy and recording were incidentally done by director, farm manager, matron, lecturers or clerical workers. One of the latter had to reimburse the fund by £10. It was not dishonesty but according to the audit inspector’s report, an error made through “lack of knowledge of accounts”. Inevitably there was trouble for at one stage the auditor disclosed a defalcation in excess of £400. Someone went to gaol. F. C. Roberts, from the Indian Army, held the position from 1925-28, but he was frequently in conflict with Alexander, and when he found himself in the unexpected position of returning officer in a board election in 1926, his casting vote made history (p. 61). For reasons unknown, his position soon after was summarily disestablished. It is remarkable that in 1935 the director together with P. E. Allan (accountant) and Mrs E. R. Batchelor, managed to do the clerical work, even though it was much simpler in those days, and there was less of it.

Having established a property, administration and academic structure, Hudson then introduced his first course-innovation. It was designed to teach students who had the requisite pre-entry experience the business and managerial aspects of agriculture, and it was for that purpose that he had given guidelines to Bevin. The one-year course incorporated seven subjects, with most weight on valuation, farm management, agricultural law and economics, and

was offered to post-graduates or diplomates, or to others who possessed experience of equivalent value. An objective was to produce qualified people to serve in specialist positions in farm management and rural valuation and administration, particularly within the Government service. Twelve applicants were selected for the foundation course (1938), and 16 in the following year. There was inspired thinking in the early planning, including the integration of the course with a rural field cadet scheme that ensured support by state departments, both in finding suitable men and in their placement on qualifying. The State Advances Corporation and the Valuation Department were specifically very impressed with the plan of Hudson and Bevin and under the direction of Herbert Caselberg the R.F.C. selections were initiated in 1941, 16 men succeeding from 80 applicants.

The Rural Field Cadets were an elite group, because of the large numbers of men who were attracted to a course leading to an assured career. Selection was made on scholastic and athletic ability, and leadership attainment or potential, and the consequence was that when those selected began to come forward the student body benefited. The State, in fact, paid for the rural field cadets to be trained and also provided a personal allowance. Discipline was, however, imposed: a pre-Lincoln, three-year period of directed practical work on several types of farm; a short course (dairy) at Massey; a preliminary (intensive) course at Lincoln, followed by the V.F.M. year (five years in all). The successful were then directed to a government department concerned with the supervision of land. Other students, on self-support, were also eligible for public service employment if they so elected. The conspicuous quality of this course also resulted in inducements for such diplomates to join commercial organisations, private enterprise or farming. Defections tended to occur to jobs more profitable than those offered by the Civil Service. This tendency was checked by bonding students, first at a figure of £100, but raised successively until at £1000 few rural field cadets were disposed to write off the bond against a period of service in a state department. The R.F.C. aspect of the course was administered by the Public (State) Services Commission. By 1972, however, the V.F.M. course had so evolved as to attract large numbers of students able to meet the high standards of pre-entry required, and without need to accept the dictates of the R.F.C. scheme. The State departments were then able to obtain their recruits, as adequate numbers of V.F.M. men, as well as graduates from other courses, were induced to join the departments. Allied to the V.F.M. for 18 years was the intensive (8 months) course, instituted in 1944 and which continued until
1961. * It aimed to concentrate the substance of the diploma instruction, and for R.F.C.'s it was their fourth year before entry to V.F.M. It was open also for men of considerable practical experience, generally older than the normal diploma of agriculture entrant and in a greater hurry to obtain agricultural expertise. These two courses, devised before World War II began, caused the upsurge in enrolments in 1938, this momentum reaching a peak and levelling off 36 years later. The training embodied in the V.F.M. course was first envisaged as leading to an alternative degree to the B.Agr.Sc. Hudson had concluded, however, that the course should emerge as a diploma of the college and thus avoid delay in the inception which he had come to expect in proposals that were required to go through the university system—School of Agriculture with likely delaying or counteraction by Massey College, the Curriculum Committee, Academic Board, University Senate. Hudson reckoned that at least two years would be required to get the proposals through this processing and though the standard of attainment to be required from V.F.M. students was deemed equal to that for the degree course, the chance was taken that the new course would succeed at student and employer level, without degree status. The course succeeded even beyond expectation, but 35 years after its foundation new circumstances and influences were to result in the V.F.M. becoming incorporated with a university degree (p. 246). After 25 years, 460 students had entered upon this course and 380 had been awarded the diploma V.F.M. A survey of their employment in 1963 revealed the following:—

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<td>Lands and Survey Dept.</td>
<td>16.8</td>
<td>Commercial firms</td>
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<td>Valuation</td>
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<td>State Advances Corpn.</td>
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<td>Maori Affairs Dept.</td>
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<td>Econ. Serv. Meat and Wool Bds.</td>
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Assessments of the quality and results of Hudson's leadership must allow for the difficulties encountered during six years of World War II. Enrolments plummeted between 1940 and 1942 (there were no V.F.M. admissions 1941 to 1943), but thereafter numbers increased as demobilised men entered the college. The staff, both farm and academic, was cut back to a basic work force. In January-February, 1941-42, the few remaining academic staff

* From 1962 to 1966 this type of course was changed to a Certificate in Agriculture, but then lapsed.
were helping with the grain harvests. The impressed workers included on occasions registrar Kirkness's only two typistes—Audrey McKay and Eve Farmer (whose husbands were serving in the Air Force and Army respectively). They were mixing and bagging fertiliser and on one extremely hot day after this strenuous dusty work, a dip in the college baths was proposed. Mrs Farmer had no swimming costume and though costumes were never used in those times by students, in her case some sort of covering was necessary. She improvised with a new grain sack, with apertures cut out for her legs and the top held at her shoulders by two nails. Emblazoned across her breast as she dived into the pool was the sack label, "Mother seed ryegrass".

Those on active military service were L. Curno, J. M. Steeds, D. R. Muff, V. Russell, H. E. Garrett, R. J. Lancaster, G. B. McLeod, E. P. Wills, while others (I. D. Blair, A. F. R. Adams, I. E. Coop) were absent for the duration on special war-time duties. The board (council), with its tradition of generous attitudes to staff, supported these members while they were away. Appeals against general military service were lodged on behalf of Calder, Bevin, Burns, Flay, Tebb, the board claiming they were indispensable for retention of the college basic services. Some of the remaining staff were mobilised for home defence, others served part-time in an archaic but dedicated unit, the No. 8 Troop, Independent Mounted Rifles, sometimes known as the Hill Billies. Lieutenant I. W. Weston (Military Medal World War I) was a troop leader, with Calder, Burns, Bevin, McLay (farm manager) among his troopers, while Blair on return from study leave, with a Ph.D. qualification that puzzled the Military, was for a short time the only conscripted soldier in the squadron and attached to headquarters. With their ancient horses and cavalry accoutrements that several did not know how to handle, the unit would not be listed in Allied military histories, but had the Japanese attempted to land in the region patrolled by the I.M.R. every member (the other three troops comprised Banks Peninsula farmers) would have died with boots on and outmoded rifle in hand.

Old students of the college were in the advance echelons of the New Zealand citizen army. For the third time, young men from the college who were just moving into careers, took up arms as soldiers, sailors, and in the 1939-45 War, a higher proportion than World War I, as airmen. They had not been preconditioned, as were World War I veterans who graduated from the College Military Unit (p. 50) but a unit had in fact been contemplated. The board approved an Army proposal that a troop of the Canterbury Yeomanry Cavalry should be formed at the college; horses to be
made available by the Defence Department which would bear the cost of their keep at £15 a horse. It was proposed to lease 29 acres from a neighbouring farmer for grazing. However, within the first week of World War II, Army H.Q. notified that it was not advisable to proceed "in view of recent developments and the need for the horses elsewhere . . .". Of the 1939 college enrolment, 90 per cent were to serve in the armed services. Volunteers went first and many who had been in mufti on September 3, 1939, returned five weeks later in Army uniform for the college sports. At the 1940 ceremony, 12 of the graduating diploma class of 16 attended in uniform. The 1941-42 diploma classes were almost completely dispersed—14 of the 18 in the 1942 class leaving for military service. Eight students were on active service within a month, and of one of them E. R. Hudson wrote to the officer commanding Burnham Camp, "A young man by the name of Upham has left the college to join your unit. I commend him to your notice, as unless I am greatly mistaken, he should be an outstanding soldier". Charles Upham* was one of the students in the last three-year diploma group and had worked on farms since then. In 1939 he was accepted in the second V.F.M. intake, aiming for his rural valuation qualification, which he duly obtained. His war service record and unique distinction of being twice awarded the Victoria Cross, highest decoration for valour, is now well documented. Modest, a legend in his manner of speech among friends, self-effacing and determined to avoid the publicity that his exploits attracted, Charles Upham was alarmed and embarrassed when the people of Canterbury wished to honour him. A large sum of money was given to provide him with a farm, but he firmly refused, and set about getting his farm within the rehabilitation requirements. Among his Army friends were several men returning to public life, notably General H. K. Kippenberger, Capt. A. I. Cottrell, Brigadier J. T. Burrows, who devised a worthy use for the fund that would serve the commemorative objective. This was the establishment in 1949 of the C. H. Upham Scholarships, tenable by sons of ex-servicemen on approved courses either at the University of Canterbury or Lincoln College and which by 1975 had enabled 88 young men to be supported in their studies.

When the war ended the overseas service of old students had been: Navy 14, Fleet Air Arm 2, Air Force 58, Army 153; commissioned officers 82; decorations 22; died on active service 40. The

names of the men are preserved on the Swedish granite tablets erected in the Memorial Hall by the Old Students' Assn., unveiled there in August 1949, by one who was close to many of them—Lord Freyberg, Governor-General.

During the first year of the Second World War there were few students and little activity, but from 1943 the pulse quickened as rehabilitation programmes commenced. In the ensuing six years, 700 returned men were provided for in another intensive (10 weeks) course, designed to prepare them for practical farming. In 1946 there were 246 thus engaged. These men lived at Burnham Military Camp, arriving daily by military transport. This form of war service by members of college staff, still restricted in numbers, also required them to produce instructional books under the auspices of the Army Educational and Welfare Service. In addition to the returned servicemen in the rehabilitation short courses, the proportion of those taking full-time degree and diploma courses increased.

The services of Burns and Stevens had been sought in 1945 by the United Nations Rehabilitation and Relief Administration (UNRRA) for advisory work in China but the board declined to release them, quite rightly remembering that they had been earlier claimed to be indispensable in the soldier rehabilitation work. The staff who lectured to the returned servicemen experienced a measure of stimulus, even inspiration, less apparent in lecturing to the normal classes composed of younger students, relatively recent from school. These returned servicemen had no time for, nor interest in trivia. Most of them had lost more than just six years through war and they had motivation in the fullest measure. Those who experienced the situation would agree that during the decade after the end of the war (1945) this ingredient provided life at C.A.C. with one of its high levels of vitality. Certain other features of what was a great decade, warrant elaboration.

(1) Influence of the School of Agriculture
The terms of the 1937 Act were expected to have considerable influence on the progress of the college and during the 14 years it was in force the Council of the School of Agriculture (four members each from Lincoln and Massey with a chairman from amongst themselves, or an outsider) endeavoured to implement Clause 14 of the Act, granting management of and superintendence over the affairs, concerns and properties of the country's two colleges of agriculture. The council was charged to co-ordinate the work of each, determine research and teaching policy, and ensure collaboration with State departments. Government appropriations and capital grants through the Department of Agriculture vote, not Educa-
tion Department as is now, were to be disbursed through this organisation. Most of the major property and academic developments credited to Hudson’s work had to be confirmed by this council. The first chairman was an outsider, Norton Francis of Christchurch, and the secretary for most of the time, J. Logie of the Canterbury University College registry. From the outset it was apparent that there would be difficulties derived from the constitution of the council which led to block Lincoln or Massey votes. In the first year each college submitted proposals for the right to establish a School of Horticulture though one would have served the country’s needs at the time. Ultimately, each college was authorised to develop this subject but as the limited funds available had to be shared, the birth at each college was fragile. There was provocation and open conflict in debate, when Massey members proposed that the bachelor’s degree should be presented at only one college, certainly not Lincoln in the Massey view. In the split down the centre, the chairman’s casting vote was required, whereupon an amendment enabled a proposition to be explored by a committee which found that it was not desirable to teach certain subjects wholly at one college or the other; Dr J. Hammond of Cambridge University whose opinions had been sought, concurred. There was provocative comment in the report: “Evidence had been submitted by a member of the committee that the head of a Government department finds degree students trained at one college of more service than those from the other, and doubtless further evidence could be obtained to prove preference to students trained at the college not approved by the first named”.

In succeeding years the council deliberated on student fees, in 1939 Massey £65, Lincoln £55 for diploma students; degree students at each college £21 plus board at 30/- per week. The members of the council seemed to be able only to act according to the guideline given from the home base. Hilgendorf in 1940 endeavoured, without success, to secure a revised constitution, providing for three representatives from each college, the other two to be members not connected with either college. Hudson also had thought of another avenue for improvement when he proposed (1942) that the School of Agriculture should be within the purview of the Department of Education, not Agriculture. This eventuated in 1944. The council of the school appears to have been happier when the members appointed chairmen who were not members of either college board. Sir Francis Frazer, Norton Francis, A. H. Cockayne and William Machin were examples. In Wild’s view the school fulfilled neither hopes nor fears; it made scarcely any difference, except that the Government could no longer refuse what one
college asked in case the other should also demand it; the school presented the demands of both together. Most of the deliberations of the council troubled Hudson a great deal, and in 1944 he resigned "through an unwillingness to participate in further meetings of the council as it is at present constituted". In discussing his letter of resignation the board was reminded that the principals of the colleges attended the School of Agriculture Council by invitation only, and it was resolved "if, therefore, Professor Hudson feels that he can serve the interest of the college by refusing invitations to attend meetings of the council, the board sees no reason for denying him freedom of action in the attitude he has adopted". Hudson said he would be prepared to attend in a consultative capacity when C.A.C. matters were to be discussed. Acceptance of this by the board was deemed to render Hudson's formal resignation inoperative. Hudson was aware of every bad feature and deficiency of committee control, but the practice of Lincoln and Massey leapfrogging over each other towards their share of Government grant was in the minds of others of shallower principle than Hudson, a good way of getting the best deal.

Massey wanted no more of the School of Agriculture and in 1949 proposed to the U.N.Z. that the School of Agriculture Act should be repealed, and that in any scheme of re-organisation of the University of N.Z. the existing relationship of Massey to both Victoria and Auckland should be preserved. The 1951 repeal of the Act was inevitable. A last-minute proposal by Lincoln for a reconstituted council was lost. Out of the liquidation, the University Grants Committee took over supervision of Government finances within the Colleges. The dying council's recommendation that the two agricultural colleges be given direct representation on the university Senate was granted in 1952. A proposal for an annual conference of the governors of the colleges and of the professorial boards to discuss matters of common interest was adopted. After a few years the arrangement was allowed to quietly die. Several years later Hudson said of the School of Agriculture: "It proved to be about as useful as a fifth wheel to a coach . . . when Lincoln submitted plans for expansion or development they were countered or filched by Massey . . . The Lincoln representatives consisted almost exclusively of farmers and retired school-teachers; excellent men in their own spheres but no match for the sophisticated business men and local body politicians who were typical of the Massey representatives. . . ."

Until this stage, academic staff had been grouped under subject title of lectureships with salaries by 1945 ranging to a maximum of £750 for the seniors and £1200 for the professors. The board
authorised Hudson then to define areas of interest as departments, led by senior lecturers. The director being one of the professors, Animal Husbandry in 1945 was the only department with a professorial head. Thirty years were to elapse before each department was headed by a professor.

(2) Emergence of Departments

The Registry

Kirkness had instituted administrative controls and services in an endeavour to justify the status of a university registry. He was aided by an incomparable group of women—Mesdames A. McKay, E. Farmer, N. Dalgleish and Miss J. Mahony. The latter has been the indispensable clerical servant of registrars and principals continuously since 1946. The office of accountant, established in 1946, was taken up by G. H. McEwen, a returned soldier, who was succeeded in 1954 by another returned serviceman, H. J. Walker. After six years he turned to politics as a career, and for eight years was a member of the college council. When Kirkness became registrar of Auckland University College in 1949, he was succeeded by H. G. Hunt* who was at the nerve centre of every development in the life and work of the fast-growing college for 27 successive years.

The following is an outline of the establishment of the academic departments.

Animal Science

The 1938 Hammond report on Organisation of Animal Research in N.Z. had proposed an Animal Research Bureau under the Council S.I.R. composed of three integrated institutes, with specified areas of responsibility—Massey (cattle), Lincoln (sheep), Wallaceville (animal health). Action was deferred during the war. Meanwhile Lincoln had in the person of McMeekan an animal scientist with outstanding credentials, destined to become the country’s leader in animal production and research. Initially he appears to have been happy in the prospect of leading animal research based on a university college, and he publicly deplored wasteful, inefficient methods of research control through State departments and the trend therein, likely to weaken Lincoln as a research centre. “The Press” in a leading article said that surrender of animal research to the Department of Agriculture by the Government which had previously

announced its intention of developing animal research at Lincoln, was a surrender to departmental ambition. McMeekan completed some important research at C.A.C. but the hopeful expectation of great things did not materialize, for two reasons. There was mutual disharmony between him and Hudson. This state was exacerbated when Hudson sold off some pigs that McMeekan had developed for a research study. In temperament and character they were contrasts and incompatible. Second, the Director-General of Agriculture, E. J. Fawcett, though a member of the council S.I.R. was determined that his department, having lost plant research to the D.S.I.R., was not going to lose any opportunity to control and develop animal research, the Department's units at Wallaceville and Ruakura providing the foundation sites. McMeekan was the key man in Fawcett's thinking and McMeekan, having become disillusioned at Lincoln, secured terms from the Department of Agriculture which culminated in his appointment (1944) as superintendent, then director of the Ruakura Animal Research Station. A few years later McMeekan's views had changed when in a radio discussion he said: "... I believe the universities have lost research because they have not been interested in research. For example, I don't believe the station with which I am associated, Ruakura, would ever have been established if Massey and Lincoln had done their job on the research side. It is because they weren't doing it and because the agricultural industry demanded work of the nature that we are carrying out, that stations like Ruakura were established. We have unfortunately got into the position where nearly all agricultural research is carried on outside the universities — yet these institutes (Ruakura) must have staff and we cannot get them unless some research is carried on within the universities". That viewpoint could be contested for Lincoln, as an example, lagged in animal research at that time only because public funds were unobtainable and a departmental head like E. J. Fawcett was favourably placed on the Treasury's doorstep. Ruakura under McMeekan and his successor, L. R. Wallace, who had been nominally on the Lincoln staff prior to war service, became a research centre of international renown. When McMeekan left Lincoln in 1944 McLean was asked to take over supervision of animal husbandry as well as veterinary science. In 1946 it was decided to re-establish the chair in animal husbandry, and I. E. Coop,* nominally on the staff since 1940 but absent on

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war service work in the United Kingdom, returned as professor of animal husbandry. Close to him since the foundation of the department were P. G. Stevens, M. G. Hollard and D. S. Hart.*

**Veterinary Science**

Upon McLean's resumption he had the support of veterinarians W. D. Robinson (1944-5), T. K. Ewer (1946-7) (later dean of veterinary science, Queensland University, and professor of animal science, Bristol University), B. A. Taylor (1948), Alison Kyle (1951-7) and G. G. Thomson** from 1950.

**Wool Science**

Sidey had died in 1939 but practical instruction continued with T. J. Morrow who had been a part-time instructor 1925-36, until promoted to lecturer 1937-44. P. R. McMahon, Massey Agr. College graduate, was seconded to C.A.C. 1941-6 as wool metrologist funded by D.S.I.R., and he guided the first students to graduate in wool science, A. A. Dunlop (M.Agr.Sc. 1942), C.S.I.R.O., Ryde, N.S.W., and B. F. Short (M.Agr.Sc. 1946), formerly C.S.I.R.O. and World Bank, South America and Spain. In 1945 he was joined by another Massey graduate A. E. Henderson (p. 202) who took charge from 1947 when McMahon went to the University of N.S.W. For four years Henderson was assisted by J. H. Drake, wool instructor and others until 1951 when J. C. Simpson*** succeeded him.

**Field Husbandry—Plant Science**

Calder had been assisted during the war by G. H. Paton, and from 1947 by C. E. Iversen, former school teacher. Botany was attended to by junior lecturers, L. T. Evans (Rhodes Scholar 1952) and A. E. Esler until J. A. Veale became the specialist botanist (1951-60) before his appointment to Univ. of New England and later to the foundation professorship in horticulture, Massey University.

After Calder's retirement as professor of agr. botany, R. H. M. Langer (p. 223) was appointed to the chair in 1959 within the definition of plant science, aided by T. M. Morrison 1960 (p. 229).

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PROGRESS THROUGH STATE FINANCIAL SUPPORT

The role of these two was to become manifest in the emergent institution, after devolution in 1962.

**Agriculture, Farm Management, Valuation, Economics**

In 1946 Bevin was assisted by the appointments of M. B. Cooke (p. 163) and F. L. Ward but the agriculture lectureship was soon after abrogated, as these people and others became an integral part of the expanding V.F.M. course. E. P. Wills was part-time lecturer in law for 27 years from 1938. After Bevin and Ward moved to Wellington to establish the Economic Information Service of the N.Z. Meat and Wool Boards, all valuation and farm management work came under the direction of Flay (p. 76) with H. E. Garrett*** and M. B. Cooke as his first lieutenants. A succession of young men took part in the farm advisory service and course work. Two of them were to advance greatly, H. P. Schapper 1944-51, who went to a readership in the University of Western Australia, and J. D. Stewart who joined this department in 1950 was to become the principal of the college (p. 227). Over the years from his appointment in 1930 the inimitable I. W. Weston had remained apart, distinctive in presence, personality and outlook. As a one-man unit throughout his career at Lincoln (p. 77), he had never sought any assistant or assistance; he required no more than three feet of desk room, with a rather greater amount of wall space to display the evidence of his most recent economic analyses, which were strikingly unconventional. He retired in 1959 when B. P. Philpott was appointed to the foundation chair in agricultural economics, an event, with developments, that is considered in the third part of this history (p. 206).

**Entomology, Agric. Zoology**

Another one-man performance had been that of Lewis Morrison (p. 65) since his appointment in 1931, except for support during 1939-42 from R. D. Dick and G. B. McLeod. Entomology was strengthened by an additional lectureship, K. M. Doull 1949-55 (then to Waite Res. Inst. Sth. Australia) and L. J. Dumbleton 1955-7.

**Agric. Microbiology**

After six years absence, during which he was the first staff member to complete an external Ph.D. course, Blair assumed this new lectureship in 1945. In the interim he had experienced an extraordinary sequence of post-graduate study in Britain and North America.

and war-time encounters. He was absent again in 1949-50 under terms of the first Nuffield Fellowship in natural sciences, and H. T. Wenham conducted lecture courses before taking an appointment in plant pathology at Massey Agr. (Univ.) College. A. P. Mulcock joined microbiology in 1950 and progressed with distinction, to the appointment of foundation professor in the department many years later, 1974.

Soil Science

During the first period of his career at Lincoln, Burns (1937-48) was dedicated to the cause of good teaching at degree and diploma level, and to effective extension among farmers. His research accomplishment within his discipline was slight and only two students completed masterates under his guidance, H. E. Garrett (1939) and S. C. Mandal (1948). He assumed a vital role as general tutor of the degree course, still within manageable numbers that allowed for personal counselling. A. F. R. Adams* from 1938, B. L. Elphick** from 1944, and H. D. Orchiston from 1947, were assistants in soils teaching and were to produce research studies of significance (p. 157). This trio, though contrasting as personalities, were happily synthesized into a lecturing team that enhanced the particular quality of soil science instruction at Lincoln. Burns resigned in 1949 to become director of the Fertilizer Manufacturers’ Research Association Auckland, in which position his accomplishment in a brief period was said to have been that he got the warring and antagonistic fertilizer interests together, securing reconciliation and co-operation among individual manufacturers and with the Department of Agriculture.

Meanwhile, Hudson’s view had prevailed, that in soil science there was need and justification for the establishment of a third professorial chair at the college. It was approved by the U.N.Z. in 1949. Several aspired to the post but none was called, and during a two-year interim period Adams, Elphick and Orchiston attended to all the requisite lecture work with loyalty and diligence, though aware that none of them would attain the professorship. In 1951, Hudson flew to Europe to find the man he could recommend for the professorship. In 1951, Hudson flew to Europe to find the man he could recommend for the


soil science chair. He found T. W. Walker* whose impact on soil science and agriculture in New Zealand and beyond has continued since then.

**Engineering**

E. G. S. Powell had been responsible for this work during the war period but in 1944 A. W. Riddolls** took charge and was to guide considerable development before his untimely death. Associated with him were R. H. Cochrane (1940-42), D. L. King (continuously since 1948) and G. G. Lindsay (since 1953).

**Horticulture**

The N.Z. Institute of Horticulture under the persuasion of J. A. McPherson, director of the Christchurch Botanic Gardens, had since 1935 deliberated on the establishment of a school of horticulture, Christchurch being the most favoured location, based on the Botanic Gardens with assistance from Canterbury College. The issue was kept before annual conferences of the institute but the message had been received that both Massey and Lincoln were planning horticulture development. In 1943 each college made overtures and as the result of a visit of the institute's examining board, Hudson was encouraged when the institute concluded that the course proposed at Lincoln would not conflict with the Nat. Dip. Hort. and that with some modifications, cross-crediting of the N.D.H. and the Lincoln diploma would be facilitated. The Christchurch Domains Board, then controlling the Botanic Gardens where the institute's school was intended to be centred, protested in 1944 at an agreement to concede the proposition to Lincoln (and Massey). At that juncture the School of Agriculture, having access to government grants for capital development, had approved of Hudson's submission on horticulture for Lincoln—also that of the principal of Massey College, each to share the appropriation and as a consequence only able to operate within constraints. In 1949, the institute granted a seat on the Dominion council for Massey and Lincoln. Whereas McPherson originally envisaged one school, cer-


tainly to be an adequately provided one, the ultimate development was that limited numbers of students had a choice of one of three diploma courses in horticulture—hardly a rational outcome. An Australian, T. R. N. Lothian who had earlier worked in Christchurch with McPherson was appointed in 1945 to develop the Lincoln course. He had a congenial persuasion that ensured full collaboration of lecturers in other disciplines basic to the needs of his students (eight in 1945) including the first woman student, Miss M. Harrow. After three years, Lothian returned to Australia as director, Adelaide Botanic Gardens. Then came three Englishmen, each separately and distinctively bringing to the young department tenets and practices of horticultural art and science—L. F. McElroy 1948-55, J. H. Glazebrook* (1949-62), and S. C. Challenger** 1956-. The course did not flourish within its first 15 years; enrolments were low (six to eight annually) and at one stage internecine staff disharmony and interference led to a board investigation from which some very sharp directives were given.

** Rural Education **

L. W. McCaskill, Christchurch Teachers' College, returned in 1940 from an overseas visit that had been supported by the Carnegie Corporation. He had obtained stimulus and inspiration, and he expatiated on the need and justification in New Zealand for radical changes in educational concepts to give greater recognition to the dependence of all people on the land for general welfare. Some of the concepts had been applied in J. E. Strachan's development of the curriculum of the Rangiora High School. Developments were envisaged which would enable the college to meet the needs of rural people. The predominance of teachers derived from the convention of classical education lacked an appreciation of rural life. It was proposed as a modest start to invite teacher-trainees to opt for periods of residence and instruction at Lincoln. Dr C. E. Beeby, then Director of Education agreed, provided the college made an appointment of a qualified person to supervise the student-teachers.

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McCaskill* was tailor-made for the post and though he had to start a department de novo, his ideas and prodigious capacity for work were to quickly justify his own decision and the appointment. Rural education, after McCaskill, did not reach the initial objectives but while he was active in the specific field there was notable progress. Later he followed additional lines of interest, to the end that in this man there was to unfold a career of very diverse and useful service.

It had been agreed that third year teacher-trainees should be able to specialize in rural education and courses were offered in 1946-7, when McCaskill and other specialist staff guided five teachers each year, two days weekly plus two weeks full instruction near the end of the year. The plan, however, was not durable, mainly through the decline then (1948) starting of agriculture as a subject in school curricula. The Education Department instituted instead, a plan for third-year training in nature study based on the Teachers' College, the trainees making only intermittent brief contact with Lincoln. McCaskill then directed his energy and resolution to other forms of extension that were to integrate the considerable college resources with service to the community. He had the assistance of a succession of young people who had a happy apprenticeship, before moving on to positions of greater personal responsibility, thus H. L. Botting (1949-51) to school teaching; R. Snell (1951) to principal Telford Farm Inst.; B. G. Broadhead (1952-3) to broadcasting. Two young women, Miss P. Lang (1954-6) and Miss R. Bourne (1958-60), who came from England, also contributed. The first assistant McCaskill had, T. H. Scott (1947), took up another university position but he lost his life some time later during an ascent of Mt. Cook. When McCaskill became director of the Tussock Grassland and Mountain Lands Inst. in 1960, Rural Education came into the care of A. T. G. McArthur** who relinquished it in preference for Agric. Economics, whereupon D. B. McSweeney, who like McCaskill had previously been a Teachers' College lecturer, assumed responsibility for Rural Education (p. 267).


The staff as a corporate political force

The 1940 staff discussion group had by 1943 become a policy and publicity committee of senior staff and representatives of the board (council). The committee sought to bring the board in closer touch with staff views. Though he commended it at first, Hudson lost enthusiasm and felt that in a measure the committee tended to interfere with the formulation and execution of policies he was required, as principal, to present to the board. He wrote “the policy and publicity committee was no more than a device to humour the vanity and enhance the self-importance of some of its members, who had nothing whatever to contribute and spent endless time in mulling over plans which had already been formulated”. Some of the group’s ideas were adopted, among them refresher leave, provision for women students, special staff appointments (e.g. visual aids officer), election to the board of a lecturers’ representative, rural education and extension proposals. In the committee and allied developments M. M. Burns began to emerge as a member with perspicacious political sensitivity. Hudson viewed the tentative steps of the staff as a force in internal politics with distaste. Although opposing in principle some of their aspirations, such as staff representation on the governing body, he dutifully transmitted staff proposals to the board (council), and he did not attempt to curb views contrary to his own.

In 1946 the academic staff, under the chairmanship of Burns, constituted themselves as the Lincoln College Teachers’ Association, with the aims of advancement of education and research, safeguarding interests of members and of closer relations within and between university staffs. A N.Z. University Teachers’ Association had been founded in 1923 by Professor (later Sir Thomas) Hunter of Victoria U.C. But it was largely defunct, until in 1948 the Lincoln staff, allied with a Canterbury College group, convened a meeting of representatives, from which a revived A.U.T.N.Z. was re-constituted. The Lincoln staff organisation joined the national body. A. W. Riddolls was on the 1948 national executive and in 1951, Lincoln representatives held the national office of president and secretary, C. E. Iversen and H. P. Schapper respectively. Lincoln staff were prominent among those who made the first overtures that gave rise to the organisation of academics within the structure of University politics, which for most means the politics of conditions of employment.

Some Lincoln staff had decided that the dictum of I. W. Weston, “the devil only takes the hindmost”, should be taken seriously, and they acquired interests in or ownership of farms. There were notable successes among these staff farmers, but the board deemed it
necessary to re-define conditions of appointment to include the clause: “The appointment is a full-time one and the appointee is debarred from accepting any professional appointment outside . . . and from engaging directly or indirectly in any private or commercial undertakings or extra-mural work without the approval of the board”. Fees for external examining, literary work and broadcasting were excluded, but in instances of earnings for the college on specific contracts outside normal hours the Board reserved the authority to pay the staff member a proportion of fees earned. Meanwhile, the farmer-staff retained their farms, and later were joined by others.

Staff developments under review have been identified with the pioneer endeavours of the A.U.T. (Lincoln branch). The success they had in salary negotiations was repeated again with the inception of refresher leave. When the U.G.C. included in the annual grant, funds to enable long-serving staff to undertake study or research, the board in 1948 invited the Lincoln A.U.T. to submit working details of a refresher leave scheme. With slight modifications these were adopted by the board and have continued in use with changes only on the level of assistance consequent upon inflation. Refresher leave at Lincoln is not sabbatical leave, as of right. Since 1948 when Hudson as director, visited the U.K. and U.S.A. and was a N.Z. representative at the Oxford Conference of Commonwealth Universities, refresher leave has been granted and used with enormous advantage to both parties, the staff member and the college.

Graduates and diploma holders of the college had earlier obtained representation through a Statutes Amendment Act 1944. The representatives of the A.U.T. in 1948 persuaded the governors to provide for representation of the academic staff, simultaneously ensuring that the Principal should be a full member, not merely in attendance as previously.

Hudson did not, however, exercise his right to vote, adhering to his strongly held principle that in a publicly financed institution it was improper for a person to be both an employer and an employee. “The inevitable result will be for increasing pressure for more and wider staff representation, intrigues will develop, discord will result and time and energy which should be applied to work will be diverted to internal politics . . . .” With one exception, staff representation has not developed in that way; elected staff members have been effective, though prepared to defer to their ‘employers’ as the occasion demands. The 1949 amendment made no provision for student representation, but the board designated one of its members to act in consultation with the Students’ Association. This
arrangement held until 1972 when the council agreed that the president of the Students' Association should be co-opted as a non-voting member.

Disharmony among the staff was rare and never prolonged. One individual, efficient though he was in his own domain, had a tendency to interfere with the efforts of others. An incident in public resulted in the member being informed that consideration had been given to his dismissal and that he had been placed on probation for an indefinite period. There was honour among gentlemen in compromising situations, as on the occasion when mention was made of a prosecution against a staff member for driving a car while intoxicated. The council resolved that the meeting should proceed to the next business. An unhappy situation in one department had resulted in a committee of inquiry, as well as a special meeting at which representations were received. There had been trouble-making by outsiders but the governing body ultimately resolved that unless the whole staff worked amicably within the department, co-operated effectively with other departments, and succeeded in meriting the confidence of outside organisations, steps would be taken to reconstitute the department. Two years later this action had to be taken and one appointment was terminated. There was sympathy for this person in the knowledge that his spirit had been eroded through ill-health but he went down fighting. He successfully petitioned the Speaker and Members of the House of Representatives for an investigation into the administration of the college specifically with reference to his former position. The Education Committee of the House received him in Wellington—a lonely figure without aid of counsel—and opposed by a formidable array of the board chairman, the principal, registrar and college solicitor. The curtain was drawn when the decision on the petition was received “that as the petitioner has not exhausted the regular legal procedures open to him the committee has no recommendation to make”.

(4) Professorial Board and the Degree Courses

The Professorial Board became increasingly confident in its work though the members were always subordinate to Hudson. In 1948 the board had only two professors; at the translation in 1961 there were only four, the other departmental heads being of sub-professorial status. There was an equalisation of ability however and academic distinctions were of no relevance. Representatives of C.U.C. such as Professors Tocker, Packer and Percival were unobtrusively helpful. The trend began for members to concentrate on the structure and operation of courses of study. The 1926 statutes of
B.Ag.Sc. and M.Agr.Sci. had provided a "general purpose" degree which, on their subsequent career records, had evidently enabled graduates to advance with success in diverse employment.

The known placement of the first 200 who had graduated B.Ag.Sc. had been recorded as follows:

<table>
<thead>
<tr>
<th>Placement</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research (N.Z. &amp; Overseas)</td>
<td>18.3</td>
</tr>
<tr>
<td>Extension</td>
<td>20.3</td>
</tr>
<tr>
<td>Teaching (Schools/University)</td>
<td>19.3</td>
</tr>
<tr>
<td>Farming</td>
<td>9.9</td>
</tr>
<tr>
<td>Soil Conservation</td>
<td>6.4</td>
</tr>
<tr>
<td>Commerce</td>
<td>5.9</td>
</tr>
<tr>
<td>Post Grad. Study</td>
<td>3.5</td>
</tr>
<tr>
<td>Overseas—General</td>
<td>8.8</td>
</tr>
<tr>
<td>Vocation unknown</td>
<td>2.0</td>
</tr>
<tr>
<td>Deceased</td>
<td>5.4</td>
</tr>
</tbody>
</table>

During the life of the School of Agriculture, effort was encouraged to integrate Lincoln and Massey academic interests and the Lincoln professorial board in 1944 suggested a basic three-year course wholly provided within each college, with an optional fourth year of specialisation towards an honours degree. This was not favoured and the two boards continued for four years to exchange proposal and counter proposal each seemingly intent on allaying the expressed dissatisfaction of employer State Departments. There had been evidence of the success of Lincoln's V.F.M. diploma in providing men readily able to enter upon specialised duties, and other bureaucrats were asking for graduates who likewise would be more useful to them immediately upon recruitment. Until that time a general-purpose degree had been deemed adequate—initiation to basic science at the universities, applied science and agriculture at the agricultural college, after which the graduates were left to their own devices in making their course of training fit the needs of the chosen employment. The innovators prevailed and the 1948 degree revision, submitted in unusual unison by the two colleges of Agriculture and duly approved by the agencies of the University of New Zealand, was the start of what was to become a steady flow of new degree courses. The 1948 statutes described three degrees, B.Agr.Sc., B.Agr.Sc. (horticulture), B.Agr.Sc. (dairy tech.), the last at Massey only. The intermediate course of basic science was still required to be taken as a pre-requisite at a full university centre but with some revisions. Instead of the former 15 subjects to be presented at Lincoln or Massey, the 1948 revision offered 32 subject prescriptions. There was rationalisation, however, in 12 mandatory subjects in the first
two years, while the proliferation for the final year had to be integrated into certain limited option groups—field or animal husbandry, soils, farm management.

Hudson presided over the Professorial Board but he was highly unimpressed by what was being enacted. He was reconciled to duty as chairman, but later he wrote: "the difficulty with degree courses. . . they are necessarily divided into a number of subjects . . . each is taught by a specialist and it is not surprising that each specialist is impressed with the all-important nature of his own subject and seeks for it to be given a more important place in the curriculum, at the expense of other subjects. As there was no one with power to adjudicate, endless argument resulted and compromise was resorted to . . . this took the form of giving every specialist what he wanted by providing a large number of optional courses . . . The net result was, and is an absurdity . . .".

Hudson favoured specialisation at the final stage, and also for higher degrees, but he was most critical of what the Professorial Board advocates were doing to the lower or first degrees. His own view was that there was need for a good basic degree for forestry, agriculture, horticulture, dairying, veterinary science and rural education, but he was not disposed to carry that flag through the turmoil of Professorial Board, to School of Agriculture, to University. The degree course had now become the sphere of interest of the specialists and planners.

Degree students had changed from two in 14 enrolments (1936) to 23 in 80 (1948), an increase without the aid of public relations or school liaison activities. Within five years "degree revision" was again being discussed by the Professorial Board. Some State Services claimed that graduate numbers were still inadequate and the quality often dubious. A former student (P. W. Smallfield, then director of the Extension Division of the Department of Agriculture) product of the first degree course (p. 57) which on present standards could only be judged as lamentably deficient, contended that the R.F.C. and V.F.M. course was excellently servicing the staff needs of the finance and supervisory departments (Lands, Maori Affairs, S.A.C.), but that the Department of Agriculture was dissatisfied with its recruits, who were required to be graduates. What he did not admit was that at that time the Extension Division of Department of Agriculture was not popular with new graduates; it was at the end of the receiving line. Speaking for the needs of the research department (D.S.I.R.), F. R. Callaghan contended that the agriculture degree made inadequate provision for training in basic sciences and he echoed Smallfield in saying that "the association of diploma training with graduate training tends to
lower the status of scientific education at agricultural colleges and the scientific calibre of the staff is also affected”. The college, the Professorial Board and Board of Governors, rejected the validity of criticism of a dual-purpose diploma and degree charter. After all, the curricula and lecture courses, unlike those when Smallfield was a student, were entirely separated. There were echoes again of the crisis and turmoil of the mid 1920’s (p. 54) when the University Chancellor in his Senate Address in 1954 commented on the complaint of employing departments on the deficiency of numbers and quality of agriculture graduates. His concern at the difficulty some departments had in obtaining agricultural graduates did not appear to be balanced by knowledge that by the mid 1950’s agriculture graduates, especially New Zealand produced, had become a quality product, almost able to pick or choose within a wide spectrum of employment opportunity, both within this country and overseas.

Thrust and counter-thrust continued but degree revision was certainly pending and 10 years after the 1948 changes, the statutes and prescriptions were again rewritten. Burns had been influential in each change, in 1948 as a leading spokesman within the Professorial Board, in 1958 as principal of the college and chairman of the Professorial Board. The 1958 degrees were a general purpose three-year course—B.Agr. and B.Agr. (Hort.) and the standard four-year B.Agr.Sc. or B.Agr.Sc. (Hort.). Thirteen mandatory subjects were prescribed for the first three years; in the fourth year a choice could be made of one of seven option groups. Over all however, the subject prescriptions had now exceeded 40. Masterate courses followed within six-subject groups or sections.

In this revision, the basic sciences physics, chemistry, zoology and botany were to be taken at the agricultural college; agriculture intermediate at a full university centre was eliminated. Science graduates were appointed, the foundation lecturers being: chemistry, A. F. R. Adams for one year, then A. S. Campbell from 1959; physics, A. R. Edmunds 1958–63, then R. W. Heine; zoology, D. Stenhouse 1958–60, then G. R. Williams (now director, Wildlife Division, Department of Internal Affairs); botany, J. A. Veale (later professor of horticulture, Massey University).
CHAPTER 9

High Point in Farm and Property Development

In his planning, Hudson aimed to produce a balanced three-tiered college strong in the components—instruction, extension among farmers and allied interests, research. It was fortunate that he had fortitude and strength, for he was confronted with a situation akin to that encountered by Lowrie 35 years earlier. At the beginning of 1937 the bank overdraft at £8106 was near the limit. Within two years this was dispersed and not since have the general finances been embarrassing to the administration. In 1936 there were urgent priorities in rehabilitation of the property, improvement of facilities, a need to stiffen the fibre of discipline and morale. What was to be accomplished in the ensuing 25 years by Hudson and his successor, M. M. Burns, made Canterbury Agricultural College a public institution ranked high in acceptability and usefulness to the nation. The growing success of the college farms was closely linked with public esteem.

Property development: Farm and Buildings

In 1937 the central college farm which had been a miscellany of 40 fields or paddocks was changed to seven blocks denoted by compass bearing from the college centre, E. S.E., N.E., etc., and with fields numbered clockwise within the block. The director knew that the E. and S.E. blocks on heavy land, of great potential, had not been developed. An access roadway was constructed, the fields tile-drained and refenced, and the area was soon re-established in high-producing pasture. With heavy stocking these areas acquired a fertility level that permitted highly remunerative rotations of crop and pasture-seed. It was estimated that within seven years of the development started in 1937 the heavy land (S.E.) blocks of the property were producing four-fold increases in crop yield. By 1940, diversification had resulted in 20 different crops of high yields being harvested and the total area under ploughing exceeded 600
acres, half the area available. Two innovations were the use of high-quality pastures, grazed then put to seed production—fortuitously coinciding with a period of great buoyancy in the export and local small seeds trade—and the extension of the area under well-established lucerne. Emphasis was laid on the value of good pasture as the basis of arable farming, and that of lucerne hay as the basis of supplementary stock feeding for prevailing conditions on the eastern side of the South Island. Hudson's concept and his demonstration of it—building up fertility with high-quality pastures and cashing in on this through cropping, including grass and clover seed production—was one of the first substantial demonstrations derived from the college farm and one which has been durable in the general farming economy. There was a marked correlation also between agronomic practices employed then on the college farm and the average yield of wheat. In 1895, wheats rarely exceeded 30 bushels per acre during the period of exploitation of soil, with the tendency towards successive cereal cropping. By the 1950's wheat yields averaged above 50 bushels per acre, with upper yields exceeding 60 bushels. This evidence of progress was derived primarily from the manner in which Hudson's policies had shown how wheat was grown to advantage in rotation with short-term heavily-stocked grass and clover pastures. A corollary was the demonstration of the cost-saving practice of establishing clover, ultimately for seed production, by undersowing with wheat. The availability of genetically-improved wheat varieties, adapted to higher levels of soil fertility, and derived from the Wheat Research Institute D.S.I.R. was, of course, allied to the 100 per cent increase in wheat yields.

The farm area was extended by 1940 to 1264 acres and despite the costs of fencing, modern equipment and renovation of buildings, the bank overdraft and the mortgages on recently purchased lands were paid off. Income from farm sales rose from £5980 in 1937 to £14,783 seven years later and in the last year of Hudson's leadership (1951) farm produce sales exceeded £50,000. Some of the improvements in animal husbandry instituted by Hudson were the establishment of an Aberdeen Angus stud (later relinquished), grazing of beef-fattening cattle, the gradual rejection of Shorthorn cattle in favour of Friesians, purchase of quality stud rams, development and expansion of pig and poultry units.

The extensive refencing programme extended over several years, employing a former student S. C. (Tiny) Harris (Dip. Agr. 1906). This man thrived on hard work. Far from being 'tiny' he was huge, of immense strength. He retired from farming to work as a fencer contractor, confining his labour to the college. He made his own
concrete posts, dug his post-holes and handled and strained the wire (aided by students, who learned an art from him). Hudson's tribute to Harris was appropriate in sentiment and spirit to so many of the long-term farm staff: "Among those who have served the college there have been a few men blessed with undefinable qualities which have marked them from their fellows. Not to be remembered because of academic brilliance or because their careers have been crowned with worldly success, they now possessed something of greater worth and finer texture. They have been men with lengthy experience of the soil and into whom the essence of 'the good earth' seems to have soaked. As good husbandmen, they served the land with diligence and faith and in return the land endowed them with something beyond price. They have been worthy men; rugged, steadfast, kindly and as wholesome as a newly-turned furrow. Their unstudied influence has been profound, and fortunate have been those students who have laboured with them and gained at second-hand some small measure of their worthiness . . .". Of such were Tiny Harris, Jimmy Frazer, Sam Knight, Charlie Brown and others.

In this restorative stage new plantations were planted and subdividing shelter was admirably provided by Hudson's introduction to this country of the species Cupressus arizonica and the establishment of a nursery for this purpose. Major replacements were made among farm buildings. The original farm centre—stables, cowshed and dairy in use for 73 years—were abandoned for demolition in 1953. The site of these is now a car park. A farm office centre, with stores, and a new dairy were erected in 1940 and a year later a Danish type piggery and a butcher's "shop". In 1939 the shearing shed was moved to a better situation and adequate yards provided, with facilities for drafting, dipping and shearing. The water supply had become inadequate but the site-dominating water-tower, with a 4-in bore and pumps to serve a 50,000-gallon tank were not provided until 1948. This facility and a commodious implement shed, erected about the same time, were all within the completed plan made possible at first by the use of farm profits and then through capital grants.

Until 1936 the light-land Ashley Dene holding (878 acres) apart from being a base for student work and for Leslie's animal research (p. 75) was more liability than asset. Costs were high, returns low and the college had been losing substantially each year. After his experience in Australia, Hudson knew the value of subterranean clover on light dry soils and he at once introduced this legume into pasture mixtures. In autumn 1937, 250 acres were sown but early results were not promising. Farmers who had tried the species
without success nodded and said: "Oh, we told you so. First year good but even with superphosphate, its yield was nothing to get excited about". However, in 1938 experimental plots had been laid down by Calder and Burns and soon these demonstrated that subterranean clover on that soil type (Eyre stony silt loam) required lime in addition to superphosphate. A three to four-fold yield increase was obtained using phosphate plus half to one ton calcium carbonate. This field evidence confounded conventional thinking that lime for pasture was beneficial only on heavy clay soils, not on free-draining alluvial soil over shingle. Once the Ashley Dene pastures received lime in addition to superphosphate they flourished, and by 1947 the whole effective pasture area was in high-quality subterranean clover incorporated in various mixtures with ryegrass, cocksfoot and Phalaris tuberosa. Cultivation costs were reduced through the success of surface sowing on old pasture in some of the areas. As fertility rose through the increase of sheep from about 800 to over 2,000, lucerne was successfully established—also aided by lime applications—and as a consequence this farm unit became a profitable asset in its own right, especially in the years (1950-1) when returns from wool were a record. The effects of the Hudson programme, aided by other staff exerted a substantial influence on light-land farming and the Ashley Dene farmers’ field day became one of the College's substantial successes in extension. Ashley Dene became a pilot farm to evaluate techniques and demonstrate their economics. The results had a considerable effect on the economy as there were, according to Flay, somewhat above one million acres of light dry land, comparable with Ashley Dene, and on most of which the college example was to be followed. The experimental work had indicated that lucerne could also be established, again dependent on lime and optimal pH, so that Calder and his associate, C. E. Iversen* over several years showed how this plant, previously deemed suitable only for medium-heavy land, could also be used to advantage on the dry shingle plains. Almost half (400 acres) of the Ashley Dene area was in lucerne for grazing by 1959.

It was on the Ashley Dene plots that Calder in 1948 made the first field sowing in New Zealand of creeping lucerne (Medicago glutinosa). The Crop Research Division, D.S.I.R., through his brother, R. A. Calder, had obtained this material from Canada in

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1937 and had been testing it in small plots. Calder made selections of the material at the college, using the facilities of the glasshouse built from a bequest of a North Canterbury farmer, W. A. Forrester. The field work on the sown areas at Ashley Dene culminated in the certification of college *Glutinosa* as an acceptable pasture and forage plant. Calder dispelled the earlier precept that lucerne was mostly only a hay crop.

This first developmental stage doubled the carrying capacity between 1937 and 1952. The second stage was under Flay between 1952 and 1964. He used the higher level of fertility to produce more hay, to extend the area of lucerne for hay and grazing and to employ improved stock management. The latter was the outcome of Coop's work that had demonstrated the superiority of Border Leicester × Corriedale cross-breds in lamb production. In the Flay period of management the figures told the story. The 1953 contribution from Ashley Dene of a little more than £2,000 to the college's consolidated farm profit appropriations was more than doubled to £5,000 in 1964.

The farm work force during Hudson's period continued to be the diploma students, guided by paid farm staff in the traditional key positions—teamster, stockman, shepherd, etc. There were several changes in the farm managership but when C. P. Tebb (p. 84) was manager-superintendent (1940-3, 1946-51) a state of mutual esteem existed. The director was among the first to concede that if the college farm had indeed become one of the finest in New Zealand, Cuthbert Tebb shared the credit. The management of this very large farm required the service of one of outstanding ability and personality. At times the task had been beyond the resources of several managers. Tebb had great intelligence and knowledge, and a pervading enthusiasm for his work, aided by patience, tolerance and forbearance. His influence on students and control of them were remarkable and a host of them were guided in their attitudes to farming and to life in general. Tebb is selected to represent the men who did their best as managers (p. 311) during their span within the 100 years. After Tebb's departure the high standard of over-all efficiency was maintained under the superintendents: J. H. Oldfield (1952-4) and then J. D. McNaught (1955-9), both V.F.M. graduates. A major reorganisation in the management of the property was deemed necessary by M. M. Burns when he became principal. It had been seen for so long as one unit that there was confusion and overlapping of practice, inefficient employment of facilities and obscurity in budgeting and financial recording. The board (council) established a farm committee of governors and academic staff who were experienced in farm management and they
assumed responsibility for the whole operation. In 1953 the boundaries of what were to be four self-contained farms were defined—Ashley Dene, a dairy for liquid milk, stud sheep and arable farms. In 1960 another unit was defined as the research farm. By 1975 the units in use were Ashley Dene (355.7 ha), mixed cropping (154.6 ha), research (151 ha), horticulture (16 ha), seeds (38.7 ha), stud sheep (128.6 ha), town supply dairy (117.5 ha), Hunua (924.3 ha), Lyndhurst (142 ha). The supervisors report on policy, programme and budget of each year's performance. The units each have a working manager under the supervision of farm management specialists within the academic staff,* and are required to aim for profitability and usefulness of their units for student or farmer demonstration. Further recent developments in the units are outlined later.

Student labour was scarce during the early years of World War II (12 diploma entrants in 1942). To alleviate this, a system of cadetships was instituted. Young men not eligible for military service were selected to work full time on the college farm for two years for a small wage, and at the end of this apprenticeship they were admitted to the two-year diploma course. The scheme ended in 1947, when 35 cadets had passed through the diploma course from this mode of entry. By 1951, however, with 42 first-year diploma entrants, and 34 second-year students, the total labour force of 76 presented difficulties. Mechanisation meant less gainful work for students; ploughing and harvesting, for instance, were completed in days, compared with weeks in the horse era. Consequently, in 1954 the diploma course was radically changed in that no longer were the college farms to be worked by students. Instead, prospective students had to do two years of approved farm work after leaving school. They were then given 5½ months academic instruction in two successive years, with an intervening 6 months to be spent on farm work beyond the college. Thus the farm community in general has now become the base for the students' basic practical training, and the college has come to appreciate the wil-

* In the main, supervision of the farm units has been distributed as follows (all college graduates and staff members):—
  
  Ashley Dene, A. H. Flay 1954-63; J. D. Stewart 1964-73; N. G. Gow 1974-
  Mixed crop, J. H. Oldfield 1960-3; B. J. P. Ryde 1964-
  Research, D. K. Ower 1960-
  Stud sheep, D. K. Ower 1960-
  Town Supply Dairy, M. G. Hollard 1955-76; R. D. Plank 1976-
  Hunua, A. I. Bilbrough 1966-72; G. F. Tate 1973-
  Lyndhurst, D. K. Ower 1975-
  Horticulture, G. F. Thiele; T. M. Morrison 1977

Changes in the areas of some of the units have since occurred through realignment of boundaries and transfers of use.
lingness of up to 1000 farmers in all parts of New Zealand who accept "Lincoln pre-entry students". Most of them, from reports received, treat these young men (and women) with tolerance and consideration and many life-lasting friendships have been created. In the 1954 course an attempted reduction of fragmentation was made and instead of twenty-four subjects and five workshop/technical units of the former diploma, the basics were incorporated within nine prescribed subjects. The change was illusory for within a subject like Plant Science there were still the enthusiastic advocates of their lectureship interest—botany, agronomy, plant pathology, entomology—each guarding their time allocation (never sufficient!), conducting separate examinations, negotiating for their proportion of the final composite mark or rating for the student on whom the system had been inflicted. Nonetheless the new programme, overall proved popular in that between 1955 and 1960 diploma of agriculture enrolments ranged from 72 to 107.

In 1956 the farm cadetship or trainee concept was reintroduced to ensure a baseline labour force for the college farm. Up to 24 trainees were sought, to work full-time on the farm for one year, this being a pre-requisite for entry to the new diploma course. The first 24 trainees in 1956-7 were readily obtained, but applicants subsequently dropped sharply and the scheme was abandoned after the 1959 entry of 14 trainees.

Individuals who in future may seek specific details of the college farms, such as utilisation, crop and stock distribution and returns, equipment, are advised that these have been annually recorded in the college magazines which may be consulted in the Lincoln College Library. Some specific aspects warrant elaboration at this juncture; seed production, cattle and pig production, sheep, poultry.

For about 30 years from 1924 a major activity of the college farm had been the multiplication and distribution of high-grade certified seed of farm crops and pasture plants. The arrangement was in collaboration with the government institution responsible for breeding nucleus lines—the Wheat Research Institute, Crop Research Division D.S.I.R. and with the Department of Agriculture which ran the seed certification scheme. The college profited from growing, harvesting and machine-dressing pedigree seed wheat, which was then allocated to grain and seed merchants. The college was also authorised to produce a large quantity of the next order of quality, mother seed, for sale to farmers directly. This work had been aided by a gift to the college in 1926 of a complete seed-handling shed, with dressing and disinfection machinery, all provided by merchants and grain farmers through the Wheat Board.
This was in token recognition also of the benefit of the pioneer breeding and seed selection work of Hilgendorf and Calder.

Similarly, the college for many years was in a favoured position of multiplying new improved lines of small seeds—cocksfoot, timothy, *phalaris*, white clover, lucerne and the various ryegrasses. The college farm was used to multiply nucleus lines on contract with the Department of Agriculture, such to be used as Government Stock seed. The lower grades of pedigree, mother and standard seed, were also sold direct. This work was facilitated when close personal association existed between college staff and those of the D.S.I.R. and Department of Agriculture—notably when Calder supervised the college participation, aided by C. P. Tebb and J. H. Oldfield, farm superintendents, who were additionally enthusiastic about seed production and when J. H. Claridge (B.Ag. 1926) was superintendent of the Seed Industry, Department of Agriculture, and R. A. Calder (B.Ag. 1923) was Director, Crop Res. Div., D.S.I.R. A time came later when such pure seed production was conceded also to farmers who had acquired the skills in this specialist seed production. They learned them from the college example and had been given the instruction at field days. The department also found advantage in spreading nucleus seed production over a wider range of soils and climate than typified on the college farm, but in truth the college enjoyed substantial profit from its 30-year dominance.

The development of pigs and dairy cattle at Lincoln has been reviewed by M. G. Hollard.*

The formalised production, recognition, identification and registration of purebred pigs in New Zealand dates from only 1917 and the first herdbook with its 242 registrations was published in 1918. Before this, conditions were somewhat chaotic, and the breeding of some allegedly purebred animals was a source of polite disbelief. Three or four well-known breeders, including R. E. Alexander, then director of C.A.C. met at the Feilding show in 1915 and the New Zealand Pig Breeders’ Association, formed in 1916, was the result.

The first herdbook is of historical significance in that the sire and dam of each animal for three generations was required for all animals entered for registration. In the Berkshire section, fewer

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than six of the 201 animals registered could not boast of a descent from imported stock at least once in the three generations. Many of the family trees were masterpieces of imagination. Some breeders, however, and notably the college and Ruakura, were honest enough to record ancestors simply as a sow, or a boar, when pedigrees were in doubt.

Pedigree pigs at Lincoln, of both the Berkshire and Large Black breeds, appeared in the herdbooks of the New Zealand Pig Breeders’ Association from Volume 1. The major contribution of the pedigree pig herd at the time was to supply pedigree boars, of the then very popular Berkshire and Large Black breeds, to pig producers.

The days of really useful work with pigs at Lincoln started with the arrival of M. J. Scott in 1922, and finished with his departure in 1936. Scott had the unusual combination of the qualities required in a first-class research scientist and also those of a highly regarded husbandman. For 14 years at Lincoln he carried on a research programme, mainly in pig nutrition, and at the same time he initiated recording schemes in 1928 to monitor and promote improved pig husbandry in both the South and North Islands. He was so highly regarded in his field that he left Lincoln to become the first supervisor of the pig industry in the Department of Agriculture of New Zealand.

While at Lincoln, Scott made his largest research contribution in fully exploiting meatmeal as a feed both for growing pigs and for dairy calves. Scott also made some useful comparisons of breeds, both pure and crosses, for baconer production, highlighting in the results the superiority in growth rate of the Berkshire × Large Black pigs compared with either pure parent breed. Much of Scott’s work on pig nutrition in the late 1920’s was consolidated in Bulletins Nos. 2, 12 and 17, Department of Scientific and Industrial Research.

At Lincoln after 1936 interest in pig production waned considerably, in keeping with the New Zealand trend. Production of pedigree pigs for sale and of baconers for hostel use became once again the main objectives. The line of pedigree Berkshires had been supplemented in 1932 with pedigree Tamworths, and then, in 1943, the first pedigree Large White pigs were registered for the college by P. G. Stevens. The sire and the dam had been acquired by Stevens from D. S. Hart, then of Feilding but since 1950 on the college staff, but there is no record of any payment ever having been made or received for the foundation stock!

After the arrival of C. P. McMeekan at the college a resurgence of interest in pig production and research seemed likely. Certainly a
new pig fattening house was constructed to the design of McMeekan, but it was sited back to front by Hudson during McMeekan’s absence, and so never functioned very satisfactorily.

In 1946 Stevens became obsessed with the idea of breeding a red coat on to a Large White pig, to minimise the effects of sunburn on an otherwise very desirable breed, and possibly to capitalise to some degree on the effects of heterosis in reproductive performance and survival rate. The breed was to be dubbed the “Lincoln Red”. In retrospect, it is clear that the small scale of the breeding programme nullified any real chance of success. In the event, the colour segregation in the final product defied imagination, with a range from white to black and very few sandy-coloured pigs in between.

The sandy-coloured pigs which were slaughtered certainly excelled in carcass quality as baconers, but positive heterosis in reproductive performance was not obvious; in fact the temperament of the Lincoln Red sows gained most renown when one of them chased A. T. Taylor (p. 311) over the fence when he was working—for the last time—as “relieving pigman”.

Pig production at Lincoln ceased, and the stock was sold in 1955 because the small size of the herd precluded any genetic improvement by design, the supply of skim milk from the dairy disappeared with the change to town milk, and the piggery was too close to the proposed site for new hostels; also, costly repairs to the fattening house were imminent; and labour for the pig unit was unobtainable.

Interest by the Animal Science Department staff in pig production continued unabated in the 1970’s, but privately-owned large specialised fattening units were used for demonstrations, and interest in pig breeding was retained through Hollard being a member of the Technical Advisory Committee of the N.Z. pork Industry Council, which had its boar performance testing unit at Springston, known as the McMeekan Centre, which commemorates in part the career and work of the eminent animal research scientist who had an association with the college.

The herd of Shorthorn cattle at the college was founded in the early 1890’s on cows purchased from the Riccarton and Homebush herds of the Deans family, and the herds of Messrs. P. C. Threlkeld of Leeston, H. Pannet of Springston, and C. T. Dudley of Irwell. These were some of the few long-established herds, based on New South Wales importations, which survived the years of economic depression in the 1890’s.

It appears that even before the arrival of R. E. Alexander in 1909, cattle bred at the college were exhibited most successfully at local shows, and that at least one Shorthorn bull Persimmon, was ex-
ported to Queensland where it achieved fame and possibly fortune for its purchaser. The college herd at the time supplied bulls for breeding purposes to local farmers and also for student instruction in dairy husbandry. In 1897 the Pulsator Milking Machine Co. held a trial of its machine at the college, and it was deemed to be an outstanding success, not least by the students working on the farm. However, milking machines did not gain any measure of general acceptance until after 1902.

Through the impetus given by Alexander from 1909 there were then some 77 head of cattle on the college farm, including six "crossbred" cows which were bought for milking and which were reported to be a great success. However, Alexander was a staunch supporter of purebred breeding and was most critical of the practice of using sires of small breeds on Shorthorn cows.

Alexander strongly advocated the use of Shorthorn cattle as "dual-purpose" animals for both meat and milk during the whole of his period at the college. To bolster the college herd of Shorthorns, he made at least one further importation on behalf of the college—Loobagh Premier.

In 1936, some 20 milking Shorthorn pedigree cows were purchased from a former student, J. M. Ranstead, of Matangi (p. 322) to boost the milk-producing abilities of the college herd, and in this respect they were most successful. The herd was first officially production-tested in that year, and the superiority of the new purchases under test was no doubt a major reason for the rapid disappearance of the remaining traces of the original dual-purpose Shorthorn stock. The milk from the herd at this time was used for hostel and staff requirements and the balance was separated, the cream being sold for butter manufacture and the skim milk used for pig feeding. The herd was run as part of the complex college farm operation.

Selected stock were still being exhibited with success at local shows, and this practice continued until 1957.

In the years after World War II significant changes in the college involvement in dairy production occurred. Dairy farming itself became rather more highly specialised and staff at the college were being called on to an increasing extent by local and national farming interests for advice on dairy production matters. In 1951 Hollard recommended that the college allocate an area of land for a self-contained dairy farm. The aim was to provide some enhanced credibility to teaching and extension in dairy production, and carry out limited research in the field if opportunity offered. Hollard had also recommended that the Shorthorn cattle be replaced by Friesians, a breed particularly well-suited to town milk production and
also of considerable value for both milk for manufacturing and for beef production. Both proposals were ultimately adopted.

The area used for the dairy farm fluctuated in size and in location over the years since 1952, but settled at 143 hectares in the eastern side of the campus between Springs Road and Lincoln township. The town supply daily quota increased from 220 litres in 1955 to 2009 litres in 1976, the largest in the South Island, and the cash surplus from operating the farm was gratifying in most years.

Foundation purebred Friesian stock were purchased from R. C. Mason of Okains Bay, R. G. McIntosh of Prebbleton, and D. Simms of Otautau. In the main, sires of the New Zealand Dairy Board have been used through artificial breeding to produce replacement stock. Over the years, additional stock have been purchased from time to time to accelerate the rate of herd expansion, until by 1976, over 100 purebred Friesian cows and 200 unregistered Friesian cows are calved annually. Total annual milk output exceeds 1.2 million litres.

The major research development was by C. S. M. Hopkirk* on the prevention and the treatment of mastitis in dairy cows. From 1965 to 1972, a special herd ultimately comprising 37 cows was used for these experiments, and the results obtained were of marked significance in combating the mastitis problem.

Stud Sheep
Professor A. E. Henderson (p. 202) reviewed this feature of the college farm operation other than Coopworth (p. 159).

From the time of establishment the college has played a prominent part in sheep breeding. Emphasis on different breeds has varied, some have endured while others enjoyed only a brief period of popularity and in many ways this history of sheep breeding at the college reflects the development of farming in New Zealand.

In 1879 the college purchased its first purebred sheep. These were 54 Border Leicester ewes from T. A. Hay, of Pigeon Bay. They were descendants of sheep imported between 1859 and 1862 by the New Zealand and Australian Land Company and eventually registered by them as Flock No. 1 when in 1895 the first flock book of the New Zealand Sheepbreeders' Association was issued. At that time the Lincoln College Flock was registered as Flock No. 62 and it now

has the distinction of having existed for the whole of the life of the
college and of being the third oldest surviving flock of the breed.

Over this time the flock has fluctuated between 50 and the present
figure of approximately 150 ewes. Between registration and 1920 a
number of rams bred in Scotland were imported and used in this
flock and a single ram was imported in the 1940’s.

The period 1890 to 1900 was for the college the most active in
establishment of pedigree sheep flocks. An English Leicester flock
was established in 1894 by purchase of 30 ewes from P. C. Threlkeld, Flaxton. This had increased to 180 ewes in 1920, but declined
thereafter until, at a level of 14 ewes, it was dispersed in 1959. A
Shropshire flock, the first of the Down breeds, was established in
1894 by purchase of 23 ewes from John Grigg, Longbeach. This
flock was dispersed in 1936 after an extended period of unpopularity
of the breed which has continued to this day. Other short-lived
flocks were the Lincoln, established by purchase of 35 ewes from G.
Sutton, Winton, and dispersed in 1905, and the Suffolk flock estab-
lished in 1920 with 18 ewes given by Geo. Gould, Christchurch,
and dispersed in 1932.

A flock of Romney Marsh sheep was also established in 1895 by
purchase of 31 ewes from J. Fulton, Outram. This flock was dis-
persed in 1903 but was re-established in 1912 with sheep purchased
from J. B. Reid, Oamaru. The flock continues today at about 100
ewes.

In 1900 another of the flocks still present at the college, the
Southdown, Flock No. 13, was established with 12 ewes bought
from H. Pannet who farmed close to the college. Like the Border
Leicester this flock has fluctuated in size to upwards of 150 ewes. At
current it is the second oldest Southdown flock in New Zealand and
it numbers 90 ewes. Before 1930 several English-bred Southdown
rams were imported and in 1949 a further two rams were imported
by Hudson.

Corriedales came to the college in 1920 initially as a gift of 10
ewes and 10 lambs from C. H. Ensor of Whiterock. The flock has
been added to both by gift and purchase from many sources since
then. There are 125 ewes in the present flock.

The fifth breed carried by the stud sheep unit is the Dorset Down
and this flock was established by gift of in-lamb ewes by a number
of Dorset Down breeders. The flock was registered in 1966 with 26
ewes and now numbers approximately 150. Its establishment and
success is indicative of the preferences exerted by consumers of the
products of the sheep industry and the dictates of farm economy: in
short, a lamb with high growth rate and a lean carcase.

Almost from the commencement of pedigree sheep breeding and
certainly since 1895 the college has exhibited sheep competitively. Success in this respect is associated in particular with the now almost legendary studmaster J. Linton Senr. who accumulated over 2300 prizes between 1907 and 1928. His supreme achievement was at the 1926 Royal Show held at Auckland, when he won eight championships together with the premier award over all sheep with a Romney ram. A similar distinction occurred in 1950 when at the Royal and Centennial Show in Christchurch the college won the Walker and Hall Shield for most points in all purebred livestock. At that time P. G. Stevens was supervisor of college livestock and sheep were in charge of I. R. Oakley, now a highly prominent breeder of Romney sheep in his own right. In recent years, by comparison, competitive showing has been on a very modest scale but appears to be no less successful than in the past.

Since 1973 the Lincoln College stud unit has exported 90 pedigree sheep to seven countries. Before 1973 there is record of export of three Border Leicester ewes to China in 1967 and of 10 registered Border Leicester sheep, mainly rams, to Australia in the period 1950-54.

A feature of pedigree sheep-breeding at the college has been meticulous recording of production and conscious effort to improve productivity. Stevens certainly practised this from 1938 until his retirement in 1959 and it has been continued by D. S. Hart and A. E. Henderson, who since then have jointly supervised breeding policy. In 1959 a systematic recording and evaluation of growth rate in the Southdown flock was introduced and since 1967 the Dorset Down flock has been included. Selection and breeding policy is based on this evaluation. Since 1960 a necessarily more elaborate evaluation of productivity in the three dual-purpose breeds, Border Leicester, Romney and Corriedale, has been used. Progress has been made but it is necessarily slow and because of variable seasons, difficult to measure.

Achievements in productivity are less visually and publicly obvious than exhibition, sale, or export successes but the former has not been neglected and is indeed the cornerstone of ultimate success.

Breeding of pedigree sheep is a demanding occupation and none more so in an institution such as Lincoln College where, for effective teaching and demonstration, a multiplicity of breeds should be kept. The justification for this is often argued but it is clear from the use made of the present five flocks that they serve a very useful purpose and particularly as a means of contact and communication with the farming community. Successful sheep-breeding demands a deep interest and indeed some sort of dedication and without in any way neglecting recognition of the good services of many
people it is clear that historically and in the first instance the combination of Alexander and Linton, and secondly that of Hudson, Stevens and Oakley stand out. The achievements of C. A. Sutherland, present manager of the stud sheep unit, are clearly equal to those of some prominent former incumbents.

**Poultry**

For five years from 1905 the college was an agency in a Utility Poultry Society for the conduct of egg-laying competitions (p. 69). Subsequently for 30 years the poultry unit had haphazard management as experienced in most similar farm situations. Hudson, however, aimed for higher efficiency in poultry production and also for a possible contribution from the unit towards instruction and extension within the industry. Through the exigency of World War II the Government in 1943 was induced to provide a suite of modern buildings—brooder and semi-intensive houses, administration centre, and manager’s residence. The function was to produce eggs to alleviate the shortage caused by lack of manpower and the demands of the armed services. After the war the unit was handed over to the college and in the continuing management of J. L. Stark it was in the accredited flocks breeding scheme of the Department of Agriculture. Incubator hatching was conducted only to provide replacement stock, but scores of hatching eggs from accredited birds were sold to the public as well as table eggs marketed through commercial channels or used at the college hostel. Staff could buy meat at reduced rates, but not eggs. They had to buy them half a mile away. Stark’s work during 20 years (1943-62) was appreciated by the industry and the poultry conferences and refresher courses held at the college for 8 successive years from 1954 attracted annual attendances of about 150 producers to hear a programme of specialist addresses.

The profitability of the unit began to diminish after 1955 when student labour was no longer used. While Stark was manager, the unit was consistently in credit but after his death the enterprise began to languish, and was wound up in 1967. The college has no honour in this phase of primary production. Only three former students are known to have engaged in poultry farming; there are no records of contributions to research and poultry has never been accepted by the animal science department as a sphere of interest.

During the 1936-60 developmental period of Canterbury Agricultural College, the major buildings were either built or planned. Hudson, having been a student, was aware that unhappiness and unrest had often originated in the poor or inadequate food. Early in 1937 he had the kitchen remodelled and began to employ male
kitchen staff and provided staff houses. He did the same for key maintenance men, carpenters, plumbers, painters, electricians. Funds from farm profits, annual capital appropriations from the Government (through the School of Agriculture) resulted in 30 staff houses being erected between 1937 and 1951. Many of the houses were built under loans sanctioned by the Local Government Loans Board, but in 1950 Hudson had to ask the Minister of Education for a further £6,330 to enable the programme to be completed. This was rejected at first but he persisted and obtained funds when he wrote “during recent years the difficulties of keeping the college functioning as a residential institution have been almost insuperable, and have been aggravated by the difficulty of engaging men of good type and sound character, unless housing is available. The position is an entirely different one from that of a city college having a large potential labour force in its vicinity . . .”.

For 66 years the director and family had lived in the east wing of the original building, in quarters which at the outset were deemed spacious and elegant. These quarters became old and inconvenient and were too close to the resident students. Hudson did not give his personal needs any priority but despite war-time building restrictions, a commodious six-bedroom, detached residence “The Lodge” was completed and occupied in 1945. This residence was large, not palatial, but some anonymous newspaper correspondents aired views on this project in relation to the needs of the times. The student president, not under anonymity, ventured to ask if the Lodge was more important than employment of the funds on improvement of dining-hall accommodation for students. His inquiry was sincere, but being unaware of what Hudson had already done and was still endeavouring to complete, the president was both impertinent and unjust.

Hudson realised early in his planning that the charming old cricket sports field and surrounding trees must inevitably disappear under the projected new residential hall and refectory. In 1941 he arranged for the preparation of the 10-acre central area (former horse paddock) to become the present sports field, an area which has now come to have, in new form, a measure of the grace and beauty of the old sports field. Hudson Hall (he did not confer the name) and the refectory and kitchen were each planned and authorised before he left the college but he was not able to bring to fruition his plan for a library, or a lecture/research building. They were envisaged, however, and to provide for them, he again with reluctant firmness, had all the original trees fronting the north aspect of the college removed and the two parallel road entrances constructed, the western arm to serve Hudson Hall, the eastern to
serve a teaching building. Also in his mind was that the Springs Road entrances would conveniently and appropriately provide for the Alexander Memorial (p. 101). Hudson Hall took 4½ years to build, commencing in 1948. The foundation stone, like the Stone of Scone, disappeared for a space. The students, having enjoyed the prank, restored the stone to enable the Prime Minister, the Rt. Hon. P. Fraser, to perform the foundation stone ceremony on July 4, 1949. When this Prime Minister's successor of opposite political colour, the Rt. Hon. S. G. Holland, opened the building in 1953, he laid the foundation stone of the refectory, work then having been in progress for about a year. This building, of enormous benefit now as the college centre of provender and hospitality, was opened by the Governor-General, Sir Willoughby Norrie, in 1954. The commodious refectory hall was described in newspaper reports as probably the most striking example of modern architecture executed to that date on the grand scale in Canterbury. Student needs having been provided—sometimes by advancing scheduled meal-times—it was possible then to transform the refectory as a venue for large-scale formal dinners of distinction and grace.

Hudson Hall, with bed and study accommodation for 184 students and community rooms for up to 300 capacity, was fully financed from Government grant. In the building programme, Hudson Hall was completed before the heating and hot water services. Pending completion of the boiler-house, the M.O.W. provided a temporary service. Two small shunter-type railway locomotives were brought by road transporter from Kaikoura, erected in parallel on rails and connected to the steam ducts of the new hall. Despite enormous consumption of coal and regardless of gross atmospheric pollution, Choof and Chuff as they were known, failed in their duty. The engineers declined to make any further improvisation. The board, determined to have the hall in use and comfortable for the residents, had to use college funds to buy an automatic oil-fired boiler. The two locomotives with their antique stove-pipe funnels stood bereft, impotent and ludicrous for nearly three years. They attracted attention among several gatherings of visitors as examples of "public works". They were intended by students to be the cause of another good-natured "planned disorder" on the occasion of the official opening of Hudson Hall. The whistles, of penetrating, impudent tone and pitch, were connected and steam was surreptitiously raised by an unauthorised gang, but the musical honour intended for the Prime Minister failed because of mechanical difficulties in the connections. The students were disgusted at this ultimate revelation of impotence and had no regret when Choof and Chuff were sold for scrap and removed.
Lord and Lady Bledisloe, 1947, admirers of the College and of the attainments of its students.

The practical basis of the Diploma of Agriculture throughout sixty years when diploma students worked the college farms. The bond between horse and man was close (1938).
When the blacksmith was co-equal with a lecturer (1948)

During eighty-five years “Sportsday” was a major calendar event (1939).
Student volunteers 1914 (World War I)

Diploma Day 1940, more than half on leave from Army Service. (World War II).
Ashleydene farmers field days 1957

Above  J. W. Calder and A. H. Flay

Below  C. E. Iversen and A. H. Flay giving instruction.

(R. C. Blackmore)
THE QUALITY OF FARM MANAGEMENT INSTRUCTION

Above  A. H. Flay and H. E. Garrett (centre) at Ashleydene.

Below  J. D. Stewart (left) at work with V.F.M. Groups at Hunua (1969).
CLOSE IDENTITY OF STUDENT GROUPS

Above  Ski Club (1947) at Temple Basin in August vacation

Below  V.F.M. (1958) on instruction tour in North Island.

Governor-General (Sir Bernard Fergusson) accepting honorary membership of the Students Association (1964) (J. W. Henderson—President).
Afro-Asian Students 1963.

Visiting Inter-University Christian Fellowship (1974).
Outdoor student-staff forum.

(E. R. Mangin)

The Lincoln Union.

(R. J. Gourdrill)
STAFF WHOSE SERVICE WAS WIDE AND COMPREHENSIVE

Above left  Mrs Tabor, Dairy Supervisor, 1889-1905.

Above right  J. W. Calder, M.Sc., B.Ag., Dip.Ag., Lecturer, Professor (Ag. Botany) 1927-58, Assistant Director 1937-58.

Below left  Miss E. Lilburne, Matron, 1935-61.

Presentation of mural designed and painted (1969) by Lady Burns (right). Former council chairmen, T. D. J. Holderness (left) and Sir John McAlpine (right).

Farmers conference audience (1977) in Gillespie Hall.

(E. R. Margin)
Student car park (1968)

The same area occupied by the Burns wing and lecture halls (1976).
NEW ZEALAND AGRICULTURAL ENGINEERING INSTITUTE


Below  Equipment for mechanical harvesting berry fruit.

(E. R. Mangin)
The College hill property "Hunua", North Canterbury.

Beef cattle study—Ashleydene farm (1977), A. M. Nicol (left) and J. F. Anderson (Manager).

(E. R. Mangin)
Original chemistry laboratory, Ivey Hall—later dining room, now part of lecture hall.

Modern audio-visual aids instruction (Meat Inspectors course).

(E. R. Mangin)
Hudson had departed before these two major buildings were in use but they stand today as a tangible memorial to part of what he strove for during his period of service. He had also discussed with the New Zealand Federation of Young Farmers’ Clubs their hope to erect at the college, a memorial to members of the federation who lost their lives in World War II. The Young Farmers’ Memorial Hall cost more than the amount available to the federation, and the college council bore most of the total cost. Appropriately the opening function (1953) with the Prime Minister, the Rt. Hon. S. G. Holland participating, was conducted by the then Dominion president of the Y.F.C. Federation, an old student, O. J. Osborne (1946-7).

In his building plan, Hudson was unable to obtain high priority through Government capital grant for teaching buildings. An architect’s sketch plan lay unheeded, so he fell back on surplus former military buildings. The “tin huts” which became headquarters laboratories for microbiology, wool and animal husbandry were well fitted internally for their purpose but they remained in use for 20 years from erection in 1947—and one of them was still in use in 1975. The miscellany of redundant war service buildings included a complete kitchen, dining and residential wings with ablution blocks. Some of these are still part of the present-day Agricultural Engineering complex. Two more durable buildings for instruction purposes were provided—that in 1941 primarily to accommodate short course and rehabilitation students (still used in 1975) and the first agricultural engineering laboratory and machine theatre (1951).

Though there was satisfaction in the evidence of expansion of student numbers in the mid-1950’s and of staff to serve them, the building in which many of them had to work depicted improvisation in extreme. The staff-room was illustrative of the general state. It consisted of 480 sq. ft., part of a sheet-steel unit formerly used in the Pacific war zone, which had been retrieved, taken apart and returned to New Zealand by economy-minded people who knew that war assets and surplus could be put to peace-time use. Redesigned internally and with a kitchenette, it was a reasonable centre for small numbers but, in fact, was for 10 years the only tea-room in which refreshment was served to as many as 600 visitors annually; it was also the only centre of staff fraternisation. The staff tea habit was far removed from the social grace and elegance of a senior common-room, and yet visitors seemed to be fascinated by the fraternisation and unity of the staff as, between lectures, they jostled each other and raised their voices in the little staff-room. The commuters who ate their cut-lunches near a coke stove were in the
event, the post-war generation, who were reconciled to frugality, improvisation and adaptation, and did not protest at the deficiency of the resources; it was simply noted that improvements were being planned. Indeed, a great deal of time and effort, first by Hudson and then by Burns, were directed to this end, and when the Hilgendorf Wing was opened in 1968 senior and junior common-rooms served by a kitchen became fraternisation centres for the staff. These centres could not accommodate all, and several units and departments had become dissociated from "the common-room".

A major maintenance services building also provided under "the Hudson Plan" was the boiler-house with stand-by generating plant and workshops and the laundry.

A situation, not entirely trivial, developed through the major restoration of the interior of Ivey Hall in 1948—the first interior renovation in 70 years. It was deemed necessary to remove the wood panels which were the wainscoting of study rooms. These had acquired the poker-burned names of generations of students, and many pleasant hours of idleness had been given to the task. Before he gave up an attempt to curtail the practice, Alexander had collected a form of poll-tax for this desire of students to perpetuate their names. That did not disturb many who used only one wall panel at a cost of 2/6, but L. W. McCaskill, more prone to spread himself, had used up seven panels for his name at a cost to him, substantial at the time, of 17/6. This tapestry of human history was all obliterated, plastered and painted over, as were the erstwhile famous study door labels, the Vatican, Stagger-Inn, Paradise Alley. There was no place for sentiment either, a few years later when the grain shed with equipment for seed-cleaning given to the college in 1926 by wheat growers and grain merchants had become redundant and was demolished. Year by year, students who had worked there had neatly inscribed their names, using bag stencils. It was estimated at the demolition that there were at least 1100 names covering every inch of the walls, and placed by the intrepid on the inside of the roof.

After 75 years, Canterbury Agricultural College was a township of 112 buildings for farm and instruction purposes, together with nearly 50 staff houses, all within a reticulation of roads and essential domestic services. It was an extraordinary conglomeration of old and new in staff houses, farm buildings, temporary student and staff accommodation, distributed among the impressive Hudson Hall and refectory complex and with the original building, venerable though somewhat dilapidated, at the centre. In a sense it was its own local body authority, required to provide water and gas supply, fire-fighting, roading, drainage, sewage disposal, street-
lighting. Hence the large maintenance and services staff. The illustrations contrast the comfortable placidity of the 1930’s with the dynamic expansion which was commencing in the mid-1950’s. The physical plant had just managed to keep pace with the needs of staff and students, whose activities during the period we should now consider.
Parallel with the post-war expansion within the college there was an imaginative spate of extension activity, and an involvement of staff in research projects.

The extension work flourished because the senior staff regarded it as a duty and privilege to transmit a message to the community and in McCaskill there was a sparking and co-ordinating member who influenced and encouraged his associates to think and act in terms of needs beyond the college confines. This capacity was exemplified in his production of the Rural Education Bulletin, published monthly February–November inclusive, between 1946 and 1960. His idea was that it should provide source material and information for school teachers committed to rural courses. During the 15-year-period, over 500 individual articles were published and it would be difficult to name a member of the academic staff who did not contribute. The editor (McCaskill) succeeded also in bringing to print the yeoman wisdom of men who had written nothing in their lives, beyond personal letters, for example A. K. McLay’s knowledge of stock (“Never trust a bull...”). To a large degree the contributed articles incorporated the interest, thinking and accomplishments of Canterbury Agricultural College at the time. The R.E.B. provided a medium of publication for many features which would otherwise have been lost, including the scripts of some admirably original radio talks by staff members. One of these was “Old Bill’s Story”, a cattle drive from Marlborough to Westland in 1876, which McCaskill managed to have scripted. This was reprinted as a booklet and several thousands sold (now a collector’s piece of high purchase value). Many of the articles were of substantial length and have now attained the status of classics of a type, e.g. the series by P. G. Stevens on development of livestock in New Zealand, H. E. Garrett on small seeds in farm management (the largest single contribution), K. M. Doull on descriptions of com-
mon insects. The dissertation by Garrett and McLay on implements and cultivation was the first treatment of this subject ever to appear in a New Zealand publication and has not as yet been surpassed. David McLeod's (p. 48) "High Country" was a comprehensive story on South Island mountain lands. It stands on its own merit and possibly encouraged that talented farmer to continue writing, to produce several admirable books.

Anyone browsing through the 15 bound volumes of the R.E.B. could only be appreciative of the range and quality of the articles and of their influence on teachers and general readers (600 copies of each were distributed). It is surprising that this valuable publication was permitted to lapse, even though continuation "after McCaskill" would have imposed an invidious task on his successor.

The Annual Review, first published in 1948, covered reports of activities at C.A.C., details on courses, extension, research, the farm and general. McCaskill, again, was able to persuade his colleagues to contribute and he saw the contributions through to publication, as did A. T. G. McArthur from 1961 to 1968. The usefulness of each review during the 20 years of publication was enhanced by the illustrations of R. C. Blackmore, visual aids officer, whose photographic skill and artistry benefited so many staff members. An invaluable repository of condensed information, the review was the only record of several research studies, but as with the R.E.B. and agricultural bulletins, this publication lapsed.

Lecture tours by staff groups to farmer districts were asked for and provided from 1945. In fact, six members were scheduled to commence a Southland tour at Invercargill on the day World War II ended in 1945. The day's programme was abandoned to enable the visitors to participate in community rejoicing, but, a little dizzily, next day it was down to business. These district extension tours, mainly in Southland, Otago, West Coast, Nelson, Marlborough, year by year in May or August, involved a team able to cover most of the contemporary farmer problems and though strenuous, they were as beneficial to the contributing staff as to the audiences. Southlanders were most receptive and had particularly good value (there was staff competition to go to that province). Travelling was arduous. The staff speakers were often a little sluggish or inhibited at the afternoon sessions, as they were unaccustomed to the Southland hospitality of huge midday dinners, roast hogget, swedes, pudding, at a farm home. They tended to arrive though at the evening meetings well primed to give of their best. This tended to be nurtured by the hospitality provided by the host organisations or by some amusing encounters as, for instance, when Walker was
persuaded to lie on his back while a farmer with a personal inclination towards divining, kneeled over the worthy professor of soils and using small pieces of wood on a thread, endeavoured to determine what kind of illnesses the subject had, or was likely to be prone to.

Individual lecturers had the diverting experience of listening to each other; by the end of the week each could almost give the address, including the timed jokes, of a colleague. On returning after such a week the fraternal bond among the staff had been strengthened; members had learned from farmers facets of regional problems. On the evidence that five Southland tours were conducted by invitation in the twenty years after 1945, the appreciation of the large audiences and the benefit to the industry were emphatic.

Linked with these communications to the outer districts were the programmes of field days held on the college farms—usually one at Ashley Dene and one or two at Lincoln. The former were strongly supported when the Ashley Dene development was so directly of interest to farmers, working under comparable conditions. In 1955, two field days attracted a total of 1200 farmer visitors, in the following year, 1500. Between 1955 and 1960 visitors to the college intent on specific agricultural and horticultural subjects, mainly in small groups, ranged between 4000 (1957) and 6200 (1960). Special field days for relatively small groups such as schools, which were almost entirely conducted by McCaskill and his assistants, annually numbered between 50 and 60 in that period. McCaskill described the state of affairs “... take it for granted that Lincoln should provide lecturers for meetings, organize district tours, hold field days, give radio talks, write newspaper articles, make displays at shows, and offer the college facilities for all kinds of gatherings. But present activities are the result of a long, often weary road for recognition of the fact that the college considered it had a responsibility and a duty to farmers in implementing an extension programme”. He recalled that just after the war, farmers were clamouring for advice on new systems in farming and an attempt was made by certain senior officers of the Department of Agriculture to have the college staff officially directed to keep within their walls and farm fields and to concede all extension work to departmental officers. Calder and McCaskill were deputed by Hudson to debate in Wellington the rights of the college to take the staff message out to the farmers, but the issue was put to test in 1949 when the Prime Minister, the Rt. Hon. P. Fraser, visited the college. He was told by Hudson that there was a strong move by the Department of Agriculture to keep college staff out or away from the farm community. Understandably, the Prime Minister was astounded and he
assured Hudson that he would brook no interference with Lincoln's right to do what it saw as its duty and right, in farm extension work. With this encouragement, Hudson and Coop then advocated a forum for farmers. Support of leading farmers was assured and a group of them formed a committee* to run a farmers' conference in May, 1951. Participation had to be by district nomination for a few years, as the only accommodation available was the Memorial Hall (seating fewer than 200). This problem was alleviated when the refectory was opened in 1955, but it was difficult for the college to organise that hall for meals, alternating with conference sessions. From 1962 the gathering used the Lincoln Community Centre, until the Union Hall became available 10 years later. Daily attendance at some conferences has sometimes exceeded 500 but the real strength of the Lincoln College Farmers' Conference has been the high proportion of papers presented by farmers themselves, and the calibre of the chairmanship. In succession, they have been farmer leaders in D. S. Studholme, Coldstream, Mid Canterbury; John Hunt, Wanaka; S. C. Bowmar, Gore; L. P. Chapman, Mt. Somers; G. S. Slater, Geraldine; S. M. Wallace, Haupiri, West Coast; N. Maxwell, North Canterbury; D. K. Mackenzie, Ealing, Mid Canterbury; J. O. Acland, Mt. Peel; A. R. Wilson, Ikawai, Waitaki. McCaskill was an indefatigable organising secretary for the first 10 years and was honoured by the conference when he retired. This conference has become a forum of the utmost value, political, scientific and economic spokesmen joining farmers in the programmes to make a national impact of great benefit.

Other organisations began to arrange conferences at the college and Bevin and Burns organised a national weeds (control) conference in 1948, repeated in 1950 and 1952 under Iversen's guidance. From this grew the N.Z. Weed and Pest Control Society. Then the poultry farmers and wool producers, the professional societies and many others began to use the physical and staff resources at Lincoln. The wool conference initiated by A. E. Henderson (p. 202) in 1950 attracted up to 100 producers of wool. The programme that Henderson planned and later developed within the South Island Wool Association that he fostered was devoted to technical and trade issues. The annual conference continued until 1968, then lapsed until 1971. The college involvement then ceased as the newly established Wool Research Organisation of N.Z. (p. 202) was deemed to have responsibility. The organisation however, did not maintain the pattern of the former conference. During this same

* The foundation committee was J. H. Grigg, Allan Henderson (Dip.Ag. 1933), H. F. S. Houghton (Dip.Ag. 1924), A. C. Hurst, J. R. Little, T. A. McKellar (Dip.Ag. 1928), D. Studholme, C. W. H. Tripp, M. Turton.
period Henderson also encouraged the N.Z. Wool Board to hold at the college, the South Island refresher courses for shearing instructors. These involved up to 40 instructors annually, first under Godfrey Bowen, but they lapsed after 1960 largely through increasing difficulty in getting sheep from the college farms at the time of the courses.

These were among the groups based on the college that resulted in the 6000 vocational or specialist visitors provided for during 1960.

The college is now only one of perhaps a dozen venues for conference, seminar or field day, but it is interesting to note the assemblage of experience and talent brought to the programmes and to perceive that, whether it be a conference at Invermay or Invercargill, a convention of the Institute of Agricultural Science or some other agriculture-based organisation, the proportions of speakers from Lincoln College, as staff or graduates, is very high.

The short-course work also continued and was expanded to the limits of improvised accommodation. There were 20 such courses in 1955, with 600 participants. In addition, programmes were provided for post-primary pupils and teachers, and for officers of government departments and other professional organisations.

The annual visits of T. Morrow as wool instructor, 1920-45, were keenly awaited by students, for his wool-classing instruction, integrated into the diploma course at shearing time, was of high practical value. He also brought with him year by year the latest in colourful scandal and anecdote from the outback of Australia, where it was his custom to spend the winter. In 1944, McMahon brought a balance of science to supplement the art of handling wool. In addition, to work with full-time courses, the annual 12-weeks wool course was started. Initial entry was 11 and since then A. E. Henderson and his assistants, notably J. C. Simpson (p. 116) from 1951, have instructed an annual inflow of about 25 men and occasionally some women.

The course at the college to train soil conservators came in part from the inspiration McCaskill and Burns had separately derived from pioneer conservators of the United States, and with whom they retained close friendship. Their interest was quickened with the passing of the Soil Conservation and Rivers Control Act 1941, and the establishment of regional Catchment Boards in 1944. McCaskill was also a foundation member of the North Canterbury Catchment Board, a member of the Soil Conservation and Rivers Control Council and the National Parks Authority, and was emerging as a leader in public attitudes to conservation in New Zealand. Some Lincoln graduates had already become involved, notably D.
A. Campbell (Bledisloe Medallist p. 326) R. D. Dick, D. R. Wilkie, A. F. Greenall, G. G. Calder, J. H. Stone, J. W. Ramsay. Their success came from foundation knowledge and they learned the requirement of a new vocation as experience within it expanded. Hudson had agreed with McCaskill that the college should be a centre for producing conservators for the jobs being offered by the Ministry of Works and regional catchment boards. The consequence was another co-operative staff activity. Instruction was given from 1946 to a succession of young men (there were intakes also in 1949, 51, 54, 59) who came as returned soldiers on rehabilitation assistance, or as ordinary students on education bursary, who were joining an emerging profession. What the college and staff such as Burns, Calder, Riddolls, Flay and McCaskill achieved in this work and how the graduates of the courses (41 completed) have served the country is set out in McCaskill’s history of conservation in New Zealand. After McCaskill moved to other work (p. 205) this subject was within the supervision of B. Douglass (p. 280) S/L in soil conservation, attached to the Department of Agricultural Engineering.

A distinctive feature of Lincoln instruction (soil conservators included) was the field trips—taking students to see and to discuss on the terrain of farm field or mountain slope. This tradition still persists notwithstanding the large numbers, and probably originated from the way Hilgendorf began to introduce students to field study. He wrote: “When I went to Lincoln (1901) I bought a pushbike and was very proud of it. On Sundays I used to take excursions with students to the ninety-mile beach at Lake Forsyth, to the outlet of Lake Ellesmere, up to the Waimakariri at Courtenay, round Gebbie’s Pass, Governors Bay. Once in 1901 we went to Mt. Torlesse (50 miles) starting on a Friday with all camp equipment on our bikes . . . One August vacation I started off with five students for Hokitika. Our plan was evening meals and a bed at hotels, breakfast and lunch on the roads”. (He described this trip in detail, the Ransteads—W. L. and J. N.—also being in the party). In 1906, Hilgendorf and students went to Mt. Cook, using train to Fairlie and then coach and horses; also “we sent pigeons to Pukaki to say how many for dinner that night and from the Ball Hut we sent pigeons to the Hermitage to say when we expected to be back”.

Hilgendorf and his college companions (including Calder after 1923) went into the open whenever possible, drawn by a love of environment and habitat where they made their first ecological studies. Once they had a pack-horse in the Upper Waimakariri, camping on tussock flats while waiting for the flooded river to
subside. His memoirs continued: “We built a raft of 14 petrol tins in a frame, tested it in the college baths and trucked it to Cora Lynn, the railway station closest to the river”. Charles Hilgendorf and Calder were engulfed in the water five miles downstream, but a few weeks later the redoubtable parent and his younger son, Murray, retrieved the raft and 50 years before jet boats, succeeded in negotiating the Gorge as far as Staircase, where they abandoned the raft and returned to Cass by train. (Canterbury College biological station was then base, as it was for later generations of staff and students:) He wrote: “Next year a party of four tried it but three of them were drowned, Gerald Carrington among them. I think they had much higher and rougher water than we had . . .”.

Calder had noted from his mentor the instructional and human value of field excursions, so did other staff in the line of succession. From 1945, two staff members regularly organised a bus-load of students for all day (Sunday) or week-end trips, generally to the high country, and those who had these experiences have testified to their value. Some of the groups willingly gave aid to a cause, as for instance, the working party of students and staff including the farm superintendent, C. P. Tebb, and fencing contractor, S. C. Harris, which under McCaskill’s direction in 1948 erected a permanent post and wire fence at Castle Hill to enclose within 15 acres one of a rare New Zealand indigenous species, *Ranunculus paucifolius*. The number of plants, from 32 recorded in 1948, is now approximately 300. The basis of the arrangement was that the Department of Lands and Survey made funds available to purchase the materials and Tebb welcomed the chance for participation by second-year diploma students, an outstanding example of field trip with instruction, in conjunction with preservation of one of the world’s rarest plants.

The farm management and field husbandry people were not lagging. They made trips much more instructional, imposing a sharp discipline, students having to produce detailed land-use reports and budget accounts of farm properties on which a full day had been spent. This programme started with Bevin and the first V.F.M. group of 1938, who had the use of a new truck, fitted for a class group of up to about two dozen—and with approved student drivers. For several years these were former drivers who had served in the desert in the Army Service Corps—even the Long Range Desert Patrol. They were skilled and competent, and included B. M. Smith, who kept his head on a trip to Arthur’s Pass to ski. Those under the canopy did not know what had happened other than that the vehicle was careering down the steep Craigieburn cutting at high speed. The brakes had failed but the driver did not panic, even
though the truck was moving like a rocket at the foot of the descent. It was fortunate that in those years of light traffic nothing was approaching.

The farm management field instruction became a consummate art, defined first by Bevin and Flay from whom Garrett and Cooke learned the technique. Indeed these two perfected it, moving among the group to point out the object lesson, encouraging response and reaction, during a pause and with the farmer or manager in attendance, getting him to disclose his thoughts or ideas. This has continued to the present day when those who learned from Garrett and Cooke—Frizzell, Ryde, McIvor, Tate and so many others can conduct farm management, agronomy and animal husbandry studies of utmost instructional value with groups requiring up to four buses. The annual V.F.M. (later B.Agr.Com.) field test required a staff member to convey each student, at the latter's direction, to a designated farm where the student was required to conduct his own interrogation of the farmer during a walk or drive over the whole property. After a generous lunch with the family, the afternoon was devoted to discussion on budgetry and financial details. A week or so later the student was required to deliver to his tutor a detailed report on management and capital structuring of the farm together with a documented programme for development.

The Field Trip has become a pivot in the extension programme and a time was approaching when travelling costs were too much for students, but the council decided to subsidise students in travel costs. Notwithstanding the large numbers now involved, they are a distinctive feature of courses, occupying a high proportion of time. They account, in part, for the effective integration in teaching of theory and practice.

Whereas Hudson had enjoyed a cordial relationship with some heads of government departments, notably those interested in the V.F.M. diploma, he was not on the same wave-length as the research leaders. The conflict lay in the manner of using research grants. Hudson and other university heads at that time, wanted them put under their control for distribution whereas the D.S.I.R. had enunciated a policy that favoured:

1. Establishment of branches doing research in close proximity to Lincoln (and Massey) and a policy of full mutual collaboration.
2. Making grants to selected members of the college staff for research that would be of assistance in teaching.
3. Interchanges of staff between college and branches of the D.S.I.R.; more use made of departmental staff for limited courses of lectures; more use made of experimental areas of the branches near the college for tuition.
Despite his personal inhibitions, Hudson did not impede the efforts of F. R. Callaghan (p. 54) to bring these relationships to fruition. Indeed, Callaghan has said that the agricultural colleges showed the way to the other universities.

It may be remembered that all the leaders of D.S.I.R. units at Lincoln were since 1938 invited by the college (Professorial Board and governors) to act as honorary lecturers within their specialisation. Increasing use was made of nearby D.S.I.R. experimental plots or laboratories for student demonstration. On some research projects there was a synergistic pairing of college and D.S.I.R. members, while many college staff were appointed to statutory and ad hoc research committees. Hudson, more from a sense of propriety than of enthusiasm, was a member of the Advisory Council D.S.I.R. 1941-7, but he resigned when his views on disbursement of funds to the college began to conflict with those who controlled the purse strings. His successor, M. M. Burns, who was in closest possible accord with all departmental people whose attitudes and decisions impinged on Lincoln interests, also served on the D.S.I.R. Council and was chairman from 1959 to 1963.

There were two distinct periods of D.S.I.R. research grants: in the first, 1927-38, the grant was a statutory one and in the period totalled about £28,000. Between 1938-60 annual grants were made to selected college staff, who had submitted research proposals, with a budget of requirements and an obligation to report on progress. Most of the finance from the research grants was used for the salaries of technicians—the extra hands of the research leader—but the technicians had a lack of security and their salaries were less than those of science technicians then employed in the State services. In this period, the D.S.I.R. funding of staff research exceeded £115,000, which was substantial money given to people who were in truth, part-time in their research activity and it was substantial funding in the context of the low national expenditure in 1951 on agricultural research. W. M. Hamilton, later Director General D.S.I.R. stated that only 0.4-0.45 per cent of the gross value of agricultural production was then being expended on research. Support from other research funds was, however, becoming increasingly available—again directed towards individuals according to their submissions or proposals. Thus between 1955 and 1960 the Nuffield Research Committee provided £1500 per annum, the N.Z. Wool Board up to £3000 per annum, N.Z. Veterinary Services Council up to £1000 per annum, and there was a minute sum £100-200 per annum from the research committee, University of New Zealand. In one of his reports the chairman of that committee (L. J. Wild), beset then with inadequacy of university research
funds, said that it was fortunate that the Agricultural College had been able to obtain research funds from sources other than the university. Aid and stimulus were also being given through the steady movement towards the college of American university scientists, whose visits for periods of up to one year had been sponsored by the United States Education Foundation in New Zealand (the Fulbright Act, U.S. Congress). Between 1949 and 1959 there were fourteen such visitors most of whom had specialised interest in aspects of animal or plant science and rural education. Much was attempted but there were some distinct failures. Most staff murmured about "getting some research done" but in this review emphasis must be confined mostly to the evidence of attainment recorded in researches that qualified for publication in critical scientific journals. This should not be the sole criterion however. Increasing numbers of masterate, and a few Ph.D. students were registering and what was revealed in their theses in many cases, stemmed from guidance given by a staff member working within a research grant. Further, a great deal of well-conducted research was reported by most senior staff in the proceedings of various New Zealand conferences. The research work which is referred to in general terms hereunder, is documented with specific references in the manuscript deposited in the Lincoln College library.

Soil Science
The gain to New Zealand of having a scientist of international standing was demonstrated by the work of T. W. Walker who was additionally able to inspire a team effort with Elphick, Adams and Orchiston. Orchiston had joined the soils group after the disestablishment of a long-term fertility trial that Burns had initiated in 1947. This had been intended to continue 16 to 20 years with the objective of studying interaction of soil at different levels of fertility induced by several cultivations, rotations, fertiliser treatments on the wheat crop. There were 256 treatment combinations and though Burns had obtained approval of the basis of the project from biometricians at Rothamstead (U.K.) he really left a sickly baby in the care of others after he had relinquished his lectureship. Progress was reported annually between 1949 and 1953, but Walker, on taking up his appointment, was not happy with this particular legacy and he readily accepted Hudson’s request to report on justification for continuance. He had also become aware that a visiting pedologist of international renown (E. Crompton) had disclosed that the project was not soundly based, in that in the field where the plots were established there were three different soil types and that
continuation would engage the total resources of the soils group for many years ahead, on an exercise which had not been part of their planning. This research investment lapsed. The Canterbury Agricultural College soils team produced some of the best fundamental research ever accomplished at Lincoln. The published work on nitrogen sulphur cycles in grassland soils and other topics attracted world recognition.

Animal Husbandry & Science

Before he left for Ruakura, C. P. McMeekan published “Techniques in meat production studies”. This was the kind of work he had conducted at Cambridge University and the continuation of it at Lincoln had the objective of finding the best system for grading sheep carcases, to enable the best quality meat to be delivered, in war time, to Britain.

P. G. Stevens did not regard himself as a research man in the conventional understanding of the term, but he had developed an unfathomable depth of understanding of livestock. F. R. Callaghan once said “P. G. Stevens was of the same influence in sheep in the national scene as J. N. Ranstead was in cattle; they were of like kind in their knowledge and application of it . . .”

D. S. Hart, using a Nuffield Research grant made original studies on wool growth response to hormone therapy. Apart from the intrinsic scientific merit of Hart’s experiments that revealed enhanced wool growth through injection of sheep with thyroxine, there was some premature over-exposure of the project. Dr. Burns, at that stage in his career strongly disposed to name people in public for meritorious service, made specific reference in a graduation day report to the anticipated economic significance of the discovery. The college also registered a patent provisionally, and negotiations were conducted with the Glaxo Company, which knew how to produce L-Thyroxine. Meanwhile, Hart and Coop in their continuing research, while confirming the facts of stimulus to wool growth and higher yields, had come to the conclusion that these were obtained at the expense of body weight of the treated animals. Thyroxine benefits were apparent only in sheep in top condition of thrift, through feeding; costs of the treatment, including application, were also high. Sir Harry Japhcott, senior executive of Glaxo, came to the college to discuss the commercial proposition, after which this quietly lapsed.

I. E. Coop, though increasingly involved as the administrative second-in-command of the college, maintained his research with undiminished vigour. In 1959 he reported on his inter-breeding of Border Leicester and Romney with the objective of producing a
high fertility Border-Romney breed by interbreeding the crossbreds. This notable first in Lincoln history culminated in the establishment of a new breed registered (but not through the wishes of the scientist) as the Coopworth.* This helped to maintain a balance in farmer approbation with earlier sheep-breeding success at Massey College, the Drysdale and Perendale breeds. Coop's work was recognised in the award of the Royal Agricultural Society's prize for the most meritorious animal research during this period. The society commendably accepted the recommendation of the independent judges but possibly members of the conservative society did not like having to accept an example of the success of cross-breeding. At any rate, no further awards of the kind were made. While they were current, Lincoln men had marked success, not only Coop but also Walker and Adams in Soil Science and Philpott and Stewart in Agricultural Economics.

**Wool Science**

Sidey's work was noted earlier.

During the short period (1941-6) McMahon was at the college on secondment from D.S.I.R. some foundations were established on which Henderson has built much further. McMahon reported on progeny testing and initiated a comprehensive survey of wool production in commercial flocks. Designated "Wool Metrologist", he sought data on the characteristics of the fleece.

Henderson's work in the period under review, funded annually by the N.Z. Wool Board, continued on the basis of metrology and fleece characteristics.

**Veterinary Science**

In the second period of McLean's association with the college he investigated the problem of low non-fatty solids in milk and progeny testing in sheep. Stevens's work (1949) on merit-sire testing on Corriedale sheep had been almost concurrent with McLean's (1951) progeny tests based on cross-breeding. The former was of interest in that it appears to have been the first occasion members of a breed society in New Zealand had permitted their stock to be subjected to that kind of study.

McLean's studies on progeny testing of Southdown sires by cross-breeding were the first of such type to be conducted in New Zealand.

Other researches conducted by McLean and Thomson involved the study of post-lambing lameness in sheep, vaginal prolapse and

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pregnancy toxaemia in ewes and the perplexing disorder known in
the farming community as “ill-thrift”. This latter study involved
numerous trials with a variety of trace elements and anthelmintics,
and the effects of pure species pastures on growth rate and other
factors, and resulted in some of the earliest reports on growth-
responses to selenium in lambs and ewes, and the levels of oes­
 trogenic activity (phyto-oestrogens) in white clover and lucerne.

For a number of reasons, the more important of which probably
are improved pasture species, better pasture establishment and
management, the maintenance of adequate dietary levels of cobalt,
selenium and perhaps copper, the availability of efficient anthelm­
intics and efficient veterinary diagnostic and advisory services,
ill-thrift of the 1950’s vintage is less seen now in Canterbury and
other parts of the South Island. For this, the research and extension
activities of the college as a whole can take some credit.

Agricultural Zoology
L. Morrison had earlier completed work (with G. B. McLeod) on
the possible use of Derris in sheep-dips but his chief interest was in
regular surveys of the occurrence of insect pests of crops. He was
co-author with Blair of the D.S.I.R. bulletin “Wheat diseases and
insect pests”. K. M. Doull contributed extensively to the rural
education bulletins and published a paper on cockfoot thrips while
in his short period of service. L. J. Dumbleton (1955-7) published
several entomological papers on the group Aleyrodidae, and a paper
on Coleoptera-Cerambycidae.

Microbiology
I. D. Blair had earlier published several papers of an agronomic
nature and his post-graduate work on aspects and activity of Rhizoc­
tonia solani in soil published overseas attracted notice for a long
period as being basic in some concepts of the ecology of soil-borne
pathogens. There followed a number of plant pathological studies
and “Techniques in soil fungus studies” and several papers on
chemical disinfection of farm seeds. There was also a paper in a
commemorative issue of the Canadian Journal of Microbiology
“Bacteria in clover root tissue” (Blair and M. N. Philipppson) and a
textbook was published “Micro-organisms and human affairs”.

A. P. Mulcock contributed to plant pathology (“A disease of
Manuka”) and to the subject of food spoilage (peas). Then he set
about defining little understood phenomena of micro-organisms in
the sheep fleece. The work was funded through the Wool Board
grant to A. E. Henderson and there was distinctive success in this
effort. This work on micro-organisms in fleece wool was the basis
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of Mulcock’s Ph.D. thesis, one of the last conferred by the University of N.Z. (1961).

Field Husbandry-Plant Science

The experimental work financed by D.S.I.R. grant on subterranean clover, lucerne-grass mixtures at Ashley Dene by Calder and Iversen was utilised a great deal in conference and field day programmes. A general report on lucerne species by Iversen was published in 1965.

Engineering

A. W. Riddolls, G. G. Lindsay and D. L. King also benefited from the annual D.S.I.R. grant. They reported on aspects of machinery testing, tractor safety, spray irrigation and damage to seed in harvesting.

The efforts to produce and market a ditch-cleaning machine were intricate and at times dramatic. Constructed for attachment to a tractor, the device consisted of an endless chain moving over a series of rollers and one driving sprocket, in a vertical plane at right angles to the ditch. The project, viewed with scepticism by other staff members who wanted a larger share of the limited research money, was reported on from 1947 and the machine was formally patented in 1952 followed by negotiations for manufacture and sale. (Trade name “Lincol”). This action was opposed, initially, by some local farmer organisations, who protested at the rights being conceded to private enterprise, though how they hoped to get use of the machine otherwise was not clear. The story is of interest, pointing to the problems of development of an invention by college staff to a stage where it is manufactured and sold.

Equipment was lent by Gough, Gough & Hamer Ltd. Christchurch, to assist the research and this firm was given rights to manufacture. A licence for the rest of the world was granted to an Australian firm, but its product did not perform to the standards laid down. The Registrar, H. G. Hunt, was responsible when overseas in 1956, for delicate negotiations which led to withdrawal of the Australian licence and for those that resulted in the rights being taken up by Aveling Barford Ltd., Grantham, U.K. Ten years later he tried to obtain payment of royalties due, especially those that should have been derived from sales in Europe.

An expenditure of almost £1000 was incurred in getting a prototype to the U.K. for testing and approval by the Peterborough machinery-testing centre of the British M.A.F. Approval was obtained, and with a complimentary report. In 1957, the U.K. manufacturers reported that 54 of the machines were in use in Europe,
including “a large number ordered by the Polish government”. Twelve units were also reported to have been shipped to Australian orders in 1958. The New Zealand manufacturers had sold four machines by 1956, but two years later said they would prefer to act as agents to import machines made in Britain. The royalties received exceeded all costs of the patent development, with a payment to the inventor, D. L. King, and with surplus set aside for the development of new patents.

It had been a tenacious effort, first by Riddolls and King, but in his endeavour to give back to the community a return in practical form of its investment in research, Hunt had shown how the administration can be required to carry on at a point where researchers think the job has been completed. The protracted legalities afforded an abundance of work also for the College solicitors and for the patent attorneys among which an old student, J. E. L. Baldwin (Dip.Agr. ’21) was a principal. Mr Hunt said, “... in all, I estimate about three months of my time was spent in endeavouring to arrange manufacture under licence. If all time was charged out it produced a magnificent loss!”

**Horticulture**

Challenger and Glazebrook drew upon no specific funds for research other than what they could derive for this purpose within their general departmental authorisation but they did produce some short papers on techniques.

**Farm Management and Economics**

I. W. Weston, as well as producing useful textbooks, was able to accomplish economic survey work, distinctive from his colleagues in that his researches had no outside funding whatever. Weston was another Lincoln “original”, meaning that in his specialisation there was no one like him before, or since. Immensely popular as a lecturer, he had a whimsical style but tended to confuse rather than enlighten. When he retired he recalled that in 1928 when he became engaged mainly in farm costing the study of economics was regarded as somewhat radical and to presume to talk about the inviolable institution of money and banking, would be regarded then as a form of disrespect. “Yet today”, he said, “the youthful economists consider devaluation as honourable... a person who waters the milk is still sent to gaol but a person who waters the currency usually gets highly honoured at the time...” He and a number of students achieved things that appear to have been underestimated and unheralded. Reference has been made to Fleming’s Mid-Canterbury Survey. A. F. Greenall continued this and V. B.
Wallace, also in 1936, made a report on cocksfoot seed production on Banks Peninsula. C. E. Ballinger went by horseback through high country properties of Mid-Canterbury and his work warranted publication, "Sheep production on the Mountain Country of Ashburton". Later, three further excellent surveys were reported. These were

A. C. Norton 1951 (later reserves administrator, North Canterbury Catchment Board) on land utilisation and management in the Mackenzie Country;

M. Nelson 1952 (later an economic research adviser, the Ford Foundation, Mexico), on sheep farming in Waipukurau; and

W. O. McCarthy, 1954 on West Coast farming;

H. E. Garrett was author of "Present and future farm production in North Canterbury".

There was about to be an explosive development in agricultural economics at Lincoln, but a start had been made in this period by B. P. Philpott and J. D. Stewart, "Income and productivity of N.Z. farming 1921-56". This co-operative work between Philpott and Stewart was initiated while Philpott was with the Economic Service of the N.Z. Meat and Wool Boards, but in 1959 the authors were awarded the Royal Agricultural Society prize for the best work in published agricultural economics over the preceding five years.

Even before M. Cooke* became an authority on valuation, information was being assembled for use in the V.F.M. classes and this was published in the third period of the college history. It was largely derived from Cooke's research activity commencing in 1945.

A significant national development from the farm management & valuation department was the farm improvement club movement. Farm management, as distinct from applied husbandry, primarily originated at Lincoln. As an extension service it had been earlier defined by a number of Lincoln graduates who expressed their ideas in districts where they had become familiar with the local situations. Among these pioneers were W. C. Stafford (Dip.Ag. 1926) and C. C. Leitch (Dip.Ag. 1921) in South Canterbury; J. E. Bell (Dip.Ag. 1924) Auckland; C. J. Hamblyn (B.Ag. 1924) Manawatu; A. V. Allo (B.Agr.Sc. 1933) Bay of Plenty; G. L. Banfield (B.Agr.Sc. 1940) Waikato; A. B. T. Jordon (V.F.M. 1955) North

Auckland. Of these kinds of men, H. E. Garrett said they were successful because they were able to grasp at the fundamentals of their district—land, climate, the farmer and his limitations and his financial circumstances. With these in view and not forgetting technical agriculture, knowledge and developments, these farm advisers drew up a plan of action which became a blue-print for development. Garrett said: “This is real farm management; no wonder it was successful and the friends of the recipients clamoured for more. This type of assistance takes a considerable amount of time and the existing advisory services could not cope, only in hundreds when the demand existed in thousands”. From this situation, and under the influence of Lincoln staff, Farm Improvement Clubs were started, the first at Franklin, South Auckland, with R. T. du Faur (V.F.M.) as adviser. The pattern was for 40 to 50 district farmers to incorporate and employ their own adviser who had in his outlook “the whole farm approach”, learned from Flay, Garrett, Cooke and company. In 1959 there were eighteen F.I. Clubs in New Zealand from the Bay of Islands to Mid-Canterbury, 13 of them with management advisers who had graduated (V.F.M. or B.Agr.Sc.) through the farm management department, C.A.C. By 1967 there were 63 farm management advisers at work within clubs in New Zealand. Forty-five of them held the V.F.M. diploma and eleven the B.Agr.Sc. degree. Many others had been earlier drawn to Australia and had become highly esteemed in their farm management and consultancy enterprises, especially in Western Australia where up to 40 old students could be readily assembled for gatherings of the Old Students’ Assn.

Between 1937 and 1960, 63 masterate students graduated. These were the potential research men of the future. They had elected to study in the subjects where they could perceive the staff were research-minded and active. Plant science, soils, microbiology and animal science had been the most heavily engaged in attending to the supervision of research students. The graduates were subsequently readily recruited for professional work, some now in the highest level of research leadership within New Zealand and overseas. The supply was well beneath the range and total of opportunities available to graduates. The Hughes Parry report referred to the deplorably low number of graduates being produced in agricultural science—five or six masterates annually (1955-8) in relation to the estimate that up to 100 could be absorbed.

In this period when funds for research were sparse, the college was fortunate in enjoying the tolerance and consideration of D.S.I.R. leaders like F. R. Callaghan and W. M. Hamilton, for in some instances the expenditure produced few scientific dividends.
Burns in 1953 was the front man in a submission to a Parliamentary committee on agricultural research which said *inter alia*: “Research and extension must be closely linked for the dissemination of knowledge . . . the existing dispersal and lack of co-ordination of agricultural research has made the training of workers more difficult than it need be . . . in our view there should be a concentration of projects in centres, the history and record of which have shown them to be effective in the three spheres of research, teaching, extension. C.A.C. is one such centre. An example of the advantages which would accrue from such an arrangement is seen in the case of research on agricultural economics (at present carried out in six independent institutions) . . . we do not deny that in agricultural research, the Department of Agriculture and D.S.I.R. have the prime responsibility at present but we urge that full consideration be given to the place that the college has taken in the past and the more important part it could play in the future.” Burns, whose personal research had not been fruitful in published results, was to work towards this objective and to become a highly regarded administrator of the scientific work of others. His advocacy of vigour in research programmes, re-organisation towards better co-ordination and the development of Lincoln as a national research centre were all to be accomplished through his influence.

Partly through contacts made by senior staff increasingly using overseas refresher leave and also because of the merit of so much scientific work emanating from the college, in the decade from 1950 eminent scientists and scholars began to visit the college. Later this became common-place. Increasing numbers of American scholars were also being drawn to the departments. This interaction of staff research and contact with professional visitors from overseas had by 1960 clearly established the international standing of Lincoln in several connections, a state that has now been further extended.
CHAPTER 11

The Maturity of Canterbury Agricultural College

Before World War II, Canterbury Agricultural College was comparable with a large feudal demesne ruled by a benevolent lord of the manor. Under one roof the Alexanders, attended by their servants, lived near to 60 young men. The periphery of the manor featured the housing and work centres of the employees. It was a community in which each knew something of what was going on. This state continued between 1940 and 1960 notwithstanding the great expansion of resources, and we aim now to examine this vibrant community of scholars, workers and teachers, pointing to some evidences of the maturity that had developed.

The Students’ Association became strong in its own right; no longer did the director expect to be invited to attend the annual meeting, sitting alongside the president as adviser, mediator or censor. Credit for bringing Lincoln into the N.Z. University Students’ Association goes to J. H. Reeves, president 1940-1, together with a former president of the C.U.C. Students’ Association, J. M. Steeds, College accountant 1938-40. They formulated an adequate constitution, appointed legal advisers and ensured that the clubs were run as part of a body corporate. There were outstandingly fine young men in the office of student president in the ensuing years, but none would stand in higher esteem than John Reeves. Both Steeds and Reeves as pilot officers in the R.A.F. were killed in combat over Europe. From his limited assets, John Reeves who like many others about 1940-41 was convinced that there was little chance of surviving the war, left a bequest to the Students’ Association—a unique occurrence in the history of that organisation.

After the low point of 1942 had passed returned men began to join the students’ organisation.

The concert party of the 1920’s was revived in another generation (1940) when two students, R. P. Anderson and J. W. Henderson,
both later killed in action, inspired a small group to produce a revue that played before enthusiastic audiences at five country centres. The substantial profits were given to war charities. In 1944 J. C. Taylor, a returned soldier, and B. F. Short (later F. A. O. and World Bank adviser, South America and Spain) won for Lincoln the N.Z. University Joynt Scroll debating contest. Taylor (later N.Z. B. C. rural broadcasts officer) was judged the best speaker. In the succeeding three years the Lincoln debaters led by R. H. Thornton (later director of the Cawthron Institute) continued to be highly rated in this inter-university contest.

A choir of 24 good singers flourished for 5 years (1947-52). It was able to support a professional conductor (Chas. Martin and D. Sell), and the Woolston Brass Band, then the Dominion's best, co-operated with this choir in one of its programmes. The organiser was M. D. Dawson, supported by W. O. McCarthy, later professor of Agricultural Economics at Lincoln, and R. S. Newton, later a Christchurch company director. Dawson was not highly regarded by a certain senior staff member, who advised him to seek a career in school-teaching linked with music. Dawson, however, went to Canada to work in prairie farm rehabilitation, from which he obtained graduate entry to Cornell, thence to a professorship in soils at Oregon State University. This and other examples demonstrated that the capacity of Lincoln men to succeed had no limits, so long as the elements of the basic general course had been assimilated and an opportunity was thereafter available. The employment of men from this period ranged from clerics in holy orders, Revs. L. A. Hayman (1929-31), J. S. Vincent (1944-5) to captains of the nation's industry and commerce. Conventional careers in agriculture, science and extension were between these extremes.

There was high quality in student residential life among 200 occupants of the halls in 1955. They had retained some traditions, improved on them, and discarded a few (such as ducking in ponds and horse troughs). Rugby was no longer played by up to three-quarters of the students. Soccer was reinstated in 1943. A. W. Riddolls, a member of staff and former representative player, was the organiser. Hockey was also played and revealed quality players like B. F. Short and R. H. Thornton, who achieved N.Z. University Blues rating (1944-5). The athletic sports were transferred to the autumn, so the accomplished could qualify for the C. U. C. teams for the Easter tournament. There was more of a professional air about the sports compared with the "family" entertainment of earlier years. V. P. Boot had been the only national class athlete to date, but from 1953, J. B. Parcell won the New Zealand and
Canterbury mile championship, in the same year B. K. Cameron won the Canterbury sprint hurdles, and in 1960 the N.Z. javelin championship was won by R. G. Ball, who also became the national decathlon champion. A succession of athletes attained N.Z.U. and/or provincial ranking in various events, P. Fleming, T. Crossen, J. Herrick, R. P. Pottinger, B. J. P. Ryde. In 1954 there were only 24 entrants for the cross-country race among 144 available students. Twenty years previously, 45 out of a total 56, full of noise and banter set out on the round-the-farm five mile circuit; some junior staff members had also run. The blazer, with college crest and inscribed sports honours was still being worn as a garment of distinction. It was as typical of the era, now gone, as the “short back and sides” hair cut. Within a few years, the sports blazer was anachronistic and barbers were not often required by many male students.

Rugby continued to attract many players but the first team had become a fifteen of consistently high quality, largely through one of the criteria used in selecting R.F.C. applicants for entry to the Intensive and V.F.M. courses. The teams continued to play in the Ellesmere Sub-Union. That Sub-Union team of 1956 had eight college players in it, while half of the Canterbury Country team of 1954 had been college students. This was the period of expert coaching by J. D. Mackay and H. E. Garrett. A time was approaching when the strength of college rugby was to outgrow the country sub-union, although the better players did not lose their chances because of this. There had been college players in the Canterbury team in most years. Five students became All Blacks while still at the college. They were J. Hotop (1952), J. B. Buxton (1956)*, W. J. Whineray (1957), K. R. Tremain (1959) and D. Cameron (1960). Buxton had also captained the N.Z. University team. Tremain and Whineray after leaving the college, both captained All Black sides. There was also another player to achieve distinction outside rugby football, J. D. Stewart who played for the college (1947-9) but later for the University Club.

There was support also for the smaller units of the Students’ Association. These included alpine sports, billiards, chess, camera and film society, debating, golf, rifle shooting, social, swimming, table tennis. The students’ newspaper, “Caclin” varied with the calibre of the editorial team. The students still deemed the annual magazine, in co-operation with the Old Students’ Association worthy of support.

Interest in individual or collective debate diminished and the

* Later Executive Director, Towers Co. London (Meat distributors).
earlier forums for practice in public address—the clinic and colloquium—gradually disappeared. There was no lack, however, of opportunity for the brash or vociferous to expound their views at the regular general meetings of the Students’ Association. Business was well conducted but the opportunity was ever being sought to create diversions. Secretaries sometimes recorded the full details, thus . . . “To the accompaniment of a loud shotgun report, the president (Max Wilson V.F.M.) Tasmania, mentioned that thefts had occurred in Hudson Hall and he urged members to take care of valuables. At this stage a lamb with two tins tied to its tail trotted up the aisle”. Later, “a paper being read by R. V. Kinnaird (Dip.Hort. 1954) dissolved in flames and was extinguished by use of the foam unit”. Members had to strive manfully to pursue their democratic intentions and the extent of support was unpredictable. Humour was still part of the daily fare. In an engineering project one had failed to make the requisite article so he borrowed that of one of his fellows, whose work had been graded A. Having filed off the identification number, he submitted it but was chagrined to find that this time the examiner (W. C. Baird) (who wasn’t blind) had graded the article E—fail. W. R. Webb (Dip.Agr. 1954) later company manager, Hawke’s Bay, had a series of dental appointments, coinciding with the time of a certain lecture series. The lecturer (Lewis Morrison) became sceptical: “I suppose Webb is at the dentist again”, and when the student eventually reappeared at the class he was stung by the “and why are you not at the dentist today?” The student then having received his account, a very large one, and resenting the lecturer’s interpretation of his absenteeism went to the lecturer’s room and pasted his dentist’s receipt in the class register under his name. Next time Lewis Morrison smiled and said, “Explanation accepted, Webb”. Another member of staff had enraged the students by requisitioning their study in Ivey Hall. The ejected ones shot an opossum and put it on a chimney ledge just within the (unused) fireplace. At regular intervals they found an excuse for calling on the staff member when they sniffed and asked about the extraordinary odour. “. . . I wonder what the cause of that can be Mr . . . ?”

Students had not become softer in physique, compared with the days of regular manual work. In 1954, a degree student, D. C. M. Manson later entomologist, Department of Agriculture, while undergoing his examination in practical farm knowledge was required to hitch a Cambridge roller to a tractor. Instead of approaching the implement with the tractor, he picked up the roller shaft and dragged the heavy roller to the tractor and hooked it on.

A physical handicap was overcome by A. R. Calderwood
THE SEED THEY SOWED (V.F.M. 1957). He had only one arm but was one of the most successful in athletics, rugby, tennis, cricket and swimming. Courage at any time drew admiration. A student who had been crippled by poliomyelitis had to use crutches. He took part in all field trips. If he could not use his crutches he crawled on hands and knees up hill slopes. Another, deaf and dumb, was conceded entry to a course, as a special case. A group of his fellows took care of him during a two-year period, helped him with lecture notes and in several ways did their utmost to help this handicapped member to get the best possible from his college experience.

The benefits of foreign friendships came from 1954 onwards when from four to six students each year from Malaysia, India, Indonesia (and later from Africa) were living alongside the New Zealanders. Britons and Australians have always been among the enrolments and one consequence was that the International Club became one of the most effective. Their main event, "International night" with hospitality, food and entertainment portraying ethnic groups and other cultures, became, and is continuing to be, an outstanding occasion. There was great advantage in the day-to-day mixing of the New Zealanders with their overseas fellows.

The humanity of the place served to unite all in the shock of distressing events. In 1953, a V.F.M. student, B. Grace, was killed in a motor-cycle accident. Martin Walshe (V.F.M. 1957) also lost his life in a motor accident near Ashley Dene. The association commemorated his name on a Memorial Hall plate.

In April 1955, Peter Vowles was killed in a flying accident while serving with the territorial Air Force in which he was a pilot officer. The student president (B. K. Cameron) accompanied the Air Force group to the service funeral at Hamilton.

There was a local identity whom students came to know, mostly only by sight as he appeared at intervals on the campus, the village policeman. Constables Paddy McGuire or Jim Boyd were stern in demeanour when asked: "And who are you looking for today?" But there were no serious incidents. Mostly the encounters were concerned with under-age drinking in hotels. It was not unusual for a party of students to escape while the constable was taking a statement from one of their fellows. They drank their beer before making off.

In 1947, Hudson had obtained approval (School of Agriculture) for a staff member to exercise administrative control of the halls of residence as well as to foster welfare and cultural needs. J. D. Mackay* was appointed to the position as warden. The position

MATURITY OF CANTERBURY AGRICULTURAL COLLEGE was abolished in 1962, a decision by the governors that caused unhappiness among the staff.

As a counsellor and careers advisor, the warden was only one of a dozen other staff members who had become esteemed by students for their competence in this service. The warden’s functions became stabilised within the pattern and charter of a general manager of halls of residence, his “Board” being from 1953, the halls council of elected student and professorial board representatives. This body was paramount over any other in the student body, required to consider problems, solve them, or refer them to the one higher authority. The hall council was required to prepare an annual budget (aided by the registry staff) and to work out the board and residence or fees structure in relation to the budgeted expenditure. From about 1950 the inflationary spiral began and the annual worry of the hall council became that of the limit of increase of boarding charges that could be imposed. Some students elected to find board off campus where over-all costs were thought to be lower. A number of farm cottages in the neighbourhood became identified with a succession of student tenants, but authority had to be granted by the warden for such private arrangements. The warden exerted unobtrusive influence among students, but he was also a head of a department, within which he directed the duties of the chief steward (later refectory manager) and his kitchen staff; the cleaning of the halls; acted as a purchasing officer for the needs of the halls and refectory; and collaborated with the matron’s department as required. He had onerous, frustrating duties and was inevitably engulfed by interacting and counter-acting forces.

For about 70 years the students had been close to maternal surveillance within the halls. Internal domestic arrangements had been supervised by a succession of matrons and female aids and by the wife of the resident director. Mrs Lowrie had reportedly been mediator on occasions when her husband had been inclined to be harsh in dealing with students. Mrs Alexander was interested in all aspects of residential life and during her 26 years, she took upon herself to get to know each student generation and to exert influence to improve their lot. She made it clear that they must keep her standards of behaviour.

Other women were also influential and helpful, both within the college and in district affairs, as for example, Mrs Hilgendorf. She had spent her youth in the district, then 25 years on the campus. She died in 1930 and a tablet in her memory was erected by friends in the Memorial Hall. Her husband provided a commemorative fund from which the library obtained its first private continuing benefaction.
During her first period of residence at the college, Mrs M. M. (later Lady) Burns* had done a great deal for students in an unobtrusive way. Her artistic talents had been used variously, including guidance in student concert productions. She encouraged the Drama Club throughout several years and was largely responsible for its winning in 1961 the award at the national Universities drama festival. For 21 years between 1952 and 1973 she guided the women at the college in running a group for social exchange and cultural stimulus. This group has continued as a beneficial feature in the residential community. Lady Burns' original art work is represented in the mural she gave to the college in 1969, erected in the foyer of the academic centre and which portrays 90 years of college history. For the halls of residence appeal she gave 100 presentation pictures printed from one of her line and wash drawings of the original college building, Ivey Hall. In addition and for many years, greetings cards also over-printed with her art work on college scenes were sold annually in support of the buildings appeal. In 1973 the college council agreed to a proposal from Lady Burns to establish a specific Ivey Hall fund, to be the nucleus of money from college and outside sources to ensure preservation of the best features of the original building. The first contributions to this fund were derived from the sale of more of Lady Burns' art work.

Some matrons served briefly, others were like Miss Scott, whose 16 years from 1903 included a very severe test caring for the college community during the 1918 influenza epidemic. Although no deaths occurred, practically everyone in the college had been a sufferer.

Miss E. Lilburne was appointed matron in 1935 and retired 25 years later; she was the last, and the greatest, of the matrons of the earlier tradition. When Miss Lilburne began, she found herself with a sitting-room containing two odd, decrepit chairs and an ink-stained table. During the first 14 years she was required to supervise all cooking, catering and stores purchase, laundry, halls cleaning, and to care for students reporting sick. In 1935 this work was rewarded at £180 per annum, plus free board. The care of the sick, never easy, had however been greatly aided by three general medical practitioners who collectively practised at the Lincoln village for nearly 80 years—the Cookes, father and son, and then W. A.

MATURITY OF CANTERBURY AGRICULTURAL COLLEGE

Arch. Johnston. Country doctors, in the greatest tradition, hurrying from farm to farm, to the college, or conducting evening surgery, they were indelibly imprinted on the college story. They also enjoyed the college social occasions and a son of Dr. E. J. Cooke, and of Dr. Johnston, each completed the diploma course and became Canterbury farmers.

In 1935 Miss Lilburne had a staff of 10 women, who began work at 6 a.m. and stopped no earlier than 12 hours later and were paid up to 27/6 a week. Long term service was given by some of the domestic aids. "Mrs Jimmy" would be an example, wife of Jimmy Fraser who had been a college farm hand for 18 years. Mrs Fraser worked for college matrons for 32 years and Miss Ida Thomas for 37 years. Miss Lilburne and her staff also had to provide for short courses and visiting groups. There were times of crisis and the matron recalled an occasion when 20 "of the boys" volunteered to help and four of them worked in the kitchen all night and were there at 5 a.m. when she came to prepare a cup of tea for them. Nearly all the old students of the college who served overseas during World War II who could be found, received a 3 lb. gift cake. Over 400 of these were baked, most of them by Miss Lilburne, who used to include cheerful notes of greeting in these parcels which were provided under the auspices of the Old Students' Association.

There was no end to the range of calls on her time or talent—making stage curtains for a students' concert in the hall, or sorting out unmarked clothing, to be disposed of at the Students' Association annual auction of left-overs, left-behinds, casts-off. Never to be trifled with, she was able to handle difficult students or staff and was discerning in her judgment of these.

Students used various stratagems in their raids on matron's biscuit tins in the kitchen, but she usually caught them in the act. The confrontation would end in laughter, as was her way. Someone once said colloquially: "She deserves a medal". Indeed she was thus honoured, as one of the two college recipients of a Queen Elizabeth Coronation Medal (1953). J. W. Calder was the other.

With the development of the warden's organisation and the assumption of responsibilities by the hall council, the matron's duties became student health and some aspects of cleaning. It was fitting that before Miss Lilburne retired in 1960 she was able to occupy in 1955 the comfort of a newly-constructed matron's wing, with a large sick-bay, surgery and dispensary and 10 other rooms and lounge for women students then in residence. This unit retained that identity until 1972 when the matron and women students were moved to Hudson Hall, to enable the former building to become the headquarters of the union and halls management.
In 1956, two-thirds of the senior academic staff and all the farm and maintenance staff lived in college houses or close at hand. The staff community were close to the students, participated in their extra-mural activities, and brought students into their homes. But there were other specific staff attributes of this college community. In 1951, J. Glazebrook (horticulture) formed a staff committee to organise a show of work, with entries in numerous classes from resident staff and their children. More than 800 individual entries were exhibited and the display amazed participants and visitors, especially Hudson’s entry of hand-wrought and upholstered period chairs. Others then became aware that the director was a craftsman. He had earlier built his own caravan, his home was graced with water colours of his own painting and other quality pieces of furniture which he had made. In succeeding years there were other keen contests, and the professor of animal husbandry was revealed as a maker of prize-winning raspberry jam; the visual aids officer and the head of the wool department each displayed boats they had constructed—one for engine power, the other a yacht; the microbiologist’s flower garden was evidently the best, on the evidence of entries in that class, while the onions from the professor of soil science confirmed that he knew how to use fertilizers. The women also surprised in what they produced for the occasion, and the “College children” made as many entries as possible, in search of the “cup for family with most points”. This event, evidence of the friendliness and unity of the staff community, continued for about a decade, then died as suddenly as it had started.

Many children enjoyed formative years among the houses on the periphery of the campus. There were 50 of them in 1950 attending the local school, the committee of which had been led by a succession of staff members (Alexander and Hilgendorf included) through a great part of more than 100 years. Two of the parents, A. E. Henderson and I. D. Blair, guided the planning that culminated in the establishment of the Lincoln High School. These children, who had played together on the sports field, who were cared for by student ‘baby-sitters’ while the parents were socialising, eventually attended each other’s weddings. As they now begin to age, they will probably agree with the comment of one of the parents of the time: “Those 12 years my family lived at the college were the happiest in our experience . . . “.

Local community identity had been encouraged by the erection of more than two dozen new houses between 1948 and 1950, and though they had been grouped with a measure of class distinction, academics in one part, maintenance and farm in another, the families were friendly and co-operative neighbours. There was
common ground for conversation on the day’s work as academics
and artisans mingled in the dairy to collect their milk supply, or at
Hampton Bennett’s butcher shop for the twice-weekly ration of
rough-hewn, cheap meat. These bounties had been made available
to resident staff for about 80 years; also, at intervals, vegetables,
fruit, coal and wood. By the mid-1960’s the college ceased to
provide such concessions, though vegetables continued to be
available—at prevailing retail rates.

Another notable involvement in local district affairs was the
effort to provide and erect the Lincoln Community Centre in the
village. J. H. Glazebrook, who designed the building, and V. R.
Clark teamed with Arthur Baylis (who has serviced college motor
vehicles for many years) in organising the community effort. Every
man in a three-mile radius of Lincoln township was rostered to help
in building or fund-raising. There were sufficient trade skills to
enable the work on a very large building to be completed locally
and the college staff were foremost in contribution. The students
also played a substantial part.

Four college people, Mrs P. G. Stevens, Drs. Burns and Weston,
and V. R. Clark were involved in the foundation of the Lincoln
Golf Club just after World War II. A few were pillars of the church
or lodge, or members of the weekly manual training (woodwork)
class at the school. The only excursion into local body affairs was
made by Hudson, though against his own inclination. He was
induced to stand for the local (Springs) County Council but he was
not returned. This was not surprising. The college, the largest
property owner, paid no county rates, and despite the regard for the
institution further afield, near the centre there was indifference. Of
some 1500 students who had been received up to 1955, no more
than six had come from the local community, within a 10 mile
radius.

A group of the staff regularly played in an annual cricket match
against colleagues of C.U.C., for the urn containing the Parton
Ashes, not derived from the person of Professor H. N. Parton, but
a synthetic ashlike mixture he had produced in his laboratory. For
three seasons (1951-3) a staff team entered as College B, played
weekly in the Ellesmere Sub-Association’s cricket competition. It
was enjoyable for all, afternoon tea with farmer opponents in-
cluded, but entailed herculean effort by A. W. Riddolls, J. D.
Mackay and I. E. Coop. This trio, in face of the cricket ineptitude of
the remaining eight members, were required to make all the runs
and then bowl the other side out. In the 1953 season, J. D. Stewart
was a welcome reinforcement. On one rural pitch, he made 92 runs
in less than an hour.
Hudson was an angler, one of the best. He could make cane rods and also tie dry or wet flies of a quality unequalled by commercial products. He did not join the half-dozen other staff for evening fishing in the L.2 stream. When salmon were reported running in the Rakaia, he sometimes asked Calder to join him in the caravan set up on a secluded part of the river bank. During the early war period when there was no petrol for non-essential pursuits, E.R.H. and two others went to the trout stream by horse and cart. In the small hours of the morning the horse arrived at the college alone and free of harness. The anglers arrived back at first light, morose and tight-lipped after a six-mile hike in heavy waders. It was later established that it had not been the director who had failed to tether the horse securely.

Hudson was able to unwind with his farm staff, men he greatly admired and with whom he found mental relaxation, especially after a meeting of the governors, professorial board or School of Agriculture. When rabbits had multiplied at Ashley Dene during the war period, E.R.H. invited Charlie Brown to join him in shooting them. Standing as they did on the platform of the truck driven by Ben Brandford, armed with double-barrel shotguns, they made to the observer as incongruous a pair of exterminators as ever stood to arms. Both were expert shots but whereas the director's comments were, in his nature, laconic, Charlie's uninhibited commentary had the truck driver in fits. Later the over-worked boss admitted that the encounter had been a helpfully relaxing experience.

A form of corporate worship existed between 1948 and 1962, in the form of chapel. Though not regarding himself as religious, Mackay, in his plan to develop a better balance pattern of community life succeeded in organising a students' committee to arrange for bi-monthly religious services, held in the Memorial Hall. In an appeal for support, it was contended that it was natural for members of a residential college who worked and played together, to have opportunity to worship together and that the non-denominational character of the services was a step towards unity, in a segment of the community which despite some evidences to the contrary, was ostensibly Christian. Staff attendance was poor and student participation irregular, dependent on the vigour of football matches on the previous day, or whether an ice-skating trip had been arranged. It was noteworthy that without particular urging or publicity, the hall was filled for the Anzac Day service, when attention was drawn to the names of old students on the War Memorial plates. The chapel exercises continued for 12 years. There has been a continuing survival of prayer or religious study.
groups, variously designated Evangelical Union, S.C.M., Christian Men's Fellowship and in some years, depending on leadership, very strongly supported. In the scriptural sense Lincoln was stony ground for this seed, but admirable was the courage of those who upheld their beliefs and expressed them in their pattern of living. They received neither encouragement nor discouragement, only apathy in an environment where materialistic philosophy underlay the college work or study programmes.

Soon after his arrival in 1937, Hudson had presented the students with a schedule of rules and regulations designed to ensure a disciplinary code, basic to ordered living in a residential college. He met the students, indicated what he required and allowed opportunity for comment, but ignored a plea that the schedule was dictatorial. There was to be a rigid enforcement of the prohibition of alcohol within the precincts, welcomed by some, for by the end of 1936 drinking had become a serious evil. Because of the rough experiences of his early life, there was no prudery in Hudson. He had just become convinced that liquor and young men were incompatible.

He had a keen mind and awareness of trends in society and it would seem that he was determined to give no possible aid to an advancing permissiveness. He had become restive in 1945 that there was a tendency for a resumption of discreditable alcoholic revels at the college dances. One unfortunate effect of his rigid outlook was to provoke students to conduct most of their dances in Christchurch, a regretted detachment from the college as a gracious venue for functions. There was also a confrontation over a requirement of students to produce a list for his perusal of people who were to be invited to attend a sports day dance. Though he had information given to him by the Police, relating to undesirable characters, he did not feel at liberty to disclose details to the student president, but held firm: "No list. No dance" The rejoinder was: "No dance. No sports". This resulted in 1945 in the first break in the 65 years' continuity of what used to be a great social and athletic occasion. During the crisis he called the whole college, staff and students together in assembly and delivered an address which provoked no diminution of respect for his integrity but only regret that such a confrontation had occurred. He was a man who planned and acted according to principle, without deviation or equivocation, and it was felt by some that sooner or later the liquor issue would again lead to trouble, for some students regularly defied the regulation and brought very modest supplies into the residence. Hence in 1951, the rugby team having defeated their traditional rivals, Southbridge, and celebrated the victory in a happy gathering of both teams at the Southbridge Hotel (not one of those prescribed
“out of bounds”) came back to the college with a small supplementary supply. It was unfortunate that a staff member decided that evening to visit one of the student residences, but having become aware of liquor “in the college precincts” he deemed it his duty to report 11 students. By Monday morning, when the director called for the 11, he was shocked to find that 17 presented themselves. He asked them if they were aware of the regulations and the specific wording of regulation 6: “Alcoholic beverages may not be brought into any part of the college . . . offenders will automatically be required to leave the college”. The offenders, including a high proportion of the rather favoured R.F.C./V.F.M. component, agreed that they were fully aware of the regulation, whereupon they were deprived of residence at the college. The 17 hired a public bus, went into camp at the Christchurch Show Grounds—with bunks and mattresses provided, but arranging their own food. For three weeks they worked as casual labourers and were accorded preferential treatment by numerous waitresses and young women in and about the city. They also were provided with evening meals at the homes of some staff, the whole 17 being thus served. There was deep consternation within the college community; the staff tried to intercede, and the Students’ Association asked the director to consider their view, that whereas they did not oppose the dismissals, they contended that the situation did not warrant what was in effect both loss of residence and termination of courses of study. They could not move a man who was unable to temporize in a matter of principle where a regulation had been flagrantly broken and where he had done his duty. He had no cause to accede to a request for a special meeting of the board; probably he was aware that some staff, whom in any event he did not hold in esteem, were already at work. A special board meeting was convened at which it resolved that whereas the director had carried out the terms of the regulations, it was considered that the situation did not merit final dismissal of the students and that in these circumstances the 17 students were to be stood down for one month from the date of their expulsion.

A week later (October 9, 1951) Hudson tendered his resignation, *“On account of ill-health”, and he left the college ten months later in August, 1952, eight years before mandatory retirement age. What has been related, at some length, was more than an episode. Because of the tone of happy accord and unity in the college student-staff community, the sequence of events was traumatic. Everyone knew that a great man had retired prematurely.

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* E. R. Hudson (Biog.) N.Z. Agr. Sci. 8, 4, 176
issue of principle, and at a stage when with the aid of the staff he had brought C.A.C. to a level of public esteem that it did not previously have. The development and growth during his 16 years of leadership have been commented on already and his work for education and agriculture were publicly acknowledged in the conferment on him in 1952 of the C.B.E. He was invested by Her Majesty the Queen in person, during the Royal visit to New Zealand in 1954. There was also a large and representative gathering in Christchurch of city and country interests with a sincerity in speeches of tribute that served to illustrate the terms of an illuminated address presented to him. A prize was established, endowed by an anonymous old student in appreciation of Hudson’s service “to be awarded to the student who, irrespective of his scholastic ability or academic attainment, through qualities of zeal, diligence, tenacity of purpose and keenness for rural life, gives evidence of being best qualified to become a successful farmer”. At the outset it was relatively easy to select worthy recipients, but as course numbers began to proliferate it became difficult to do justice to the award which, like several others listed in the calendar, served to provide for an era now past. He retired to a property of 11 acres at Harewood, where his extraordinary manual skill was used to assist construction of a handsome residence and outbuildings. He developed the land as an intensive horticultural enterprise which exhibited original concepts, profitable utilisation and exemplary management. It was regrettable that he retired completely from participation in public life. His integrity and wisdom were not again available in local or national affairs. Though he was suspicious of politicians and found it difficult to tolerate debate among protagonists, the quality of his intellect could well have been used to advantage.

In the 22 years of retirement before his death in August, 1974, Hudson returned to the college on only three occasions—the opening of Hudson Hall, 1953, the unveiling of the Alexander Entrance, 1960, and the Old Students’ Dinner, 1970, when his portrait, commissioned by the association, was presented to the college.

Many people over the years had been on the receiving end of his firm directives. A terse note: “Please see me. E.R.H.”, was received with varying degrees of disturbed conscience. But students and colleagues knew that they were to deal with a man of noble character. Beneath a stern demeanour, he was sensitive and he did laugh also, though somewhat apologetically. He had great physical strength, and mention has been made of his deft skill in producing works of art. He was impartial in most judgments, though unfortunately he developed and was unable to expunge some personal antagonisms from his system. There was no superficiality of being
"all things to all men" and he was most reluctant to confer names and compliments in public. His life throughout had been dominated by situations of great personal difficulty but he revealed qualities of character and fortitude that would be always in the mind of those who were fortunate enough to have known him.

For a third period J. W. Calder, loyal lieutenant was called upon to act as principal. He had not intended formally to apply for the principalship, but in response to a deputation from some of his colleagues who remonstrated "that if you do not apply, that is tantamount to a declaration that there is no-one on the staff who is fitted to be the head of C.A.C.", he became an applicant and was one of the three people interviewed. The appointment was offered to Dr. Burns* at the age of 42. He returned to the college he knew intimately on October 1, 1952, from his appointment in the Fertiliser Manufacturers' Research Association. There was delivered into Dr. Burns's custody an organisation with immensely better physical and human resources than had been offered to any of his predecessors, and the college was fortunate in being able to alleviate the effects of the void created by the unexpected departure of Hudson. Though there had been a threefold increase in numbers of degree and doubling of diploma students in Hudson's time, the college in 1952 was still a small place, with a total full-time enrolment of 128 (plus 439 who had been provided with short courses). From 1953 a steady growth rate occurred. All universities experienced this intra-murally. It was to be the experience of Dr. Burns, as the leader at Lincoln, to contend with problems of growth. These were to be of different nature and degree from those of preceding years, for he did not have to contend with economic depression, national emergency and war, threat of disestablishment or debility in an ill-conducted organisation.

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The new principal (he adopted this title, specified in the 1930 Act) encouraged the roles of the professorial board and Students' Association. He revealed, now with unrestricted freedom of initiative, his talent in administration—directives, memoranda, reports. He excelled in perception and expression of these, mostly written in longhand which he favoured rather than dictation. His letter writing was voluminous and he lost no opportunity to make good his and the college image amongst people of influence or standing whose good will was deemed essential towards furtherance of plans, projects and objectives. The principal of C.A.C. for the first time became a national figure, a leader in agricultural, educational and scientific thinking. In this context, Burns within a short space, and in the knowledge that his staff could be relied upon to carry out his guidelines, advanced his interests and those of the college far afield. (See Biographical footnote). Dr. Burns was made a Commander of the British Empire (C.B.E.) in 1959, within seven years of commencing his principalship, and he was knighted (K.B.E.) in 1972, before retirement. In modesty, he said he regarded the honours as tribute to the staff and the work being done at the college in the interest of the nation.

He saw the Hudson building programme through to finality and had the remnants of original farm buildings eliminated and reconstructed in better form by the end of 1954. Another capital grant ($45,000) enabled the complete, much-needed, internal renovation of Ivey Hall.

The last diploma day was held in December, 1955. Degree conferment had previously taken place in conjunction with the C.U.C. graduation in Christchurch, but in May, 1957, the first graduation ceremony was held at the college. Burns always gave close attention thereafter to graduation, and with his sense of public relations he invited prominent figures to speak. At the first graduation, the visitor was an old student, T. P. Shand* (V.F.M. 1945), then a Cabinet Minister in the Holyoake Government. Degrees were conferred until 1961 by a representative of the University of New Zealand Senate, thereafter by the Chancellor, University of Canterbury, and the occasion has continued to be distinguished by the presentation of the annual award of the Bledisloe Medal, the citation being read by the president of the Old Students' Association.

Animation and vigour pervaded life, at least at the staff level. This was exemplified by celebrations in May, 1955, of the 75th anniversary of the opening of the college in 1880. Students enjoyed

* The Hon. T. P. Shand died in 1969 while still in Parliamentary office. He had been Member of the House of Representatives (Marlborough electorate, National Party) for 22 years since 1947, and Cabinet Minister in various portfolios for 15 years.
a ball, without cost to them or their guests; the Old Students had their largest and most representative gathering; the Senate of the University met at the college and a commemorative dinner brought a select company to proclaim the eminence and success of C.A.C. There were 16 speeches at this dinner, all by middle-aged or aged savants or public servants, none by a student. At one stage a wearied, famous dowager, a college benefactress, leaned across one of the tables and with feeling said: “Charles (Upham), if you can stop these dreadful men and their interminable speeches, I shall do what I can to get you a third award of the Victoria Cross”.

The students, however, were not quite so enamoured of their state. The 1958 magazine editors (J. Butel and G. B. Davis) said: “Over the past few years, students as a whole have exhibited lack of communal spirit and lack of respect for the College as an academic institution. There has been evident this year a gradual worsening of the whole academic and residential attitude. The causes are complex, including lack of incentive to find recreation and interests at the college due to nearness to Christchurch and increase in staff separation from student interests.” A year later the 1959 magazine editor (A. T. I. Lascelles) asked: “What is this College . . .? It is quietly, successfully and without obvious objection, being converted into an institution offering facilities only to those interested in sciences . . .” The demise of farm trainees and of the intensive course was deplored and the editor continued “. . . we can hardly be called an agricultural college . . . could all this restyling of C.A.C. have its ultimate, in a large sign at the main gate, advertising Canterbury Agricultural University?” The student editors of that time did not realise how closely they had come to detecting the long-term objective in the administration.

The retirement in 1958 of Calder,* described as probably the most comprehensively useful staff member the college ever had was like the drawing of a curtain. A host of people, students, colleagues, farmers, business men will meditate on how that unique man—great athlete, scientist, agriculturist, teacher, counsellor—who never criticised harshly nor showed rancour nor ill-humour, impinged on their lives. Many people when recollection of experiences at C.A.C. have dimmed will likely relate that the benefit of their sojourn there was derived much less from formal instruction than from what they observed in human values and virtues, from Calder and his kind.

PART 3

University College of Agriculture
CHAPTER 12

Physical Campus Growth

In 1954 Burns told the Lincoln board that a probable development from the establishment of a teachers' college at Palmerston North would be arts and science faculties at Massey College, and its translation to the fifth constituent college of the university. He said that Lincoln would be adversely affected by competition for funds through this expansion at Massey, and that the degree course at Lincoln, within a single faculty, would be handicapped compared with a future Massey agricultural degree taken within a multi-faculty institution. Burns contended that projected developments at Palmerston North presented Lincoln with the most serious situation since the attempt was made in 1926 to take away its university status: In his view the alternatives were to retain full independent status and "go it alone", or to seek strength through closer association with Canterbury University College. The board adopted the second as policy, and a committee of governors and Professorial Board was directed to plan accordingly.

The process of devolution of the University of New Zealand towards the establishment of separate universities with power to grant their own degrees was accelerating and it was clearly necessary for Lincoln to consider its future role and connections.

The college had adopted the following broad recommendation on its future relationship with the proposed University of Canterbury: that as soon as the University of Canterbury became a degree-granting institution, C.A.C. should take action to have its degrees conferred as degrees of the University of Canterbury; that the relationship between University of Canterbury and C.A.C. should be analogous to the former relationship between University of New Zealand and C.A.C., subject to the latter, with its own board of governors, being a constituent college of the University of Canterbury; that appointments to chairs for C.A.C. be made by the board of governors in consultation with the Vice-Chancellor of the University of Canterbury (sub-professorial appointments would
not require this consultation); that the principal and professors of C.A.C. should be members of the professorial board of the University of Canterbury and that the professorial board of C.A.C. should continue as previously, with representatives in attendance from the university.

The objective was to bring to C.A.C. and the University of Canterbury the advantages of close collaboration in teaching, course development and post-graduate research, while retaining for the college the rights and privileges of a constituent college with its own governors, professorial board, right of direct approach to the U.G.C. and of representation on any central committees set up in connection with university matters. It was contended that any other status, as for example that of a faculty of agriculture in the University of Canterbury, would not fairly represent the standing and service of the college at Lincoln and would lead to reduced public interest and support.

This advocacy prevailed and was expressed in the terms of the Lincoln College Act, 1961. "Lincoln College" had been the popularly adopted title for many years. The 1961 enactment disposed of the anachronism of Canterbury Agricultural College, and a university college of agriculture to be called Lincoln College, governed by a council, emerged as from January 1, 1962. A contention that a similar arrangement should be permanently adopted in the North Island was not advanced, however, by Massey College leaders. The Massey College Act, 1961, and the Massey University College of Manawatu Act, 1962, were holding enactments pending assumption by Massey of full university autonomy in 1964. The country's two agriculture faculties, close in their 36 years association only in a competitive sense, were now further apart except that the principal of Lincoln College and the vice-chancellor of Massey University were colleagues and co-equals on the University Vice-Chancellors' Committee.

The new (1962) Lincoln College was richly endowed with staff and students, happily at work on farm and experimental properties or in classrooms and laboratories of limited suitability. Residential life had been improved through the provision of Hudson Hall and the refectory, but in his submission to the Hughes-Parry committee Burns had said that Lincoln was only partly equipped to fulfil its new role. Of approximately 40,000 sq ft of accommodation for staff and for class instruction, half only was in permanent buildings, a quarter in good temporary buildings, and the rest in poor temporary structures. The college had urgent need of a worthy comprehensive academic centre. Extramural activities could be conducted only in the small Y.F.C. Hall or by converting the Refectory
Hall for conference or assembly. There was need for a conference-assembled hall. Although 77 per cent of the students in 1959 lived on campus temporary buildings were still in use and the projected growth figure justified the plea for the third priority—more halls accommodation for men and women.

The fulfilment of these and other needs came about in the first decade of the new Lincoln College, largely through the energy, perseverance and negotiating skill of the Principal exemplified in his ability to prepare and present working briefs and schedules of detail. The form and face of Lincoln College as it stands impressively and adequately today has been substantially derived from the sustained mental and physical exertion of this leader, who had responsibility during the most dynamic period of development.

The physical developments of the modern era are related in restricted detail, as follows.

**The Library**

From early years small sums were allocated from slender balances for book purchases, these being retained in a small room of Ivey Hall. One can only guess how students would have obtained information outside the lecture-room if a teacher like Hilgendorf had not had his own instructional texts published, for until about 1920 there were really few books readily available. McCaskill, as a student recalled that the "Library" books were as ancient as Moses, remained untouched on the shelves and though without controls, were so mediocre as to evade theft. Books of any quality were held by staff in their rooms. The Students' Association from about 1925 budgeted annually for a purchase of recreational books and the first librarians were volunteer students who did what they could to keep track of up to 1000 volumes. The 1929 laboratory building had a small room (430 sq. ft.) designated "library" into which Hilgendorf succeeded in gathering as much of the book stock as could be extracted from staff rooms, and with the aid of a clerical assistant he established a measure of control. He also provided from his own resources a selection of prestige volumes, but the technical resources hardly exceeded the monthly issues of the New Zealand Journals of Agriculture and Science and Technology.

D. R. Muff on first appointment (1931) a porter, with no qualification in librarianship, was placed in charge of the library in 1936 and grew into the work with dedication throughout the ensuing 30 years. A self-taught intellectual, he was happy to work long hours in the interest of users. Material was becoming more readily available but the stock had to be kept in as many as 15 other storage places. It was a time when the librarian's frustration matched that
experienced by the director. Both were struggling with problems of inadequacy of funds. Thus there was an affinity between Muff and Hudson that brought them together for relaxation on the common-room billiards table, where the game afforded mental relief while groups of students admired the encounters. Dudley Muff communicated with brevity. Of his active war service he recorded: "Entered Burnham Military Camp October 1940: entered Germany (P.O.W. Greek Campaign) April 1941: left Germany after 4 years residence, May 1945".

Library transformation resulted from an interesting political movement. In 1951, W. H. Gillespie M.P. board chairman, reported on progress of his negotiations for a library building at the college. He was member for Hurunui, the electorate of a former Prime Minister, G. W. Forbes. Gillespie made a case to the Holland Government for a new library, to be named after Forbes. The plan succeeded and in December 1955, the Prime Minister announced that the Government would erect a library at Lincoln College with a grant of £50,000 to commemorate the services to New Zealand of Mr Forbes.

The board placed on record "deep appreciation of the actions of the chairman, W. H. Gillespie, in conceiving and pursuing the establishment of the George Forbes Memorial as a library at this College."

Architects were invited to submit designs in a national competition, supervised by the Department of Education. In 1957 the winning design, selected from 39 entrants, was that of the Auckland firm, Jones, Adams, Kingston & Reynolds. A dispute arose within the board whether the central campus site favoured by the assessors should be approved, with consequential impairment of the open vista of Ivey Hall, the alternative being to place the library off centre. The issue led to a rare occurrence within the governing body—a decision made on the casting vote of the chairman. The architects’ brief had required, however, a low-level construction that would not screen the approach view of Ivey Hall, a gesture which lost its effectiveness in 1975 when the high-rise administration building (p. 190) surmounted and engulfed the physical form of the original George Forbes Library.

The Forbes building came into use in March 1960, J. A. Frampton* having been appointed librarian a few months earlier. Dudley Muff, happily free of the worry of his preceding 24 years' efforts, carried on as an assistant until 1966. The opening was

deferred to suit the convenience of the Governor-General Lord Cobham, who completed this engagement with distinction, though his briefing had been inadequate to the extent that he paid tribute to members of the Forbes family, seated among the guests, for the munificence of their gift to the college. They had made a contribution to provide a collection of historical publications but they would have also been among those surprised by the Vice-Regal tribute. The Governor-General could hardly have congratulated the chairman and his associates, however, on their singular success in by-passing the university capital grants system to provide Lincoln with a deserved library more in keeping with the needs of a university college of agriculture.

Students, not generally invited to these occasions as guests, still looked for opportunities to make an impression. The Governor-General was to plant a commemorative tree near the building, but when the official party moved to the site the planting spade had been replaced with a small domestic spoon. His Excellency enjoyed the incident, used the spoon to apply some earth and completed the task with his hands. Burns always reacted quickly to episodes. On being told early on a Saturday morning of a student’s car on the library roof, he instructed the farm staff to bring out mechanical equipment immediately and bring the car down. The students concerned had been late in rising that Saturday morning, and were amazed to find that the vehicle on which they had worked so hard had vanished.

The opening of a recognizable library 80 years after the establishment of the college, with an installed capacity for 25,000 volumes, display facilities for serials and accessions, ancillary services and accommodation for 60 readers set in process a chain reaction of support. Further setting-up grants were made to remedy immediate deficiencies and subsequently there were reasonable appropriations within the annual budget for staffing and materials.

Funds were provided for specific collections by the Old Students’ Association, the Carnegie Corporation of New York, and increasing numbers of individual donors. The Students’ Association books were transferred and the association’s continuing library activity was confined to allocation of funds for special collections, for instance, to recognise the life and work at the college of certain members of staff whose link with them had been appreciated.

The library was designed and built when the college had a roll of 300 students and a collection of 10,000 volumes; by 1966 when the roll reached 634, supplementary shelving, seating and study zones in the foyers had to be installed.
In 1969 Burns asked the architects if the Forbes Library could be extended to provide up to 25,000 sq. ft. additional space, to serve the needs of the projected enrolment. Though Ivey Hall had always housed the administration (Principal, registrar, accounts) a proposal that the original building, no longer primarily used as a hall of residence, should be reconstructed for continuing use by the registry was rejected in favour of providing for the administration services in the library extension. Thus there has come to dominate the campus a building which has induced controversy on several points. Working drawings were approved in 1972 for 28,000 sq. ft., the registry to occupy nearly 10,000 sq. ft., the library the balance of 18,000 sq. ft. Though council members were critical of the external appearance of the design consequent upon the limited use of windows in a library structure, professional advice prevailed in that external light should be limited where books were to be in storage. The library inherited in mid-1975, five of the eight levels of the new building. This was a three-fold enlargement of what had been available in the Forbes building. There was capacity for 69,000 volumes that could be lifted to 76,000 with additional shelving, and desk provision for 295 readers (350 with additional tables). The original form of the Forbes Library disappeared except for a little storage space on the ground floor, but the memorial concept is retained. Approval for the library extension was given by the U.G.C. on the basis of a projected roll of 2500 students by 1980. That level does not appear likely to be attained, but it is pleasing to note that for once a university building was planned and built of a size that was not too small even for initial occupation. The staff-student community in 1977 is a little less than half the 2,500 figure.

Moving a library to new accommodation is always hard work. Frampton and his staff had two shifts within a decade, and in each instance chain lines of student volunteers helped.

The new library building has its critics. The institution of checks and controls and dispersal on five levels, created temporary difficulties for the users, many of whom complain about the increasing difficulty of getting quick access to library resources.

A very senior academic could only concede that “the library (building) is only good for getting a view of the surrounding arable farmland . . .”.

The administration moved to 10,000 sq. ft. of the library extension building after almost a century in modest rooms at ground level. As from 1976 the principal, registrar, chairman of council and their immediate aides were elevated to level 8, referred to as “the green belt” by humorists because of the all-pervading green baize.
The occupant can look down and afar over the fields and enjoy an attractive panorama of rural landscape terminating in the foothills of the Alps.

“The treasury”, the headquarters of the deputy-registrar (finance) remained at ground level as did registry services to the community—bookshop, printery, banking, accounts.

The Academic or Teaching Centre
In the early 1960's there were almost 30 separate, dispersed lecture room/laboratories. This situation ended in 1968 when the Governor-General (Sir Arthur Porritt), officially opened a new teaching building, the first part of a two-phase development designed to provide for the 2500 students expected at the college by 1980. The customary student prank on the occasion of opening the Hilgendorf Wing was spectacular but nearly disastrous. Two of the N.Z.A.E.I. staff had access to a demonstration remote control tractor. Garden and Harwood rehearsed the event the previous evening and when they saw their manless machine hit a tree and the brick entrance they might well have noted that their radio link was temperamental. Undeterred, they set up the act for the timed arrival of the Governor-General next day. As the Vice-Regal limousine approached incredulous spectators watched the unmanned tractor moving sedately, but there was alarm when the machine suddenly began to weave a most eccentric course. A policeman jumped on the tractor but found there was no steering-wheel. At that point, close to the official car, the wayward machine stopped, either through the efforts of Garden and Harwood or of God. There were strong words from the highest officials about that incident, mainly to ensure that in future any such contemplated pranks must be notified to the security police.

This was done, therefore, in 1973 when the Duke of Edinburgh came to the College. His car, by arrangement, was stopped a short distance from the college and he was invited to leave the limousine, sit on a bale of hay in a tractor-drawn trailer in company with students in football jerseys, and thus obtain his first introduction to Lincoln College. In contrast—the official order papers when the Shah of Iran came in 1974, read: “In no circumstances whatsoever must there be any kind of levity. . . .”

In the Hilgendorf wing all departments were housed and provided for, except soil science, which took over the 1929 laboratory building and its extensions; agricultural engineering, which retained use of a miscellany of workshops and offices near the farm centre; and the wool science department. During construction of the Hilgendorf wing, an omission became apparent, but a slight
variation of the contract provided for a 900 sq. ft. wooden room on the roof for meetings of the council and the professorial board.

Immediately after occupancy of the Hilgendorf wing, it became necessary to use what was initially pass-through ground floor space that had been part of the visual harmony of the massive building. This space was soon bricked in to provide accommodation for the Lincoln College post office (first established at the college in 1954), the telephone control centre, the visual-aids unit and further staff offices.

The staff welcomed the opportunity to plan for their equipment needs in the building, though Burns, as was his custom, cut down to size the more unrealistic submissions. A figure of £100,000 was ultimately submitted as a request for fitting out the laboratories. The U.G.C. investigative committee of L. J. Wild, Sir Arthur Nevill and J. H. Hutchinson cut the request in half, but it would appear that most, if not all, the requirements were obtained within a few years by being budgeted for in the annual departmental equipment grants.

At Lincoln the 1958 enrolment of 338 full-time students increased within 10 years to 890 (1968) an increase of 160 per cent. Over the same period the increase in other university centres did not exceed 100 per cent. The largest lecture room in the Hilgendorf wing had a capacity of 180 students but by the time this building became available the first year diploma of agriculture class entry had exceeded 200 and continued of that order until 1972. Burns therefore made a case in 1967 for two large lecture theatres, linked with the Hilgendorf wing to accommodate 300 and 350 respectively. These came into use three years later and were subsequently designated the J. W. Calder and M. J. Scott lecture theatres. With first-rate audio-visual aids, they have been favoured places not only for large internal classes but also for conferences based upon the college.

Because of this population explosion, and even before the Hilgendorf wing was completed, a brief was in hand for the second wing of the teaching centre, parallel and linked with the Hilgendorf. Authority for this project was given in 1972 and the building was completed for use four years later.

Completion of this (the Burns Wing) enabled all departments of the college to be integrated in an academic precinct, except for agricultural engineering which has retained direct identity with the N.Z.A.E.I. (p. 191) elsewhere on the campus. Completion of the buildings plan for this branch of the college unfortunately was deferred in 1976 because of reduced Government spending. The academic centre was revealed in appealing architectural form, in functional comfort and efficiency, and in generous proportions of
space. The space was appreciated but was coincidental with an enrolment lower than projected for reasons beyond the control of the college.

**Halls of Residence**

Until 1963 all students who wished to live at the college could be allocated a place but by 1968 there were beds for only 40 per cent of the student population. Burns had meanwhile prepared a brief to provide for up to about 250 additional beds at an estimated cost of about £25,000. In 1965 the Government subsidy had been increased to 80 per cent of cost, up to a maximum of £1440 a bed. The principal thought that the Government, in recognition of the service Lincoln College had been providing to foreign students coming to New Zealand under the Colombo Plan and Special Commonwealth Aid to Africa Programme might make a special case. Even with substantial Government aid, the college was going to be heavily involved financially and the Principal proposed to his council that a Halls building fund should be established, supported by mortgage finance on one or other of the farm units, together with annual allocations from the farm income fluctuation account. In 1965 authority was given for the college and its architects to build two halls* each to hold 84 students, with the assurance of Government finance, one to be within the provisions for university halls, and the other to be subsidised through a capital grant from the Department (Ministry) of Foreign Affairs. The 1965 estimate was £120,000 for each hall, but a year later this had risen to £140,000 and when the halls were completed four years later the approximate cost of each (excluding furnishings) exceeded £250,000. The balance to be met from college funds was about $45,000. (Metricalation of currency had been adopted in New Zealand in 1967, midway in this building project). To provide the $45,000 to assist future needs of student accommodation, the council instead of mortgaging property or borrowing, launched in 1967 for the first time a nation-wide halls of residence appeal for funds. An Australian based commercial fund-raisng firm, for a fee of about 12 per cent of the target figure, set about the task. This was substantially organising the college community to do the work of obtaining the target sum of $350,000—spread over a five-year period. The three key figures in the appeal were the appeal president, T. D. J. Holderness, chairman of the college council; J. Boyd-Clark, a member of the council and key (business house) gifts chairman; and I. D. Blair, * Later identified, one as Colombo Hall in recognition of the college involvement in Colombo Plan aid and training the other as Lowrie Hall, commemorating the life and work of the third college Principal.
chairman of regional groups and continuation chairman. Relatively few people actually did the work but in the 28 districts or groups into which the country was divided, old students of the college were the work force. At the end of the appeal, after 5 years, a sum in excess of $300,000 was realised. Through Government subsidies this fund led to expenditure of almost $1.5 million in ensuing years.

When instruction in meat inspection was instituted at the college in 1964 (p. 199) the trainees, sponsored by the Ministry of Agriculture slept at Burnham Military camp and were brought daily to the college. The time arrived when the Agriculture Department had to improve buildings allocated to it at Burnham or to find an alternative. If the equivalent departmental expenditure at Lincoln College would enable residential accommodation to be guaranteed for up to 50 trainees for the 12 weeks duration of each course, would the college provide the land? The college was pleased thus to acquire another Hall. It contrasted in design from the others, being the M.O.W. version of halls of residence earlier erected at the University of Waikato, Hamilton. It was opened in 1970 and the Ministry said it should be regarded as one of the college buildings, subject to its being available for departmental course requirements. The college supplied furnishings other than those built in.

As an experiment, student flats were built. Nineteen units were in use by 1975, including Sims House and Garrett House, the former made possible through an Arthur Sims Estate donation and the latter from old students’ support for a memorial to a staff member, H. E. Garrett (p. 117). Over all, the outcome was that in 1975, accommodation for students was available as follows:

<table>
<thead>
<tr>
<th>Accommodation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson Hall</td>
<td>152</td>
</tr>
<tr>
<td>Colombo &amp; Lowrie Halls</td>
<td>168</td>
</tr>
<tr>
<td>Ivey Hall</td>
<td>49</td>
</tr>
<tr>
<td>E. C. J. Stevens Hall</td>
<td>53</td>
</tr>
<tr>
<td>(Meat Inspectors)</td>
<td></td>
</tr>
<tr>
<td>Short Course Building</td>
<td>35</td>
</tr>
<tr>
<td>19 Flats</td>
<td>75</td>
</tr>
<tr>
<td>3 Old Houses</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>544</td>
</tr>
</tbody>
</table>

**Conference Hall–Union Complex**

The second focus in the campus plan was to unify student recreational life and their association with a hall for college functions and large conferences. The refectory was already situated on the designated site. Having noted the provision by the Producer Boards of a conference hall at the Ruakura Agricultural Centre, Hamilton (Ministry of Agriculture), Burns approached J. (later Sir John)
Ormond in 1956 asking if the Meat Board would help to build a hall for the growing Lincoln Farmers' Conference (p. 151). A joint committee of the Meat, Wool and Dairy Boards refused but Charles Hilgendorf, council member and member (later Chairman) of the Meat Board, thought the Meat Board would eventually contribute, as it did in 1957—£3,500. R. H. Bevin assisted in negotiations that brought £2,000 from the Wool Board. The Dairy Board's £500 was in token of Lincoln's appreciation of dairying in a region remote from the main concentration in the North Island. At that stage, the college's own funding stood at £7,000. Meanwhile the Students' Association under the 1965 president (D. B. Lawson) had established a levy on members to be built into the annual fee, the accumulating fund to be devoted to capital developments and improvements of benefit to the students. Pressure of student numbers and the need for day facilities for the increasing proportion of commuting students led to the proposal that the hall should be incorporated within a student union building. This was approved by the U.G.C. in 1963, together with advice that the hall-union complex would have subsidy as earlier advised for the conference hall. The space schedule before the architects was conference hall 7000 sq. ft.; union facilities 1300 sq. ft. Building commenced in 1969 but the approved construction tender exceeded the U.G.C. authorisation and the college was required to confirm that it had available finance for this work over and above the subsidy payable.

Upon completion of the hall after two years in construction, the college community possessed all that had been sought in the planning—a ground floor cafeteria for casual service, a shop replacing the students' canteen (1955), reception and administration office. Most of the second floor was occupied by the hall and large stage, with seating accommodation for 800 to serve conference needs, graduation and other assemblies, and to be used also as an examination hall, or when cleared, for indoor sport. Upper mezzanine level provided offices for the student president and his executive. The cafeteria area has become a centre for students and staff, and the venue for many social functions such as Old Students' Association and visiting groups.

The Conference Hall bears the name of W. H. Gillespie, in recognition of his contributions to the rural community—he was the country's Minister of Agriculture at the time of his death in 1961—and to the college in general throughout his 12 years of board and council membership. The building was formally opened by Sir John Ormond at the Farmers' Conference, 1972, and stage furniture was given by Mr Gillespie's family. About the same time donations by Mr Gillespie's political supporters in North Canter-
bury provided the council room table and chairs.

The nomenclature of buildings had been referred to a naming committee of the council. They were not called upon to deliberate in the case of Forbes or Gillespie but through their recommendation the name Hilgendorf was conferred on the first wing of the teaching centre, and those of A. W. Riddolls, M. J. Scott, J. W. Calder to major lecture or instruction theatres. One name still lacked appropriate recognition. E. C. J. Stevens (p. 5) was not known personally by any in recent times but record had established the merit of his service to the embryo college in the first three decades, so, belatedly, his name was given to the one remaining unnamed building—the meat inspectors hall.

Parallel with these large developments that had ensured the adequacy of facilities for residence and instruction, other essential services were modernised, for example, a huge boiler-house with ancillary equipment and reticulation. The sewage disposal service had also to be improved from an inadequate septic tank system. Negotiations had been going on with the local county council to provide a unit to serve the college and the D.S.I.R. and eventually the Lincoln township. By 1959 it had been agreed that the college would make land available for a modern installation, to be provided by the M.O.W. at the Government's expense. The work was completed in 1961. In 1965 the Ellesmere County took over the installation, then connected to Lincoln township, as earlier agreed.

At the principal's instigation, the Army gave the college a surplus dormitory building, intended for re-erection as a field station for staff/student use. The building on offer was on Godley Head at the entrance of Lyttelton Harbour. Under the direction of George Gibbs, maintenance foreman, and Harold Yeatman, M.O.W. clerk of works at the college, a work force of students and staff, including the Principal, went to the headland on two successive Saturdays and dismantled the building. Meanwhile the Army engineers had been persuaded to use their massive transporters in a military exercise. With the co-operation of civil traffic officers, everything was conveyed over 100 miles to Oaro on the Kaikoura Coast. Here Burns had previously negotiated a long-term lease of land from the Railways Department and on this site, the college work force, again during two weekends in 1962, re-erected the building which was soon after served with power and water by other maintenance staff. The Oaro Field Station with sleeping accommodation and kitchen services for 50 people, was used enthusiastically for several years by the students' Field Club and by increasing numbers of comparable approved groups. Student interest later flagged, with declining support for Field Club pursuits.
As a result of the sequence of planning and construction, Lincoln College, with the money streamed through the Education Department and U.G.C. (approximately $7\frac{1}{2}$ m in capital grants for buildings alone between 1960-75) for the first time in its century could be viewed as excellently fitted out for its work. Burns had been able throughout to encourage his subordinates also to work with enthusiasm and efficiency. In the dynamic phase of development the registry and maintenance staff had additional work above the routine, notably H. N. M. Harvey.* With the increased work in academic administration the need for a building and services section, envisaged in the 1950s by the registrar, H. G. Hunt, was finally recognised. This was accomplished in 1971 with its separation from the academic section that remained under the direction of J. H. Scott.** Harvey’s responsibility for checking details before presentation of a case for approval engendered confidence with the U.G.C. and enhanced the prospect of obtaining approval and funds. In the final stages of the major building programme Hunt had an administration structure that would have considerably benefited earlier negotiations.

The council had defined an area of 130 acres at the heart for the foregoing and future campus development. Little evidence of the past centres of activity remained as the college neared its centennial. There was Ivey Hall, venerable and admired, but since the occupancy of the new buildings, somewhat bereft and apart. The playing fields of generations for the first 70 years had vanished beneath modern halls and work centres. Three trees that Ivey had planted 91 years before had been carefully retained in token of the past but one of these, a botanically perfect Araucaria sp. (Monkey puzzle) was destroyed by a Canterbury gale on August 1, 1975. Because of its thick spines, it had been inviolable throughout the 90 years except when John Clark-Hall and J. P. Malcolm, wearing protective clothing, reached its summit in 1941 and won a bet equivalent to one dollar. Ivey’s first cottage still stood—a student’s flat—but the immediate surrounds which had first known the beat of horse hooves and later the roar of a helicopter coming to land, were now encased in concrete slabs of a concourse attractively prepared by Challenger’s (p. 229) landscape architects. A superb rural landscape had now imposed upon it, in token of progress, six huge steel pylons carrying the hydro-electric grid.


CHAPTER 13

Integration of Allied Interests

An expansion of disciplines, spheres of interest and departments occurred during the Burns era. Distinct success was achieved in broadening the academic and technological base of the Lincoln centre but attempts to secure the forestry and veterinary schools failed.

Veterinary Education

In 1952 a Senate (University of New Zealand) Committee on veterinary education was established and reported in 1954 that the student bursaries to seek veterinary qualifications in Sydney or Brisbane were not yielding enough practitioners. The establishment of a veterinary school was favoured. Alarm bells rang when Charles Hilgendorf at a Lincoln board meeting referred to the possibility of a veterinary school being established, and to the strong claims of Massey College. He proposed that a case should be prepared for the School to be at Lincoln for, “whichever College obtained veterinary science it was obvious that development of that college would be considerably increased at the expense of the other college”. It was increasingly evident that the combined influences of the veterinary profession, the Dairy Board with its predominant North Island interest, and Massey College were leading to acceptance in principle of a veterinary school, but not at Lincoln. The “old Canterbury guard” was called out again and under the chairmanship of John Boyd-Clark, then president of the Associated Chambers of Commerce and later long-serving Lincoln Council member, a widely representative public meeting in Christchurch resolved to approach the Government with a plea that should the veterinary school proceed, an opportunity to present the case for Lincoln should be given. An earnestly conducted, mobile campaign throughout eight years was of no avail for Lincoln: the school was established in 1962 at Massey College, then emerging as a new multi-faculty University.
In the early 1960s, the Government under pressure from purchasing countries, decided to improve the standards of hygiene and meat inspection within the 40 or so meat exporting establishments in New Zealand. This involved a raising of the standard of meat inspection training, which until then had been conducted wholly within the Department of Agriculture. Perhaps it was the preoccupation of the dean of the new Veterinary School at Massey with his own establishment problems that led him to turn down a proposal to provide courses of instruction for lay meat inspectors. When the plan was later put to Lincoln, the task was accepted in the national interest and the first course leading to a certificate in meat inspection was introduced in August, 1964, with an intake of 100 assistant meat inspectors.

The course of instruction designed by J. W. McLean and A. Ginsberg was based substantially on that for the National Diploma of health (meat inspection) in the United Kingdom—some 330 hours of instruction over a period of 12 weeks. In addition, the students were required to undertake not less than two years practical experience and training under the supervision of Meat Division officers in a recognised meat works before qualifying for the final examination, which was conducted jointly by college and Ministry staff. Successful candidates were awarded a certificate in meat inspection by the college, in addition to their certificate of competency (licence to practise) by the ministry. To date some 1400 A.M.I.s have passed through the college, an average of about 120 a year. In 1966, an advanced course of eight weeks leading to an advanced certificate in meat inspection was introduced, and now (1976) about 240 meat inspectors have qualified for this certificate. In addition, a short course for supervising inspectors was conducted in 1966. More recently, consideration has been given to still more advanced courses of a type and duration considered necessary to qualify for a college diploma in meat hygiene.

The college authorities accepted the programme as falling within the traditional role of serving the interests of agriculture in the broadest sense and in teaching at the technical as well as the technological level. It became necessary to establish and maintain the closest communication with the ministry to co-ordinate finance, staffing, course content and examinations and disciplinary responsibility. By and large, these were successfully transacted and the training programme in general has received favourable comment from people in overseas countries who are responsible for setting standards in meat hygiene. Nonetheless, there was a section of the faculty that still harboured a feeling that the conducting of such courses was scarcely a university function.
For the first few A.M.I. courses, the trainees lived at Burnham Military Camp and travelled daily to and from the college by bus. Later a hall of residence was built at the college specially for meat inspectors and other government-sponsored courses.

In 1970 the Meat Division designated a number of meat inspectors as "tutors" who, in addition to their inspection duties, were required to guide the studies and practical work of the trainees while at the works. The idea was first to prepare them a little better for their course at the college, and then to show them the application of their theoretical training to practical situations in the meat industry. With the gradual build-up of the tutorial system at the works level, the Division tended to take over more and more of the programme originally done in the 12-week course at Lincoln. As a consequence, this course was reduced to eight weeks.

The college and the ministry later reviewed the whole meat inspector training programme and devised a system which enabled the college to devote its efforts to annual training courses for tutors, senior courses for the advanced certificate in meat inspection, the diploma in meat hygiene and other specialist courses required by the industry.

In 1965 an animal health laboratory (diagnostic centre) was established by the Ministry of Agriculture on five acres of land purchased from the college. A close personal and professional relationship had developed between the officers of this unit and the college veterinarians.

Although the modern college department was not to be based upon a veterinary school, with veterinary undergraduate involvement, the staff have been able to use their skills in the animal health and physiology component of agriculture degrees, as well as contributing most distinctively to research attainments. From 1959 McLean had worked with Merck Sharp and Dohme Research Laboratories in Rahway, N.J. United States for 21 months as associate editor of the second edition of the Merck Veterinary Manual, an internationally known standard reference book. On launching the new edition in Detroit, the editor said: "The unique qualifications of Dr McLean, enabling him to review the field of animal science in its entirety, have been an invaluable assistance in editing and correlating the writings of our scientific contributors from all over the world".

The conferment by the university of a professorship (personal chair) on J. W. McLean in 1967 gave worthy recognition to the stature that veterinary science had attained in the college history. McLean was also one of the "40-year service men", a noble company of fewer than half a dozen, including Hilgendorf, Calder and
Flay, whose service and influence through times of adversity to those of success, provided the sort of human foundation on which the leadership of Hudson and Burns had relied. A meritorious pattern of research was defined after the appointment of C. H. G. Irvine* in 1966. In his work on horses he was supported by Margaret Evans (B.Agr.Sc. 1972, Ph.D. 1977), a woman graduate who demonstrated potential as a young scientist after a distinguished college course during which she not only attained 100 per cent subject A grades but served on the executive of the Students' Assn. (1970) following the pioneer in this endeavour, Miriam Palmer, in the preceding year. Irvine became only the second member of staff whose work was recognised in the distinction of the highest degree award of a N.Z. university (D.Sc. Otago 1974). Hilgendorf was the first (D.Sc. [N.Z.] 1905). In 1976 Irvine's work was further recognised in his appointment to a personal chair. This fundamental research work also involved R. G. Gabb and a group of graduate students who moved on to research careers of considerable promise. Irvine and Margaret Evans participated in international congresses of endocrinology, by invitation, in 1975 at Cambridge, and 1976, Cracow, Poland. Irvine was also one of a team of 10 endocrinologists who provided courses of instruction in India and S.E. Asia for a short period in 1975.

The School of Forestry

In 1959 the Professorial Board urged the governors to support representation by Canterbury for the re-establishment of a degree of forestry in that university, but to be provided as a collaborative effort between Canterbury and Lincoln. Burns thought there should be a faculty of forestry at Lincoln College and one of wood technology at Canterbury. Further efforts to have the School at Lincoln were of no avail, but it was established at Ilam. Something was retained of the early concept of a combination of Lincoln and Ilam (University of Canterbury) resources and talent, for the soil science department of Lincoln College has from the outset provided the full course of instruction in that subject to forestry students. The Lincoln teachers are T. W. Walker, A. F. R. Adams, E. J. B. Cutler, A. Campbell and A. W. Young. Since 1974 soil science given by the Lincoln lecturers at Ilam has become a full science unit, not confined to forestry.

Wool Research

Though Lincoln had been a front runner in the initiation of wool research with Sidey (p. 65), then McMahon and Henderson (p. 116), their work supported by D.S.I.R., there was growing dissatisfaction in the 1950 period about the country’s organisation of wool research.

Since 1937 the interests of manufacturers had been supported by the Wool Industries Research Institute at Otago University which L. F. Storey has shown to have developed from the Wool Manufacturers’ Research Association. It was announced in 1960 that a Wool Research Organisation was to be established. A year later the body was incorporated, to be directed by an executive representing the Wool Board, D.S.I.R. and Ministry of Agriculture. Again “a battle of sites” was joined. Massey, Lincoln and the Gracefield, Wellington (D.S.I.R.) locations were considered, and Lincoln was chosen. Apart from the readiness of the college to make six acres of land available, advantages also lay in unification of manufacturing interests—studies of wool as a fibre—with the demonstrable acceptance of Lincoln as a leader in research in wool production in A. E. Henderson’s* department and in those of farm management and agricultural economics. The appointed director took up duty in 1962 and for four years he and some of his foundation staff, pending completion of the W.R.O. building complex (30,000 sq. ft.), were accommodated at the college. The W.R.O./W.I.R.I. amalgamation was achieved in 1968 and in 1971 a pilot plant (19,000 sq. ft.) relating to wool manufacturing was provided, by which stage the organisation was employing 80 staff (including 25 professional scientists) and functioning with an annual income budget initially of $200,000 and which exceeded $1 m by 1976.

Henderson’s work in wool research and the national recognition of his acceptability as an authority on wool production, resulted in his appointment to the country’s first professorship in wool science.

The decision to establish the W.R.O.N.Z. at Lincoln has achieved the advantage and mutual benefit originally envisaged. Lincoln College students have access to W.R.O.N.Z. laboratories for demonstration, some W.R.O.N.Z. staff assist in the conduct of college courses. There is full collaboration in the provision and exchange of materials for research or instruction.

The Wool Research Organisation did not emerge altogether as

hoped for by some people and the college wool department continued to evolve separately. The department remained numerically small but the involvement by Henderson and his colleagues in research, extension and teaching made a contribution to the needs of a major industry unquestionably greater than would have been derived from an exclusively research unit. Henderson was among the college scientists who had inclination for extra-mural extension at all levels. The teaching functions of his department were also comprehensive and several masters graduates in wool science found employment in the C.S.I.R.O., Australia, on World Bank assignments and in the industry in Australia, New Zealand, Pakistan and Uruguay.

The certificate course initiated in 1944 was consistently popular, with an annual turnover in recent years of about 30, although more than 50 were provided for in some years. This vocational course of 12 weeks for skilled workmen was aimed at technical training in wool handling and classification and on the basis of numbers who have qualified it was the country's main source of trained men of the kind. For two years after he commenced at Lincoln Henderson conducted the course alone but thereafter was helped first by J. H. Drake (1946-51), then J. C. Simpson (1951– ). These were practical men, excellent instructors, well-known throughout the industry and highly regarded as personalities by students and other woolmen.

Over the period 1944 to 1976, 925 students attended the courses (817 qualified) and have served the wool industry in many ways. During the period 1959 to 1976, when records of employment were kept for the 644 students attending the courses during that time, the following summary shows the sections of the industry in which students were employed:

<table>
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<th>Section</th>
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<tr>
<td>Wool Brokers</td>
<td>43.5</td>
<td>12.1</td>
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<tr>
<td>Wool Buyers</td>
<td>5.1</td>
<td>19.5</td>
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<tr>
<td>Wool Merchants</td>
<td>2.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Wool Scourers</td>
<td>3.6</td>
<td>0.5</td>
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<tr>
<td>Mills</td>
<td>2.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Freezing Industry</td>
<td>4.1</td>
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<tr>
<td>Shed Classing</td>
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<td>Farming</td>
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<td>Research &amp; Advisory</td>
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<td>Not known</td>
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<td>Out of Industry</td>
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<td>Not known</td>
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<td>Out of Industry</td>
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Most of the enrolment came from the South Island, but 15 per cent from the North Island and 3 per cent from overseas (Australia, U.K., South Africa, India, Chile, Argentina, Japan, U.S.A., Kenya).

In 1975 Henderson introduced a diploma of wool technology, designed for those who were to hold positions of responsibility or management in various facets of the wool industry.
There had been continuing interest by college staff in the ecology and economy of mountain lands and plains tussock grassland since Hilgendorf and Calder made ecological studies 40 years ago. Control of grassland research, however, was entrenched in the Department of Agriculture until the late 1920s and there were no moves in that quarter to investigate the declining vigour in the 12 million acres of South Island tussock. After the establishment of the Botany Division D.S.I.R. (1935), H. H. Allan encouraged some of his staff including V. Zotov and later H. E. Connor to report on indigenous grasses. "High country men" were constantly asking for reduced rents of the pastoral holdings (Crown lands). T. D. Burnett called together "the men of the misty gorges" to deplore lack of public action to alleviate problems arising from declining native grassland through the impact of rabbits, briar, drought and erosion.

In the 1950's a Lands & Survey Department field officer, H. Sievwright, Timaru, made the first impact towards improvement, giving guidance to run-holders in lucerne and hay production and rotational spelling of pasture subdivisions. Officers of the Catchment Boards and Soil Conservation Division of the M.O.W. were also initiating field studies. In May, 1951, the college (Hudson and Gillespie and the board member from Marlborough, E. Reid) persuaded representatives of catchment boards, the Soil Conservation Council, the High Country Committee of Federated Farmers and interested Government departments to meet to inquire into the scope of current activities and to formulate proposals for development of high-country research. This committee met intermittently but received little support from Government Departments other than the D.S.I.R. which in 1952 established a Tussock Grasslands Research Committee. Finally, with Lincoln College offering the use of all its facilities the Soil Conservation Council agreed to form the proposed tussock grasslands institute. The Government insisted that the agricultural industry must be involved and when the Meat and Wool Boards agreed to assist, the Cabinet in March 1960, approved the establishment of the Tussock Grasslands and Mountain Lands Institute, but not the research station at Tara Hills (a soil conservation reserve).

The institute was to (a) investigate the various aspects of management of the tussock grasslands and mountain lands; (b) develop techniques to bring about a more protective and stabilising cover of vegetation so as to mitigate soil erosion and the choking of river channels with detritus to minimise flooding and to safeguard production; (c) provide a centre to facilitate the co-ordination of all research aimed to protect and improve the tussock grasslands and
mountain lands, and to make this information readily available to all interested people and organisations; and (d) foster and undertake research, where necessary, in any appropriate fields not otherwise covered.

The institute’s main activities have been covered under (c) and it has become a centre at Lincoln College to which students, scientific and practical workers have been drawn. It has established an international reputation and has attracted several well-known scientists to visit this country.

L. W. McCaskill, after his development of rural education at the college, moved into conservation and ecology, and was the logical foundation director of the institute, for which he sought supporting staff. The first chairman of the management committee was R. M. D. Johnson, Mt Torlesse Station (1960-6); succeeded by David McLeod, Grasmere Station, Cass (1967-72), A. S. Scaife (1973-6) formerly of Glendhu Station, Wanaka and J. M. Wardell (Dip.Agr. 1942) Omarama 1977-.

In reviewing his 14 years association with the institute, David McLeod said that the initial bias of the institute’s work was the re-orientation of high-country farming towards the basic object of soil conservation. With that in mind one of the first appointments was of a management officer (J. G. Hughes* B.Agr.Sc. 1951-3) who became much appreciated throughout the run country. The institute’s publications include the ‘Review’ three times annually and reference may be made to these for details of work accomplished to date. A feature has been the permanence of the foundation staff including in addition to Hughes, G. A. Dunbar (M.Agr.Sc. 1948), agronomist, J. A. Hayward (M.Agr.Sc. 1960) planning officer, E. G. White (M.Agr.Sc. 1961) entomologist. McCaskill retired in 1965 after five years of leadership. His successor, Dr S. N. Adams, who came from the U.K., was unsuccessful, and after three years he resigned.

Of the participating Government departments, Lands and Survey, because of its responsibility for administration of pastoral runs, continued in strong support and a proposal emanated in 1967 from J. Fitzharris, Fields Director, that his department should fund a chair in range management at Lincoln College and that the professor holding the appointment should be the director of the institute. This proposal was ratified and the management committee became a committee of the Lincoln College Council. This widened the scope of the institute into the whole area of mountain lands management and allied it more closely with the educational and research

* Mr Hughes lost his life in 1975 in a traffic accident.
functions of the college. The foundation professor of range management, appointed in 1969, was K. F. O’Connor.*

In 1971 the institute’s committee and the College Council issued a statement saying it intended to change and greatly enlarge the role it was to play in the management of the high-country environment. The director of the Water and Soil Conservation Council replied that there would be no money for any work outside the institute’s original brief, but subject to some provisos this decision “did not entirely eliminate support for new avenues of work.” After long negotiation with public servants and politicians, the Minister of Lands announced in 1977 that as a consequence of a general review of Government spending, plus the fact that the institute had moved towards the areas of responsibility of his department, it was logical that Lands and Survey should provide most of the supportive funds. The management committee and the college administration had striven mightily for this and the chairman, J. M. Wardell said “we are extremly pleased . . . as it assures the future of the institute which until now has been somewhat in doubt . . .” Meanwhile O’Connor, wearing his university cap, moves from the issues of directorship of the institute to those of a professor of range management. He is also responsible for the Lincoln College programme in the natural resources post-graduate diploma.

**Agricultural Economics and the A.E.R.U.**

With the appointment of B. P. Philpott** to the first N.Z. chair in agricultural economics came a dynamic decade of development in this subject, and the associated recruitment of graduate students and the influence of these and their teachers on several branches of the national economy. Philpott readily defined the scope of his subject and allied this to the economy. He had exuberance and vigour in presentation, though a colleague said of him that he was not a good teacher, “his approach being that of a foghorn!” This characteristic


may have been advantageous a few years later when he moved to the centre of national political power and was in closer proximity to politicians who were prepared to heed his economic warnings. Many men in previous periods, no matter how successful they eventually became, started their work at Lincoln without experience and were hesitant and cautious. Not so Philpott: he was fitted and able to move into speedy and successful development.

With this appointment, Burns negotiated with W. M. Hamilton, Director-General of the D.S.I.R., the pursuit of economic policies to encourage increased exports through an expanded economic research programme. The consequence was the establishment in 1962 of the Agricultural Economics Research Unit (A.E.R.U.) under Philpott’s direction and with an initial supporting grant of £5000 from D.S.I.R., £1500 from W.R.O., £700 from the Forest Research Institute, the college funding the salary of the director, providing accommodation and clerical services; D.S.I.R. (and other grants-in-aid) paying for other staff and research costs.

Thirteen years later (1975) under McCarthy’s direction the unit’s annual budget (receipts) was $105,900.

At the outset an advisory committee assisted in the formulation and assessment of programmes.

In the foundation year, Philpott’s support staff was Dr J. T. Ward,* J. D. Stewart, A. T. G. McArthur, R. H. Court, R. J. Townley, A. R. Frampton (later professor, Agri. Econ. Massey University), and research officers E. D. Parkes (now Australian Nat. Univ.), M. W. Calder (now N.Z. Meat Board), Mrs L. J. Woods (nee Matheson).

The central theme of the programme was to find the means of increasing the growth of agricultural production within three topics: market and production economics and agricultural industry relationships. The results secured were listed in publications that, when Philpott left Lincoln, totalled 65 research reports, six technical papers, 20 discussion papers. He guided 25 students in masterate programmes and two towards the Ph.D. degree.

Few staff members experienced Philpott’s degree of public exposure but he was widely appreciated as a writer, public speaker and broadcaster. There were no light touches in his lecture deliveries. He always moved immediately into the attack with no deviation from his thematic objectives. Once he unexpectedly deputised for a junior colleague at a diploma class who occasionally teased the junior, he not being a strong lecturer. A tame white duck had been

made comfortable on the lecturer's table when Philpott entered. Taking no notice of the duck he expounded impressively on the recent budget, neither he nor the duck being discomfited. However, a minute before the end of the lecture the duck rose from the table, jumped to the floor and in the manner of ducks waddled through the open door, incidentally leaving some evidence of its presence on the lecturer's table. Philpott made no acknowledgement of the incident: the students were in suppressed apoplexy.

Philpott's departure to accept the McCarthy chair in economics at Victoria University created a void at Lincoln particularly as allied staff were not retained. In the interim J. D. Stewart who had become professor of farm management in 1965 supervised the unit, but he was heavily involved also in the priorities of his own subject and department. R. W. M. Johnson (M.Agr.Sc. '51) who had joined the unit in 1965 after a period in Salisbury, Rhodesia, published several important papers on economic analysis of soil conservation and land retirement, capital formation of New Zealand agriculture, regional analysis of future sheep production. He then moved into the employment of the Economics Div. M.A.F. Wellington.

B. J. Ross* who was appointed to the professorship in 1970 had been a research officer in the unit. He also had an unusual distinction of being a registered post-graduate student for several years afterwards. A year later W. O. McCarthy** returned to Lincoln for what was to be a short, sharp effective term as head of the department, professor of agricultural economics and marketing, and as director, A.E.R.U. from 1974 when Stewart became principal of the college. In an early change under the new regime, the committee of management was replaced with a policy committee comprising the above two professors, the professor of farm management, J. B. Dent (p. 228) and the deputy director of the unit, Dr P. D. Chudleigh. To the original objectives in production, marketing and resource economics was added research on the economics of location and transportation. After McCarthy's return to Australia in 1977 Professor Dent directed the work of the unit.

G. W. Kitson and R. G. Pilling, through visits to Japan began studies on Japan-New Zealand trade, T. I. Ambler on rural transport and J. G. Pryde who came to the unit from the general


secretaryship of Federated Farmers of New Zealand, worked on agricultural policy. Some of the department's lecturing staff continued research work, including a man and wife team, J. L. and J. R. Rogers, A. T. G. McArthur, R. J. Brodie and P. W. Cosgriff.*

*Agricu* [l][e]*l* [t]{[g][e][n][e][r][a][l]} [e]*n*g[ineering and the N.Z.A.E.I.
A report by A. W. Riddolls (p. 119) in 1946 was adopted by the governors as the basis for the establishment of a farm machinery testing and research station. Support was obtained of farmer and commercial interests and the Riddolls proposal in 1948 was considered by a conference sponsored by the School of Agriculture from which it was agreed that the government should be requested to arrange for the establishment of a machinery station. Fourteen years elapsed with no apparent progress, until in 1962 with stronger support from Federated Farmers, the issue was revived. In late 1963, five months after Riddolls' death, approval was secured for the establishment of the N.Z. Agricultural Engineering Institute at Lincoln College.

As with T.G.M.L.I. and A.E.R.U., the Institute came under the control of a management committee** established by the college council. The government grant for the institute was to be funded through the Department (Ministry) of Agriculture except that the salary of the director as in the aforementioned units was charged against the college education grant. By 1976 the institute was running within annual financial support approximating $400,000, composed of M.A.F. $379,100, research contracts (Forestry, M.O.W., steel industry) $27,000 and a small amount as income from the subscription membership scheme.

The main work was to be testing agricultural machinery (commercial or confidential tests), research, development and extension. Following Riddolls's death, G. G. Lindsay,*** serving as lecturer-in-charge of the engineering department, was called upon to submit the work programme for the 1964-5 year. The first appointee to the institute's staff, G. M. Garden (Dip.Agr. 1958) who had sub-


**Mgmt. Ctte. N.Z.A.E.I. One member each appt. by Minister Sc., Dir.Gen. Agric., Lincoln College Council, Fed. Farmers; Dean Engin. U.C.; Principal L.C. two members appt. by the Mgmt. Ctte. Mr J. Boyd-Clark (p. 193) has been chairman since the inception (1964- ).

sequently graduated in engineering, collaborated with Lindsay and King (p. 161) in designing apparatus for the priority project at that time—testing tractor safety frames. In 1965, however, J. R. Burton* was appointed to the foundation professorial chair of agricultural engineering and also director of the institute and he brought a generally appreciated breath of Australian animation, vigour and disarming good humour to life and work at Lincoln. Other young Australians were attracted soon after, including W. C. Broughton, R. McMillan and T. D. Heiler, followed by two from England, E. M. Watson** and J. S. Dunn.*** A feature of staffing which expanded from six in the foundation year to 35 ten years later, has been the international element. Though the administration of the institute is dissociated from the engineering teaching department, the combined staff of the two is integrated under the professorial head and in 1975 with 31 professional engineers, nine technical officers, 20 technicians, and three clerks, at a total of 63 comprised the largest and most diversely active unit in the college structure.

With the almost completed incorporation of all other departments in the teaching centre (Hilgendorf and Burns buildings) the engineers have remained far removed on the campus perimeter, a self-contained entity, infrequent visitors to the senior common-room and thus detached from the often long non-technical discussions of the latter centre. During the first decade buildings for the engineers were regarded as adequate so long as they were effective as machine or technical workshops, design and drafting centres. Consequently this group has been in a miscellany of about 20 semi-detached building units with no question of any "ivory palace" attitudes among them but they wait with patience provision of a more worthy work centre.

Burton was an innovator who excelled in developmental projects, then was inclined to move into a new challenge. He guided his staff into the wider spectrum of service and research activity as


described in successive annual reports. For his own part he enthused on soil-and-water research and set in progress a team effort based on T. D. Heiler and D. J. Painter of the institute and Drs. T. R. Davies, D. G. Huber, B. Van’t Woudt and C. B. Judd of the teaching department.

During the controversy on the raising of the level of Lake Manapouri to provide the needs of the hydro-electric installation at Doubtful Sound he expostulated with a prominent conservationist that the problem was less one of drowning "a few trees and the birds and bees" than of defects in the hydrological design of the engineering installation. The noted conservationist was so irate with some of Burton's comments that he wrote an angry letter to him, contending that J. R. B. was a discredit to the university profession and image. After meditating on this censure from the south, Burton sent a caricature card for convalescents inscribed: "Get well quick, with best wishes, J. R. B." His accomplishment in the interest of agricultural engineering at Lincoln and for the country as a whole might well be regarded as the greatest value in the shortest time of any staff appointment.

The return to Australia of this popular professional man and teacher was regretted by students and staff. He engendered loyalty, could lift students from tedium with an apt Australian expression, and, of particular advantage, he had the closest accord with the principal, while retaining his complete independence and disinclination to be directed against his own judgment. The institute, however, went from strength to great strength through the appointment in 1971 of G. T. Ward* who also brought to his appointment wide and diverse experience.

Before coming to New Zealand Dunn had been associated with engineering work in Britain that had resulted in sugar beet changing from an industry requiring a lot of field labour to one based upon mechanisation, including precision seed sowing, and Dunn expanded this work in New Zealand, including now the use of his techniques in forest nursery sowings. (L. G. Copp, however, then working in the Wheat Research Institute had been the forerunner

when he published details of a precision seeder for use in small plot sowings.)

Another development which justified the institute's objective of making available to farm industry techniques that were competitive and cost-saving was exemplified by fruit-harvesting machines. A blackcurrant harvester took five years to develop. The N.Z. Inventions Development Authority was agreeable to underwrite the machine by a company nominated by the N.Z.A.E.I., hence it was patented and a licence agreement arranged for manufacture, the listed "true and first inventors" in the documents being G. M. Garden and R. J. Harwood. Five machines had been sold by the end of 1974 and the prospects of using the machine in the U.S.A. were being examined. The idea of this equipment was not originally conceived at Lincoln but rather at the Horticulture Research Station, M.A.F. Levin, but those people asked the institute to develop a machine for which the key mechanism was certainly the invention of Garden and Harwood. The success of the machine in being able to do the task of 150 field workers encouraged the group concerned (J. S. Dunn, R. J. Harwood, M. Stolp, T. H. Pratt) to continue to perfect equipment for mechanical harvesting of raspberries and apples grown under the lateral or canopy system, and, currently under development, equipment for field-grown tomatoes.

Other promising mechanical developments included those that impinged on farm fencing and reduction of construction costs. A fencing-baton machine was patented and licensed in 1975, K. R. Humphries and T. M. Collinge being named the inventors. Performance of farm contracts using aerial techniques having been long associated with New Zealand operators, requests were made for the institute to assist in resolving certain difficulties. Efficiency (cost cutting and reduction of drift of aerial spraying) in application of fungicides to Pinus plantations was emphasised in the work programme which varied in keeping with the objective of serving the current needs of agriculture.

The institute shared in expanding assessments of water resources, not only in New Zealand. T. D. Heiler for example, through his attainment in this work, was engaged for a tour of duty in Malaysia (1973-4) and then (1975-6) in the Aswan region of the Nile, Egypt, his programme being an example of the rating of so many Lincoln College staff in advisory assignments for international agencies (p. 268).

The N.Z.A.E.I., supported financially by the Ministry of Agriculture, has auspiciously passed through its first decade. The staff who had been so active and publicly involved were, however, unfortunate in not obtaining their allocation of new buildings and
facilities by 1976 as had other sections of the college. The building plan for engineering was deferred through national financial retrenchment.
CHAPTER 14

Multi-disciplines Among Departments

Lincoln was to emerge as a university school of graduate study, and the progress may be traced by reference to the three senior professorships, animal science, soil science and plant science, and to the other departmental disciplines as they attained professorial status.

The research work which is referred to in general terms hereunder, is documented with specific references in the manuscript deposited in the Lincoln College library.

Animal Science

By 1976 I. E. Coop had completed 30 years of service to the college, having been appointed professor and head of the department a few months after he rejoined the staff after the war. Lincoln's status in animal science at the time can hardly have been high for McMeekan had left to go to Ruakura, and with massive departmental support was building that establishment; and Massey College had always been strong in animal science, especially with its dairy influence under Professor W. Riddet. One can hardly be blamed for wondering what was going on at Lincoln when it appointed a person trained as a chemist to lead its animal research. It was certainly a humble beginning. Nevertheless, Coop combined his training in basic science with a lifelong direct association with farming and livestock particularly, to develop a strong research programme in sheep nutrition and breeding which was to stand more than favourable comparison with that in the other institutions. Initially Coop used the Department of Agriculture farm at Kirwee but transferred his work to Ashley Dene in 1949 and this farm from then until 1957, and again latterly, has been used for large scale experimentation for which it is very well suited. Subsequently in 1956 he persuaded the council to designate part of the college home farm for research purposes, especially for studies involving more detailed work. Some aspects of Coop's work achieved international recognition, notably his studies on the significance of liveweight in sheep pro-
duction and the manner in which productivity (lambing percentage) was dependent on liveweight.

Coop was helped by V. R. Clark who began as a technician, was unable to complete university training because of war service, but who subsequently reached senior lecturer status and national recognition as president of the N.Z. Society of Animal Production (1973-4), and councillor, World Association of Animal Production (1976).

The work of Coop and Clark on Border Leicester crossbred sheep was extended further in recent years. Many of these studies led to the establishment of the Coopworth breed of sheep (p. 159). Coop’s service at Lincoln was on a very wide base, for he was much more than a departmental head and team leader. Appointed vice-principal in 1958 he completed almost two decades as the confidant of the Principal. He was so dependable and every aspect of life and administration benefited by a cautious conservative attitude that buffered the enthusiasms or vociferations of radical elements.

It was noted earlier that Hart (having learned the techniques at Cambridge) was a pioneer in the study of sheep ova and is thought to be the first to transfer fertilised sheep eggs in New Zealand. He had also been an initiator of research on the influences of light rhythm on wool growth, but hopes that thyroxine implants might be exploited commercially to augment wool growth did not materialise. Hart then became linked with a team of medical scientists—Drs. D. W. Beaven, N. C. France, E. A. Espiner and others—who used the Johnstone laboratory for part of their work on adrenal and pancreas transplantation in sheep. (The laboratory is a memorial to J. A. Johnstone, Corriedale stud-breeder of Bushey Park, his family having contributed substantially to the cost).

This work severed Hart from agricultural research, but his participation in the programme illustrated how the facilities and staff at Lincoln College had outgrown the confines of agriculture. Increasing numbers of staff were now scientific workers in basic or applied research. Hart, however, kept his feet on the agricultural ground on which he had first stepped as one of L. J. Wild’s proteges at Feilding, and his skills were used in the annual selection of animals in the college sheep studs for sale, breeding or show competition.

The other long-serving member of the department, M. G. Hollard (p. 135) remained dedicated to all aspects of the dairy industry and to the husbandry of dairy animals. He managed the college dairy herds, supervised the dairy component in student courses and was recognised nationally as a dairy husbandry front man. He collaborated with K. T. Jagusch in feeding studies among town-supply cows and was a regular contributor to the journal, “Town
Milk”. A. M. Nicol joined the department through the upsurge of interest in beef cattle in the 1960s and took part in carcase composition investigations. Jagusch was an outstanding worker and lecturer whose output of scientific research per man/year at Lincoln was hardly equalled, and before he left the College to take an appointment at Ruakura, he accomplished a great deal in animal nutrition and body composition especially relating to lambs. The role of general purpose lecturers had been inherited by Clark and D. G. Elvidge*, who was a capable, extrovert personality, able to attend to the needs of large diploma classes.

Between 1968 and 1974 the department established and managed the first deer research farmlet in New Zealand, 2.0 hectares in three paddocks bounded by protective netting. The project was financed by the N.Z. Game Exporters’ Association through Maddren Bros of Christchurch and the first nine animals were captured by helicopter in the Wanaka region. Later five tame red deer were added. The objective was to record development of red deer under intensive farming conditions. The herd had multiplied after six years to 10 stags, 17 hinds and 12 fawns. Coop and Laming reported on management, stocking and reproductive rate, disease, liveweights and growth rates, venison yield and carcase evaluation. They found that high stocking rates could be achieved, that there was good reproduction and growth and that deer should produce as much meat per hectare as sheep or cattle. The deer farmlet, however, was an experimental side-line to the main research with sheep and cattle. The time devoted to the deer was as little as was necessary, consisting of occasional shifting of the herd, feeding hay in winter and tagging the fawns at birth. The wild deer never became tame and their progeny remained wild and only at considerable risk could they be yarded. The tame deer and those bottle-reared remained tame. After six years it was considered that the simple questions on the viability of deer farming had been answered. A decision had to be made whether a full-time scientist would be engaged on deer research and Coop did not foster this. The Invermay research centre, Ministry of Agriculture, had become interested and the decision to give away the deer farm to Invermay must have been one of the rare instances of Lincoln College conceding a project it had launched to another agency. Coop, asserting the greater importance of sheep and cattle in the college programme, also conceded that deer farming research would progress faster under M.A.F.

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than at Lincoln College. This appears to be borne out by the report by Drew, a graduate through Coop's department (M.Agr.Sc. 1961) on deer farming at Invermay.

The animal science graduates guided by Coop and his associates have been effectively incorporated in the research groups at Ruakura, Invermay and in numerous centres beyond New Zealand.

**Soil Science**

When T. W. Walker first came to Lincoln in 1952, the objectives he set for his department were to study any factors influencing the productivity of grass-clover associations. The emphasis was on the study of the nitrogen cycle in grazed pastures, nutritional factors influencing biological nitrogen fixation such as sulphur, phosphorus, molybdenum deficiencies, and the lime/molybdenum/Rhizobium interaction. This was the kind of work that attracted the team effort of Walker, Adams, Orchiston and associated students (p. 157) and stimulated interest in quantitative pedology. Instead of random selection of soils for field experiments, selection was made of sequences of various kinds.

The emphasis then, was on levels and composition of organic matter and forms of soil phosphorus. Walker had in mind that before man changed New Zealand soils too much, it was desirable to find natural situations where studies could be made of the influence of time, topography, climate and parental material on soil properties in order to understand better the soil-forming processes. This pattern of study was initiated in the Franz Josef chronosequence of soils and vegetation. A further major contribution to basic knowledge in soil science was made when Walker drew into his orbit two visiting workers—J. K. Syers, from England, and J. D. H. Williams, from Wales—who studied the fate of soil phosphorus, its transformations and losses. Papers on this topic by this trio and some supporting students included reports accepted by the world's most renowned journals of soil science.

Syers and Williams extended their studies into inquiry of phosphorus in relation to water eutrophication. Syers was then professor of soils science, Massey University, and Williams a scientist with the Lakes Research Division, Canada. The quality of research under Walker's guidance led some outside authorities, including Dr. M. Fieldes, former director, Soil Bureau D.S.I.R., to declare publicly that the "Lincoln School of Soil Science" deserved listing with the best of the kind in the English-speaking community of scientists, the University of Wisconsin. This stature was enhanced by other fundamental work demonstrated in the publications of A. S. Campbell on clay mineralogy. K. M. Goh's research on soil
organic matter was also internationally acclaimed and was reported.

R. W. Heine (p. 127), lecturer in physics, had completed creditable work in plant biophysics on conductivity and absorption as revealed by radioactive tracers, working then under the guidance of T. M. Morrison (p. 225). In the soils department he initiated a programme of research in environmental physics including soil water balance and potential.

In Walker's own judgment, the Lincoln group over the years probably did more than any other soils science group in the world to integrate pedology and soil fertility. The pedological work of E. J. B. Cutler, P. J. Tonkin and D. W. Ives involved studies on soil formation in diverse situations of several high country catchments, the Wither Hills, Marlborough, Ben Ohau range, Lake Pukaki, Chatham Islands. This was a period of basic soil research, the momentum of which has still not diminished. However, the relevance of research of immediate practical significance has not been overshadowed and Walker himself has been rather an unusual example of a university academic in the top rank of scientists, yet entirely competent as a general agricultural practitioner able to translate or communicate in matters of husbandry or farming. Thus he encouraged T. E. Ludecke (M.Agr.Sc. '62) to attract money (mainly to employ technicians) from the New Zealand fertiliser industry with which progress has been made on several problems including the utilisation of soil nitrogen in relation to wheat yields.

Several soil scientists from overseas had sought to spend time at Lincoln. Graduates of the Lincoln soil science school in the first 20 years of Walker's leadership totalled 32 masterates, 12 bachelor honours, 7 Ph.D. and 1 D.Sc. (J. K. Syers). In 1976, 11 further Ph.D. courses were registered in the soil science department and in that year 40 of the younger generation of soil scientists were working in a wide range of appointments in New Zealand, Malawi, Nigeria, Kenya, Singapore, Malaysia, Nepal, India, Bangladesh, Australia and Canada.

Plant Science

Illustrative of the metamorphosis from the agricultural college to Lincoln University college could be a study of Calder's (p. 57) start as an intra-murally trained lecturer who spent his working life at the college teaching field husbandry and was rewarded near retirement with a professorship. He was succeeded by a highly qualified German born English-university educated scientist whose acumen and intellect wrought the change from husbandry to plant science. There was nothing deficient in the former husbandry concept. It
served the educational and extension function of C.A.C. but it was fortunate that R. H. M. Langer* arrived when there was need for botanical specialisations to be integrated within a new definition of plant science. Iversen, followed by J. G. H. White**, C. T. Dougherty, G. D. Hill and W. R. Scott, retained agronomic interests and White continued to be a “front-man” for lucerne in the agricultural economy but other agronomic problems were under analysis. There was a new sophistication in the requirements of some projects. Earlier agronomists at the college might have thought they had fully elucidated the requirements of wheat growing, but by 1975, C. T. Dougherty (M.Agr.Sc. '63) was specifying his requirements in these terms—

“Additional instrumentation to monitor the crop environment and to measure the responses of the crop to the changes in the environment will be necessary. Detailed items for which this grant will be used include: “Systel” data logging unit comprising digital clock, central control unit, punch and interface, printer and interface, input channel cards, analog input units, connectors, cables and servicing operation manual, complete with cabinet. It is believed that it is now possible to start building a model of the wheat crop combining environmental and biological information in much greater detail and with more accuracy than has hitherto been possible.”

Dougherty was also author of precise studies on water stress in clover-growing under wheat.

With soy beans, an earlier 8-year agronomic study evidently did not fulfil the requirements of new disciplines and Dougherty also dissected this crop into the parameters of plant populations.

The work of Langer, his staff and student associates on factors or components in wheat yield was characterised by clinical precision and fullest possible biometric analysis. Langer was a plant physiologist of specialised interest and contributed to knowledge on basic plant processes in papers published in overseas science journals. He saw the need to present practical as well as scientific information, and contributed as editor of two major books on

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lucerne and pasture grasses, containing contributions derived from staff associates. A balance of specialisations in the department was strengthened through the work of three Englishmen—R. J. Field, P. Jarvis and M. L. Smetham.

A. G. Fautrier, a French-Canadian had responsibility for genetics in course work and G. T. Daly (M. Agr. Sci. '62) drawn to the cause of environment preservation, became the ecology specialist. His authority was also recognised in his appointment by the New Zealand Department of Health as a consultant in air pollution.

Plant science became a discipline that attracted relatively large numbers of students for graduate study. Their studies were aided by plant growth cabinets and roof glasshouses installed through Langer's initiative as part of the contract for the Hilgendorf Wing. The 14 units designed by Powell, Fenwick & Partners providing a range of controls of temperature, light and moisture, and though limited in scope compared with allied installations in large scale phytotron or controlled climate laboratories elsewhere, they gave benefit in class and graduate studies within several other College departments.

During a short period when T. M. Morrison was a physiologist in the plant science department he introduced a new research technique—the use of radio-isotopes in biology. He had studied the movement of radioactive phosphorus and sulphur in mycorrhiza of forest trees and in other tissues. Morrison had a confrontation with Albert Flay at an early stage. Becoming aware of a great excavation in the stony profile of the Ashley Dene farm, he said he was going to dump some radio-active waste material there. Flay was aghast and in his imagination anticipated the wholesale annihilation of his much loved Ashley Dene sheep flock. Graduates from Langer's plant science school, the largest within the departments, include plant breeders, grasslands scientists, agronomists, maltsters, university lecturers and professors, plant physiologists, geneticists and agricultural extension officers. They are prominent in university, government departments, agribusiness in New Zealand, Australia, South Africa, Kenya, West Indies, Malaysia, Britain, India and Pakistan, Thailand.

Biometry and computer science
Langer's view that field research could not be properly conducted unless under the scrutiny of biometric procedures was supported by Philpott, who required statistical knowledge and competence among students who were engaging in economic analyses. In 1965
through Langer's advocacy, N. S. Mountier* was appointed senior lecturer in biometrics, administratively attached to the plant science department.

Initially his work was as a consultant, and his guidance became evident in published papers that Langer had approved from his departmental colleagues. When an earlier certificate in experimental methods was incorporated into new degree structures, biometry and statistical methods stood in their own right as unit subjects. To provide for the inclusion of biometrics in degree and diploma courses, additional lecturing appointments were made.

As the computer at Ilam became overloaded, use by Lincoln staff was curtailed. Clearly a computer was required at Lincoln, and an I.B.M. 1130 was installed in 1967, initially on hire, later purchased and financed through U.G.C. grant, including a grant-in-aid for the building unit erected by college maintenance staff. Mountier accepted the additional role of director, computer laboratory, staffed with programme operators. He joined company with several others who were designated director of a research unit, as well as professor or lecturer— with two distinct jobs but paid as for one. He demonstrated the use of this far-reaching technological development at Lincoln where the computer was utilised in education courses being given in computer usage, in research (the A.E.R.U. being the heaviest user), and in administration (processing examination results, class rolls). In addition to full use of the Lincoln computer the college arranged for a terminal link (DC 1200) with the Burroughs B. 6700 at Ilam, sharing in maintenance and operating costs. This arrangement did not prove fully satisfactory and in 1976 the college bought a PDP 11/40 system.

The annual total cost of computer operation amounted to $52,000 in 1976, this requirement being met by appropriations from the research and administration funds. Mountier has written "over the next 40 years everyone will be influenced by computer usage, and in particular, every agricultural scientist will make extensive use of computer applications. The students we are educating now are going to be working in the next 40 years, and it would be a grave omission to neglect to give them acquaintance with the use and limitations of the computer. . . ."

Biochemistry

Before 1960 the only biochemistry instruction in Canterbury was that given by Coop in the animal nutrition subject of the B. Agr. Sc.

course at Lincoln. Burns had close personal links with Professors J. Packer and J. Vaughan in the chemistry department, University of Canterbury, and it was agreed that the Canterbury University chemistry department should support the creation of a biochemistry department at Lincoln. Provision for biochemistry and biophysics was subsequently written into the Canterbury quinquennial plan but as at 1976 the Lincoln department was still deemed adequate for the purposes of the combined Canterbury-Lincoln interests. A B.Sc. honours course was established based on biochemistry at Lincoln.

The foundation staff comprised two highly qualified biochemists, D. G. Wright and A. J. Wicken who served five years before Wright moved to Ruakura and Wicken to the University of N.S.W. Assistance was given in advanced teaching by specialists from the neighbouring Divisions of D.S.I.R. including R. M Allison, P. Meredith. A University department became fully established with the appointment by invitation in 1964 of B. H. Howard* as professor. The research interests of the staff team have tended to be allied to those of Howard, the leader, whose work on the biochemistry of rumen-inhabiting micro-organisms is internationally known, but a wide range of research has been covered including Wicken’s studies on composition of the walls of bacteria and aspects of plant bio-chemistry.

In 1966 Howard described success obtained within his department in the extraction of insulin from the pancreas glands of sheep. Though the insulin then used in the treatment of human diabetes was regularly taken from the glands of cattle and pigs, there appeared to be considerable promise in this new prospect that might reduce the chronic shortage of the drug.

D. C. Reanney** regarded as one of the original thinkers on the staff, published on the subject of viruses two books, “Life’s Language” and “Molecular evolution”. His paper “Origin of Life” was commissioned for the McGraw-Hill Yearbook of Science & Technology 1976; he attended by invitation the 29th Brookhaven (U.S.A.) symposium in biology (1977) and he was one of the participants who contributed to the recent alternative model for the structure of DNA (“Double Helix revisited”), Whitcoulls 1977.


Farm Management

An outstanding example of the success of the V.F.M. training and the manner in which it was used to guide the department to its position of eminence, is depicted in the career of J. D. Stewart.* Stewart's appointment in 1965 to the first chair in farm management was testimony to the way the subject had been developed by him as a product of the pioneers—Flay, Garrett, Cooke and associates. Before senior appointment and after his post-graduate experience in Britain, Stewart and Philpott (p. 206) had become closely identified and were aware of the need for greater emphasis on principles of production economics and econometrics. However, the Lincoln specification that farm management advice still had to be based on a thorough understanding of farmers and farming remained paramount.

There was a significant increase of farm management students in the graduate school. Most of them completed graduate study with both farm management and economics qualifications. Among the first group of masterates and their placement were N. W. Taylor ('62) economic service, Meat and Wool Board; D. A. R. Haslam ('65) for some years economist, Wool Board; J. M. Chetwin ('69) Treasury, London; M. W. Calder ('68) economist, N.Z. Meat Board; J. Holden ('65) Melbourne University; D. B. Lawson ('68) Victoria, and two present members of the Department, N. G. Gow and P. L. Nuthall, who returned from the University of Queensland.

The staff of the department were the most heavily involved teachers in the faculty, as the subject farm management was insisted upon as the core ingredient of all first-stage degree and diploma teaching.

The Farm Advisory Service continued viable and vital, even within the limitations of staff numbers that could be maintained in the work and the fact that at no time did the numbers of dependent farmers within the service exceed about 150. It appeared to be desirable for the efforts to be concentrated, at least for periods, within a region rather than diffusely distributed at distances from the College. It was fortunate therefore in 1964-5 during Stewart's incumbency as Farm Management head that he was able to make arrangements for the F.A.S. to service the needs of the Cheviot and

Amuri farmer groups in North Canterbury. (The Lauriston Club in Mid-Canterbury had earlier been guided by the F.A.S.). Progress and success ensued in that distinctively conservative farming region. The work of A. I. Bilbrough and A. C. W. Whatman with the Nth. Canterbury farmers was complemented by the involvement of H. A. Lissaman and the senior team member D. K. Ower on work in other districts where it was deemed politic to maintain a presence. Overall this work has provided participating staff—and in addition to the F.A.S. staff, other members of the Farm Management Department were encouraged to serve the interest of one or two farms each—with a fund of knowledge of the whole farm scene.

The work of the farm advisory staff provided a bonus in the managerial skill the advisers brought to the College Farm Committee. It also ensured a high standard in lecture course work, and farmer clients were always ready to provide material for class visits and farm tests.

When Stewart succeeded Sir Malcolm Burns as principal (p. 250) the appointment of J. B. Dent* as professor of farm management showed that the council had assured the retention of the department’s traditional strength, but had allied this with new concepts. Dent, as an earlier English visitor to Australia and New Zealand, respected the emphasis on practical knowledge and experience in farm management courses but with his world standing in computer modelling of agricultural systems, there was to be an upsurge of graduate activity in the department.

Horticulture

J. H. Glazebrook, S. C. Challenger and L. F. McElroy were cast in the mould of an English horticulture tradition; they had expert skills and were practitioners of an art. Strong links were retained with practical horticulture. Reports were made to the Royal N.Z. Institute of Horticulture (1959-61) and the value of N.Z. plants as ornamentals was noticed overseas.

Challenger also initiated a biographical series on New Zealand pioneers and personalities in horticultural development and he was the gardening correspondent of “The Press” (1960-62) maintaining a widely appreciated weekly column. He was followed by one of the department’s former students—M. Lusty (Dip. Hort. ’60).

Burns had a clear view of the opportunities of horticulture as a university subject. In 1963 university authority was given for the establishment of a chair. For three years efforts were made to induce a leading English horticulturist who had previously worked in New Zealand to accept the position. Eventually, in 1966, the council decided that the chair must be filled and of three local candidates on the staff, T. M Morrison* was selected. Thereafter he demonstrated an electrifying transformation in attitude to horticulture at all levels. About the same time a professorial appointment in horticulture was made at Massey University, the foundation professor, J. A. Veale also having been previously a member of the plant science department of Lincoln College (1951-60). A programme of development and growth that was expansive and dynamic was initiated and Morrison successfully utilised the opportunity, that the Principal had earlier envisaged, of fostering an academic programme in keeping with the changes that occurring from market garden production to those of a major primary industry using intensive cropping systems. Morrison established an organisation that was to make horticulture in course work, research and extension, co-equal with agriculture in the faculty.

Staff specialisation was planned. Challenger for instance, decided to qualify in landscape architecture and he was given study leave to complete the diploma in landscape design, University of Newcastle-upon-Tyne. F. D. Boffa (Dip.Hort. '61) also obtained qualifications (in his case in Georgia, U.S.A.) in landscape architecture.

Other foundation staff who participated in the horticulture renaissance were G. F. Thiele, D. I. Jackson and R. A. Crowder** the first-named to engage in horticultural management and fruit production, Crowder in the high crop density problems of vegetables. Further staff appointments were made as specialist diplomas were introduced.

By 1968, a 40-acre horticulture research area had been developed on the west side of the college farm, half planted in berry, stone and pip fruit, half in vegetable and grass rotation. General develop-

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ments included co-operative projects with the N.Z.A.E.I. including mechanisation in berry fruit harvesting. Crowder’s original work on direct-drilling techniques and high-density production of tomatoes for processing was first reported in 1970 and D. I. Jackson, the most accomplished scientist in the team, next to Morrison, retained interest in fundamental physiology but slanted this towards fruit trees and viticulture.

M. B. Thomas (M.Hort.Sc. ’71) became the floriculture specialist while another English emigre, H. Gill, studied aspects of labour management. The appointment of J. O. Taylor* to develop the parks and reserves course (p. 238) brought into the team one who was prominent in leadership in national horticulture organisations. At the end of its first decade the department was deemed to be more appropriately titled department of horticulture, landscape and parks.

Entomology

It will be recalled that this subject had been taught and studied at Lincoln since the foundation years and that later Lewis Morrison (p. 65) had presented his subject through 30 years service as a senior lecturer. During the period 1958-68 the title agricultural zoology was applied to encompass the wide range of zoological teaching, but with the appointment in 1961 of R. A. Harrison** the tradition of entomology was strengthened. His authority as an entomologist was internationally recognised; and as the Principal wanted to retain senior staff of such standing, a chair in entomology was established in 1969 with the appointment of Harrison a foregone conclusion. Other universities have entomologists on their staff and teach the subject within science courses but Lincoln still has the only entomology department within the University. Conversely it has no department of zoology! This academic development as with horticulture and biochemistry, coincided with the explosion of student enrolment with an almost 100 per cent increase between 1965 and 1971. Harrison was able to develop a

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staff structure that met the specification of zoology in course prescriptions (first year only) together with an animal ecology option (4th year degree). Beyond that the entomological specialisation dominated and within a few years the department was training the majority of applied entomologists to serve in New Zealand appointments while several went to positions overseas. By the end of 1975, 13 Ph.D., 30 masters and 5 bachelor honours degrees in entomology had been completed. Harrison administered a department of applied science, predominantly involved in studies on agricultural pests with allied research strongly ecological or chemical in bias. Three areas of graduate and staff research predominated:

1. A modern approach to the long-persistent scourge of pasture and crop pests infestation. Major reports were made by R. P. Pottinger* and his students. In 1974 he was attracted to Ruakura to take charge of a nationally-integrated team approach by many scientists, including several of his former graduate students, to the problem of pasture pests.

2. Harrison and others, including W. P. J. Overmeer, a post-doctoral fellow from Amsterdam had success in investigations on the mechanism of insect resistance to insecticides.

3. The nature and use of insect attractants under the direction of G. O. Osborne.**

There had been few graduates in entomology before Harrison's assumption of leadership but those who studied with Lewis Morrison had been successful. J. M. Hoy (M.Agr.Sc. '47) became Director of the Entomology Div., D.S.I.R. and was awarded the D.Sc. degree (Cant.) on the basis of his later researches: K. M. Doull (M.Agr.Sc. '49) was on the staff of the Waite Res. Inst., University of Adelaide and in 1977 was President of the International Congress of Apiculture, and B. B. Watts (M.Agr.Sc. '53) had become registrar, Agricultural Chemicals Board.

The dynamism of the modern entomology department was exemplified by the flow of higher degrees completed within the department under Harrison. In 1976 four students including Mrs. G. F. McLaren (nee Kellock, M.Agr.Sc. '68) completed the Ph.D.


Many of the students had subsequently gone to other universities on post-graduate support for Ph.D. study.

Environmental Science

Growing public interest in the 1970s on encroachment and impairment of the environment had several sources in the university. K. F. O'Connor, professor of range management, often spoke of his concern for the New Zealand natural environment and in 1970 he carried the Professorial Board with him to formulate a programme on natural resources. J. R. Burton assisted in devising the course. J. A. Hayward and F. D. Boffa, working under O'Connor in the T.G.M.L.I. were about to publish a significant report on resource management in the Waimakariri inter-montane basin. The outcome in 1971 was the course for a post-graduate diploma in natural resources, within the purview of the professor of range management, which may be regarded as the successor to the conservation course founded 25 years earlier (p. 152).

Meanwhile Professors G. A. Knox (zoology) and W. B. Johnston (geography) Univ. of Canterbury, in thinking of possibilities within quinquennial planning, were anxious that Lincoln and Canterbury should integrate academic resources in furtherance of environmental philosophy. The Vice/Chancellor of the University and the principal of Lincoln College agreed to set up a working party of the professorial boards of which Knox was chairman. From this a report was ratified in 1972 authorising establishment of a joint Lincoln-Canterbury programme in natural resources.

From the recommendations adopted, a University of Canterbury and Lincoln College Joint Centre of Environmental Sciences was established, with a joint board of studies to administer interdisciplinary programmes of teaching and post-graduate research. A director of the programme was sought, with professorial status, to be a member of the professorial boards of both institutions and of all relevant faculties, the budget to be equally shared. A most eminent zoologist (entomology), P. S. Corbet* was attracted to the position of director in 1974. Unlike other academic units that had evolved, this one (and to an extent biochemistry) had no humble tentative beginnings with lecturer status during the proving years. Corbet was akin to a field marshal without any divisions, so much so that first communications to him even exceeded the normal authority of

the registrars and were jointly signed by the Vice-Chancellor and the Principal. An early administrative exercise was to devise a suitable stationery letterhead. That duly accepted, again by Vice-Chancellor and Principal, would rank probably as one of the most grandiose within the university system. With the respective heraldic crests of Canterbury and Lincoln flanking the impressive title of Joint Centre for Environmental Sciences, reference points were also provided to say whether the communication originated from the Ilam or the Lincoln office of the director. The first additional staff appointment in 1975 was that of M. Jensen, as post-doctoral fellow "to produce an authoritative report on a carefully selected topical New Zealand environmental issue." Corbet relinquished the position early in 1978 in favour of a professorship in zoology at Canterbury.

The Lincoln one-year post-graduate diploma in natural resources (four students in 1975) is to be continued, to assess its possible future in relation to the two-year masterate programme (environmental sciences). It is believed there is need for both courses but the future of the Lincoln diploma depended on the opportunities open for graduates.

The first graduates of the course (M.Sc. in resource management 1975) were placed in employment as follows: G. J. Burke, N.Z. Electricity Department; M. C. Holm, Commission for the Environment; C. N Taylor, self-employed; G. B. Wilkinson, N.Z. Forest Service.

Microbiology

During its first 25 years, this department had two lecturers and some technical assistants, the lecturers later advancing to readerships with dual control. Within the first decade of establishment (1945) the department attracted graduates in numbers second to none of the other departments of the college. Arrangements were made (1945-50) for several Canterbury University College masterate students in botany to pursue thesis work in plant pathology at Lincoln, including I. A. Cruickshank, now C.S.I.R.O. Canberra A.C.T., H. T. Wenham, Massey University and Melva (nee Crozier) Philipson. Three graduate students from India (K. B. Ram (1948), A. Sankaram and A. Patwari (1957) were among the first Asian students to come to Lincoln College before the Colombo Plan, while among the masterate students of this first decade were R. H. Thornton, later director, Cawthorn Institute, Nelson, and H. C. Smith, director, Crop Research Division, D.S.I.R., E. C. Wrat, Marlborough farmer, D. A. Shackleton and S. A. Menzies, Plant Dis. Division, D.S.I.R. In 1960 the department attracted J. B.
Robinson, Guelph, the first scholar to elect to do graduate work at a N.Z. University under the Commonwealth scheme. His Ph.D. research made a substantial breakthrough in understanding of microbial physiology in tussock grasslands soils. Allied work at a masterate level was completed by A. H. Nordmeyer (1966) Forest & Range Research Station, C. F. Tan (1965) Malaysia and Virginia Price (1968) U.S.A.

There was both balance and wide coverage in research development. Blair continued plant pathological work supplemented with further research on legume rhizobia. A strong appointment was that of R. F. R. McNabb* who, in a relatively short career, terminated by premature death in 1972, became an internationally known mycologist. He supervised the work of several students of plant pathology including at Ph.D. level, D. M. E. Knox (1973) later University of Witwatersrand, and the masterates of R. E. Falloon, Plant Diseases Division D.S.I.R.; W. A. Jermyn, Crop Research Division, D.S.I.R.; S. H. Manning and C. T. Mortlock, Dalgety (N.Z.) Ltd. After McNabb’s death control of the plant pathology interest of the department was subsequently in the care of R. C. Close.**

A. P. Mulcock*** the first staff member to complete an intramural Ph.D.**** course (1961) was enterprising and hard working, and attracted considerable outside financial aid for projects of his design. He guided several graduate courses on aspects of biodegradation, including three Ph.D.’s—Barbara Peddie Ph.D. 1969 (stored grain), M. J. Noonan 1971 (forest organic matter) and A. M. Cundell 1972 (rubber).

The professorial board advocated a chair in agricultural microbiology in 1964. Ten years elapsed before this recognition was given. In 1974 Mulcock, after 24 years on the staff, was appointed to the foundation chair. The department remained small but energetic. Mulcock had become authoritative and was facing new

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**** The first Ph.D. awarded for a course of study at the college was in 1958 (Univ. N.Z.) to D. G. Dakshindas, India, under the direction of Dr. J. A. Veale.
challenges, including those of water and food technology, and in keeping with the energy crisis that emerged in 1974, the possible development of ethanol from agricultural crops. In the latter project he was integrated in a national research group, funded by the N.Z. Energy Research and Development Committee. J. L. Sumner (food technology), R. C. Close (plant pathology) and M. J. Noonan (water biology) maintained the departmental balance.

With this maturity of the microbiology department, the academic structure of the college was, by 1975, complete and stabilised. Dr. Burns, as principal and chairman of the professorial board, had been close and influential in all general and personal facets of events related in this chapter. He persuaded the council to establish a college research fund, the first one of the kind in the New Zealand university system. It was built up by appropriations from the general education grant, supplemented by farm surpluses and from the results of council policy of charging the college farms 5 per cent on capital for research and other purposes. The U.G.C. research grants made no provision for materials, travelling or labour and were generally directed towards equipment and minor capital items. The college research fund, within the control of the council research committee, had flexibility and as the fund grew it became a most useful source of support. A particular merit of the college research fund was that it enabled grants to be made promptly to new appointees without the delay, sometimes long, in getting the money from some outside agencies.

In the three years from 1973, the amount available from this fund for use on staff projects was successively $71,392, $55,527, $58,179. All research departments participated and in 1974 there were 48 separate grants ranging from a minimum of $100 to $27,500, the latter being the college contribution to support of the A.E.R.U. (p. 206). In 1975 the total provided for staff research was $922,478, at first sight an amazing increase compared with approximately $62,000 12 years before (1962) when research began to grow. The largest grants, however, in 1975 were those from State departments to support the institutes: A.E.R.U. (D.S.I.R.), N.Z.A.E.I. (M.A.F.), T.G.M.L.I. (M.O.W.) totalling $586,768. Other large research grants (1975) included: beef cattle research $40,983 (Beef Cattle Breeders' Ctte.); horticulture research $11,690 (N.Z. Vegetable & Produce Growers); several projects $89,427 (U.G.C. research ctte.); wool $9795 (Wool Res. Organisation) and $88,000 (N.Z. Energy & Research Develop. Ctte.).

The last item was for the development of three projects, wind energy survey (G. T. Ward), investigation of alcohol production from crops (A. P. Mulcock), study of energy costs of crop produc-
Greater support for university research work, one of the recommendations of the Hughes-Parry report, gave a fillip to graduate work at Lincoln. The annual registrations for Ph.D. were more than 50 by 1976, which number exceeded the number of graduates in agricultural science eight years previously. Two aspects of this trend were disturbing. One was that a few students were being encouraged to proceed to the higher degree after a lower-degree association with Lincoln. Whatever justification was offered, this inbred association would not be tolerated in universities which do not regard numbers of graduate students as a yardstick to measure stature, or have left behind the early growing pains of a graduate school. The other tendency which caused some concern was the ease with which several staff members were registered for a Ph.D. programme but were unable to complete it in a reasonable time. This situation was not peculiar to Lincoln, and time limits have now been amended to prevent abuse of the system.

The graduate school was undeniably strengthened by overseas scientists who were attracted to Lincoln by the annual post-doctoral research fellowships and graduate scholarships instituted by the U.G.C. Lincoln was allotted one post-doctoral annually, the full universities two and E.C.A. Runge (soil science) from the University of Illinois was the first recipient in 1969.

Benefits also came from having professional people who were regional representatives of other organisations living at the college. These included from 1968—S. D. Walker (B.Agr.Sc. 1953), South Island officer, N.Z. Sheep and Beef Cattle Survey (N.Z. Meat and Wool Boards); Miss J. E. Radcliffe (Research Div. M.A.F.) in the plant science department. Good work also resulted from acceptance in the graduate school of young scientists seconded from the positions of first employment in the State Services. They were enabled to complete higher degrees under professorial supervision while retained on full salary. Meritorious work was completed by these candidates, exemplified by B. J. P. Molloy (plant science) from the M.A.F. and I. McCracken (plant physiology) from the N.Z. Forest Service.

The attainment of the present-day Lincoln graduate school appears to be of moderate merit when judged on research institute (full-time worker) standards. Judged in relation to the involvement of participants like Coop, Walker and others in a great deal of university and sub-university teaching, as well as in several forms of extension and public relations, research attainment of several at Lincoln in the modern period has been quite outstanding, in keeping with the achievements of other multi-functional servants of the
earlier Canterbury Agricultural College.

This chapter on the development of the academic staff establishment may be concluded by contending that as the 100th year approached, the staff at Lincoln were admirably qualified, efficient and dedicated and fortunate to be working in laboratories, classrooms and facilities second to none in the university system. They were generously supported by the council in participation of refresher leave benefits (full salary during absence, travel costs and allowances) and with funds for regular travelling within New Zealand. The period of salary inadequacy of the 1950s was only in the memory of a few. The continuing endeavours of the Association of University Teachers in consultation with the Salaries Committee of the U.G.C. had by 1975 achieved academic salaries that compared with those of United Kingdom universities, though short of Australian levels.

Certainly in the New Zealand socio-economic context of 1977 there would not be many citizens who would dispute that Lincoln College staff were well rewarded for their services, on the evidence of professorial salaries ranging from $20,000 to $25,000, and with most sub-professorial members on starting salaries generally in excess of $10,000 per annum. The community at large would be entitled to expect in the future, substantial endeavour and accomplishment from those now favoured to be based upon this well-provided centre of learning.
CHAPTER 15

Evolution of Degree and Diploma Courses

The decade of dynamic progress after 1965 may be regarded also as the one in which courses of instruction—diploma and degree—underwent the most radical of the successive revisions. The causes included more students, a staff of more diversified talent and experience and the diversified demands made by the community. The professorial board increasingly deputed staff groups to assess course structures and bring down proposals for improvement adapted to the assessed needs. The results are revealed in the present-day schedule of courses offered in the College Calendar.

The agencies which recruited students should be recognised. The rural education department had become primarily the college public relations office. The role of McSweeney* and his associates was manifest in supervision of the extension services and indirect recruitment. In addition to McSweeney, upwards of 18 other staff members in recent years have willingly joined in school liaison work.

Many students entering the college have indicated that apart from their own inclination, the influence that encouraged them was that of some former student of the college. School liaison work and other recruitment agencies resulted in the numbers of new entrants to the College between 1968 and 1970 reaching unprecedented levels. In these years the diploma of agriculture first year intake exceeded 200 and the bachelor degree (Agric./Hortic.) first year enrolment was approximately 100. Total enrolment exceeded 1000 in 1971 and has remained about that figure, with a temporary drop to 930 in 1974, but in 1975 an increase to 1042; to 1234 in 1976 and 1344 in 1977 (see Figure, p. 236).

Lincoln College has now had a century of educating farmers and those who service the farming industry. This was the function of diploma courses (though many degree graduates have also become successful farmers). By 1975 almost 3000 diplomates had been trained. Burns was supported by his council and staff when he reminded a succession of national conferences that the college had been serving practical agriculture through diploma courses since 1880, and that without equivocation it would continue to foster and develop these within a university environment.

Since the regime of practical work for students ended (p. 133) the key features of the diploma and the requirements of entrants had been: (a) an emphasis on farm management, especially on-the-farm "field trip" instruction; (b) a combination of full-time pre-entry farm work undertaken with private farmers* and academic, technical and field studies in residence at the College; (c) a tutorial programme of supervised extra-mural study for students engaged in pre-entry farm work, (this particularly heavy involvement in recent years also was the responsibility of rural education staff members such as G. R. Lyall, G. B. McLeod** and J. E. Fenwick), and (d) lectures and other course work given or supervised by professors of the college.

Diploma students, having been away from school for two years during which they had worked on farms, had developed a responsible attitude that attracted an accord between student and lecturer. However, in some years there was also a near-hoodlum element in diploma classes which harassed some lecturers unable to discipline them. It was difficult to detect absenteeism in the large classes, but because the registry had to have confirmation that students had "kept terms", attendance lists were circulated during lectures. It was thus learned that among those present were additional names of legendary characters such as "Cassius Clay", or "Mick Mouse". There was improvement in tone and behaviour when the huge diploma I class was transferred from the temporarily adapted iron barn (now an engineering laboratory) to the tiered, insulated, air-conditioned theatres of the teaching centre. There were no longer incidents such as the arrival of a car-load of students, driving their noisy vehicle through the barn-like doors and alighting ostentati-

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* Two years supervised and reported work on farms (one year for horticulture) after completion of a minimum of three years secondary education. Preference in entry was given however to applicants who had attained U.E. standards.

REFERENCE POINTS, ENROLMENT GRAPH. (First year entrants)

Up to World War II a level of diploma of agriculture and degree enrolment occurred with no significant changes and no growth.

A From 1945, increase associated with Rehabilitation training.

B Drop in the mid-1950s associated with — elimination of practical farm work at the College and some resistance to the new diploma course, no publicity among schools.
Increase however in the degree course after 1956 associated with elimination of Intermediate at the Universities and the adoption of science subjects in the first degree year at Lincoln.

C Post-war increase in birth-rate coming into tertiary education, 20 years later.
Improvements in accommodation; Influence of public relations work, extra-mural activity, school liaison; period of economic affluence; when Massey became full University there was a great increase in diploma students from the North Island at Lincoln.

D Drop in early 1970s, through — some disillusionment with large diploma classes; farm recession in this period and disenchantment with agriculture as a career; support being given for farm cadet schemes and the M.A.F. training courses at Farm Institutes.

E Increase 1975 — employment situation not good — many leavers filling in time on vocational courses; bursaries became available for diploma students; diploma courses re-structured and widely publicised in schools.

F VFM course began 1938 but was suspended during mid-War period.
For 20 years numbers were held through stringent R.F.C. recruitment requirements. Build-up 1960-1970 correlated with increased numbers qualifying for entry via the large diploma classes.


H Initial drop in the Agr. Commerce degrees after the first year which commenced with a backlog or build-up of applicants.
Numbers then moved up again as popularity of the Farm Management option increased and as this took over from the VFM course. Inauguration of the Agr. Com. degrees also lead to a drop in entry to the B.Agr.Sc. 1971-2 since when an increase has been occurring.
ously beneath the lecturer's podium, or of the inclusion of a live goat in a class after one of the lecturers had announced that the pending examinations "would at least enable us to sort out the sheep from the goats". These provocations were tried only with some lecturers.

The division of students and staff into "agriculture" and "horticulture" was viewed critically despite efforts to find opportunities for integrated lecture and laboratory work. The artificiality of this division in modern primary production appeared untenable in the judgment of some employers. For the present, however, T. M. Morrison defended horticulture as a discipline in its own right. For every concession to agriculture as a course, he asked the Professorial Board for the same for horticulture.

The evolution of courses of instruction at Lincoln has been a process of building structures from primary blocks; the first degree course, B.Ag. (p. 54) and the first specialised diplomas, V.F.M. and horticulture, have been revealed as outgrowths of the diploma of agriculture. In recent years staff groups convinced themselves and persuaded the Professorial Board and the Council that further specialisation would provide course diversification that would attract superior students and cater for emerging needs in the community. The length of the diploma course (two years pre-entry work, two years instruction) had also become an impediment and the awkward programming of two academic sessions (March-August) with further compulsory practical work in the intervening six months created difficulties in integrating students into College life.

In the planning and discussion, primary producer and other employer interests were consulted. Courses offered in 1974 were expected to obviate previous limitations and to serve contemporary needs more effectively. Students, after completion of pre-entry requirements, were able to enter upon a course of study occupying one full academic year at the college and qualify with a diploma. Students who completed this course with distinction were encouraged to proceed to a second specialised year.

The second-year management diplomas were based on the need for a well-trained managerial class. There were also career opportunities for these students in mercantile firms. A diploma in field technology had also been discussed with employers. The demonstrated need was for practical, trained field technicians to conduct experiments. Two other courses derived from Morrison's planning provided for people who wanted to work as assistants to landscape architects or in park administration. From the inception of the latter course in 1972 about six students entered annually.
In 1976, the Lincoln course became a two-year academic study after pre-entry practical experience in the national parks, this being sandwiched between the two academic sessions at Lincoln.

The products of the diploma courses, especially those from the basic non-specialist diploma, have generally been employed in practical agriculture. The employment of 677 recipients of the diploma of agriculture from 1964-70 was shown by G. B. McLeod to be: farming 58 per cent; salaried employment Public Service 19 per cent; commercial 8 per cent; miscellaneous 14 per cent.


In 1932, 60 per cent of the students (in two courses) in the college were being prepared for a career in practical farming. Forty years later among more than 1000 students (in 18 courses) less than 20 per cent aimed for a career in practical agriculture or horticulture. Farm manpower in New Zealand declined between 1951 and 1971 from 17 per cent of the labour force to 11 per cent. There was moreover an 11 per cent decrease in the number of farm holdings in New Zealand between 1960 and 1970 and a 20 per cent decline in the area being farmed. Productivity of New Zealand agriculture with fewer farmers using less land was however steadily increasing through the application of technology, mechanisation and trained expertise. Further, on the figure of the Government Statistician (1971 census) it was concluded that 25 years hence 90 per cent of the New Zealand population would live in cities or towns; 67 per cent of the population in 1973 lived in 24 urban centres and the number of truly rural
New Zealanders was in 1973 only 18½ per cent of the population, a decline of 27.3 per cent since 1951.

Several farming educational proposals in which the college was interested were discussed over the years, but all came to nothing. In this education no-mans-land a force of bureaucrats had been biding appropriate time for a take-over. This came in 1974 in the form of a government decision to require the Ministry of Agriculture to provide for sub-university training of young people for farming.

The Ministry began promoting a nationwide farm training scheme based on two institutes, Flock House at Bulls, and Telford, a farm centre at Balclutha, established about 1965 by farmer interests in South Otago. The foundation manager and principal was R. F. Snell* a Lincoln diplomate.

A triple system (Lincoln College, the Massey Agriculture faculty and the Ministry of Agriculture) to service education needs of the primary industries in a small country appears to be unfortunate. Lincoln College was already both a university and a rural technical institute. Within the college there are purely technical courses such as wool classing and meat inspection, as well as the range of agricultural degree courses. The pleas of spokesmen for the Ministry of Agriculture that the training courses for farmers it contemplated "were if anything, designed to stimulate the demand for more formal degree and diploma courses" (at Lincoln or Massey) are difficult to understand. The Lincoln plans for organisation of sub-university extension and training in the service of the farm community were aborted simply through lack of financial backing by the Department of Education (including the U.G.C.) not through diminution of interest among the College staff in the needs of the farm community. However, for various reasons, direct services to farmers began to diminish. This continued until the Ministry of Agriculture simply took over a plan for farmer education, almost identical with one Burns had earlier advanced. The ministry, however, was required to fund the development within its own budget, estimates and staffing—entirely independently of the Education Department to which the Lincoln College planning had been tied. A close integration between the college and the ministry should be expected. The ministry, in Canterbury at any rate, has delegated one of the advisory officers to confer with the college staff at regular intervals in all matters that have relevance to the farm extension programmes.

E. R. Hudson, C.B.E., B.Sc., B.Ag., Dip.Agr.,
Director 1936-52 (Portrait, W. Sutton)

Sir Malcolm and Lady Burns.
M. M. Burns, M.Sc., Ph.D., F.N.Z.I.C., Senior Lecturer Soil Science 1937-48, Principal
(with further distinctions, K.B.E., C.B.E., F.R.S.N.Z., F.N.Z.I.A.S., F.A.A.A.S.,

(Christchurch Star)
STUDENT OCCASIONS

Above   Farewell to student “All Blacks”, I. A. Hurst (recipient) and D. A. Hales (in shorts, far right)

Below   The equipment required (right) to photograph the Students Association, 1971.

(E. R. Mangin)
Tranquillity (1953) in the years before extensive building development.

Twenty years later (1974) Administration—Library and the Hilgendorf wing.
The Hilgendorf wing.

Administration building and library extension.

(E. R. Mangin)
T. J. Morrow, Wool Instructor for 18 years, at work with two 1939 diploma students.

Wool course group with J. C. Simpson (centre), instructor-lecturer since 1951.
Above  College bred Coopworth ram

Below  Coopworth stud on the College Lyndhurst farm 1977.

(E. R. Mangin)
When the graduation groups were small (1961) (procession led by J. D. Mackay, Warden).

(Green & Halin)

Council and staff group 1974 Graduation (Presentation of Bledisloe Medal to Dr. Lloyd Evans, F.R.S.).

(E. R. Mangin)
Organ transplant operation by Dr D. S. Hart (lower) on sheep—Johnstone laboratory.

Controlled climate studies by Dr R. J. Field, Plant Science.

(E. R. Mangin)
TUSSOCK GRASSLANDS AND MOUNTAIN LANDS INSTITUTE

Above  Field Inspection (Ohau) by Management Committee

Below  Professor K. F. O'Connor, Director (left), G. A. Dunbar (right), A. S. Scaife, Committee Chairman 1973-7 (second right).

(J. Runge)
CO-OPERATION IN RESEARCH

Above Dr H. C. Smith (left) Director, Crop Research Division, D.S.I.R. and Dr I. D. Blair (author of this volume), consider a wheat problem.

Below M. B. Thomas at work in one of the Horticulture Research Units.
CROP PRODUCTION ON THE HORTICULTURAL RESEARCH FARM

Above  R. A. Crowder's project with field grown tomatoes—precision seeded, mechanically harvested.

Below  Strawberry plantings planned by G. F. Thiele.
EXTRAORDINARY DAY ON THE CAMPUS (4 MARCH 1977).

Centre left to right  H.R.H. the Duke of Edinburgh, D. W. Bain, Chairman of College Council, Her Majesty Queen Elizabeth II, H. G. Hay, Mayor of Christchurch.

Ordinary day on the Campus.

(E. R. Mangin)
ROYAL VISIT MARCH 1977
H.M. Queen Elizabeth II escorted by the Council Chairman, D. W. Bain.
Above left  Professor J. D. Stewart, M.A., Ph.D., Dip.V.F.M., F.N.Z.I.A.S., Principal since 1974.


Below right  Miss Joan Mahony, Secretary for three successive Principals, 1946-78
RECENT DEVELOPMENTS DERIVED FROM HORTICULTURE

Above  Parks and Recreation students preparing a management plan of a reserve.
OLD STUDENTS REUNIONS

Above  United Kingdom Group 1960, host P. G. Young, Dip.Ag., 1939.
(Front centre) "College Farm", Cirencester.

Below  Return visit after twenty years (1947 Diploma class)
EVOLUTION OF DEGREE AND DIPLOMA COURSES

It has been observed that benefit was derived by the college and the community in general through the location at Lincoln of allied institutes and organisations. In 1973 Burns said he regretted the Ministry of Agriculture had not been persuaded to establish its headquarters for Canterbury contiguous with the college. The Ministry was establishing an important research centre at Templeton, but he felt on the long term it would have been advantageous to place it at Lincoln. Fortunately the ministry’s leaders accepted this and took advantage of the college’s readiness to provide accommodation. Twenty members of the Soil and Field Research Division, M.A.F. were established in offices and laboratories of the former veterinary block in 1976, with R. C. Stephen as regional scientist, heading the group engaged on the Ministry’s work in soil fertility, weed control, entomology, pasture production and biometrics.

Degree Courses and advanced diplomas

After three years of deliberation by the professorial board and final approval by the University of Canterbury, “new” degrees in agriculture and horticulture were adopted in 1968. Horticulture, it may be conceded, “came of age” when the incongruous former degree designated B.Agric.Sci. (horticulture) was replaced by the B. Hortic. Sci. With the Agr. Commerce degrees of 1971 and other degrees of non-agricultural connotation based upon Lincoln College, the full calendar listing of University courses was:

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During the period of palmy days for revisionists, advanced or post graduate diplomas had also been instituted. Some of these, for instance Dip.Agric. (or Hort.) Sci. instituted in 1962 and 1967 respectively, were intended to enable graduates from other faculties to take a fourth year B.Agr.Sci. option as a bridge for entry into agricultural science.

Langer contended that the objective in reviewing the degrees was to retain strength in general agriculture, but in addition to cater more adequately for the specialised opportunities that were developing in agricultural science and business. He said that without sacrificing the role of the basic degree in producing advisory
officers and managers, it was hoped that the prescription innovations would enable an increased output of technologists both in science and in the business sphere.

Naturally in the degree negotiations opportunity was taken to revise prescriptions. The basics were strengthened, mathematics and statistics being made obligatory for all. Prescriptions for physics and chemistry were formulated in keeping with the needs of students in the faculty of agriculture. The subjects of physics and chemistry were obstacles to some students in passing the first examination.

There was no unanimity among the staff concerning either virtues or evils of the degrees they had constructed. Attempts to rationalise and reduce the proliferation of subjects had failed, for whereas subjects like agriculture A & B, biological science 1a and 1b were prescribed and defined, in practice they were presented by several lecturers from different departments, each laying claim to lecture time and laboratories to reveal their agricultural or biological science ingredient. Though the examination subject was agriculture, it comprised separate lecture courses in crops, pests and diseases, applied botany, farm engineering etc.

The B.Agr.Commerce degree was another Lincoln "first" and the inaugural intake of 129 in 1971 denoted a level of support that surprised even the optimistic. The first graduates (1974) were all readily absorbed and distributed as follows: research economists 8 per cent; general economists (banks, Treasury) 12 per cent; trade and marketing specialists in Producer Boards, Dept. Trade and Industry 20 per cent; economic advisers, Min. Foreign Affairs, consultants 16 per cent; management-marketing, commercial firms 24 per cent; university, school teachers 8 per cent; farmers, farm supervisors 12 per cent.

About the time that the agricultural economics degree was being incubated the future of the college diploma of valuation & farm management was under consideration. There was no doubt of the merit of this course. It had been a great success since establishment in 1938. One thousand and sixty men and one woman had been accepted in the course and with the last graduating class (1975) 959 had attained the very high standards set for lecture room and field work in the award of this diploma. In some respects the discipline of field test and oral examinations had the elements of commando paratrooper training. The selection panel of earlier years would have been horrified if any women had appeared before them as Rural Field cadet applicants. They were looking for a hybrid between a potential All Black and a senior business executive. The V.F.M. story did not close with a hallmark of male chauvinism.
Possibly the most striking event in the terminal history of the course was that in the very last class, a woman student, Elisabeth Geissen, was awarded the diploma.

The translation of the V.F.M. resulted from discussions Stewart, then professor of farm management, had with several State Services employers. J. Bruce Brown, Valuer-General (Bledisloe Medallist p. 322) was eager to provide a degree qualification for valuers and his successors as valuers-general, V. P. McGlone and M. R. Man­der, both products of the V.F.M. course, also favoured the development. State Advances (Rural Bank) leaders also supported translation, though the other major employers of V.F.M. men (Lands & Survey and Maori Affairs) were neutral. Evidence had been accumulating that there were some disadvantages in the non-degree status of the course, as for instance, in the relativity of Public Service grading and promotions. The image of the course in some overseas quarters was also said to be impaired by non-degree status. Right from the start in 1937 Hudson had said that the training embodied in the V.F.M. was envisaged as leading to an alternative degree to B.Agr.Sc. but he personally was not disposed to face the university processes of negotiation, thrust and counter-thrust required of new degree proposals. In his time Burns however was able to surmount such difficulties and a course parallel to economics was introduced into the B.Agr.Com. degree—the valuation and farm managment option.

It continued to retain an alternative stream, for surveying and building construction had always been required in the V.F.M. and the importance of qualified valuers comprehending drainage, irrigation, soil conservation and mechanisation was still accepted. It was desired also to ensure that any degree changes in this course would not preclude some graduates entering practical farming, hence the retention of an engineering option in the B.Agr.Com. degree that replaced the V.F.M. course.

The V.F.M. Diploma has provided many Lincoln men with qualifications most helpful in their subsequent careers. A dozen became national and provincial leaders in State departments and as many again rose to general and branch managership in stock and station agencies throughout New Zealand. Farming itself absorbed another dozen or so. Though the diploma was by no means a prerequisite to success in business or industry it was certainly a close qualifying competitor with higher degree honours, and was a base course for many men who entered university and allied occupations. Many people are not yet convinced that the V.F.M. course needed to give way to a degree structure. It remains for the future to reveal whether the new form, B.Agr.Commerce (farm manag-
ment) also competitive in job recruitment with some other university degrees, will retain the clearly distinctive V.F.M. aura.

Proponents of the former course would have been gratified to note that 82 graduates B.Agr.Com. (V.F.M.) were derived from the 1974 and 1975 graduation and that they were placed in the traditional avenues viz.: Valuation Department, Rural Bank, Lands & Survey, Maori Affairs 43 per cent; agric. business 11 per cent, farmers 24 per cent; farm management consultants 8 per cent; producer boards 4 per cent and university 10 per cent.

In engineering, the post-graduate diploma course (Dip.Agr.Eng.) had attracted only eight students in the 10 years from 1965. Agricultural engineering components continued to have high priorities in the prescriptions of the bachelors degree and the agriculture-horticulture diplomas. A breakthrough was achieved after the successful negotiation, largely by Burton, that resulted in a full agricultural option in 1967 being incorporated in the University of Canterbury Bachelor of Engineering degree. This four-year course entailed two years at Canterbury or Auckland, the third year at Canterbury and Lincoln, the final year solely at Lincoln.

Academic work in horticulture began to flourish when Morrison employed the recruiting agencies in schools and other public relations contacts used by the sponsors of agriculture courses. In 1975 there were 56 students within the stages of B.Hort.Sci. compared with 254 on B.Agr.Sc. But in the undergraduate one-year diploma there was an upsurge of interest in horticulture. Landscape Architecture had proved to be a successful venture, advancing from five enrolments in 1969 to 19 in 1976 (year 1 and 2). In the first five years of the landscape architecture section and the associated landscape advisory service, 20 design studies were published mostly under the authorship of A. E. Jackman (B.Hort.Sc. '65), F. D. Boffa (Dip.Hort. '62), S. M. Mason (Cert.L.D. '71). These were major works of professional skill and art. Challenger was the guiding influence, inspiration and taskmaster. There was however, little rapport between the Lincoln School of Landscape Architecture and the profession of conventional architects. On the other hand, landscape architecture as at Lincoln, was generally appreciated among the civil engineering professional groups and also by the State Services Commission. The latter quickly came to esteem the Dip.L.A. and to find opportunity to employ such graduates. Fifteen out of 23 graduates (1970-5) were thus employed. Naturally Challenger was encouraged to form the N.Z. Institute of Landscape Architects (1973) as a fully professional body, aiming to safeguard employment, standards and ethics.
EVOLUTION OF DEGREE AND DIPLOMA COURSES

(Membership 94, 1975).

In the first 75 years of the life of the college, 264 bachelor degrees had been conferred. In the ensuing 20 years (between 1956 and 1975) a little more than 800 had graduated bringing the list of graduates and post-graduate diplomas to somewhat in excess of 1400. There was substantial opinion however among some Lincoln professors that despite their sincere endeavours, “all the revisions (four of them) have been virtually ineffective. They have just been time-and-space juggling operations. We have not encouraged or forced lecturers to change or revise—it has all been a sounding board for the young fry on the staff—the stirrers”.

In concluding this review of the academic state that had evolved at Lincoln, a little more should be related concerning the staff who were pivotal in all that had taken place or developed.

The staff had long outgrown the pragmatism of the “staff meeting”, called at intervals by the Principal to arrange some jobs of work, and the Professorial Board of relatively few numbers did not deliberate on the affairs and interests of the rank and file. Though dominantly conservative in outlook, the staff had become beneficially leavened with a proportion of men not nurtured by Lincoln College itself. The horticulture appointments had attracted some members of particularly keen intellect and radical philosophy. Young radicals and non-agriculturists, and original thinkers had a beneficial effect on exchanges of viewpoint. The Association of University Teachers, an organisation of which Lincoln had been a founder member (p. 122) still had vigour with 100 per cent staff membership, but it unashamedly confined its forums to consideration of conditions of employment. In 1964 the academic staff constituted themselves, with council endorsement, into a Faculty presided over by an elected Dean. This office was held in successive two-year terms by professors McLean, Langer, Harrison, Howard, Morrison and McCarthy. Faculty meetings were an intellectual safety-valve and “think tank”. Several innovations were derived from Faculty discussion and ratified by the Professorial Board, one of the first being the adoption at Lincoln in 1965-6 of Heine’s semester plan, the first of the kind in New Zealand. Eventually the arrangement of all course work into two semesters was of demonstrable benefit to the efficient use of staff time and to improvement in students’ performance.

In 1975, the Faculty endorsed its dissolution and its reconstitution as the Academic Assembly, including all teaching, extension, research and administrative staff concerned with academic matters. It was decided to meet at least twice a year under an elected chairman. The Assembly was to review matters of academic concern
and provide a forum through which the Principal, Registrar, Professorial board, Council and other groups could communicate with the college as a whole. The plan was ratified by the College Council and the former faculty regulations (1975 Calendar) were revoked and replaced (1976 Calendar) by the new definition of the Academic Assembly and the Boards of Studies. Langer, the sheet-anchor during 20 years of innumerable exchanges on academic affairs, was designated Assistant-Principal, a position that in no way affected Coop who continued as Vice-Principal—the second in command.

Surveys were being conducted, some of them by students, of the lecturing ability of staff members. It did not always follow that good teaching ability as such qualified staff for promotion, but there was some merit in these assessments. It is perhaps more than coincidence that the best lecturers on the staff were those who have had the closest affinity with students and who have devoted much of their extra-mural time to administrative and coaching work within sporting clubs.

As Lincoln ceased to be a first name or nickname community, between 1950 and 1975 when the roll of full-time students rose from 176 to 1042, there might have appeared to be a lessening of staff identity with students, beyond the confines of lecture room or laboratory. In the university system, staff closely interested in the humanity and personality of students are certainly not a majority, but Lincoln is still, a small institution. For that chief reason, but also because many staff as in the past seek an identity with their students, tone and harmony of staff and student relationships are still admirable. Professor Harrison (p. 226) said that he became a rugby coach to get to know students better than he was otherwise able to in the large classes. A system of personal tutoring was initiated by D. S. Hart (p. 116) and functioned with fair success, volunteer staff members having allotted to them, up to a dozen students with whom they arrange regular personal and private conversation. Students however, were becoming confronted with likely confusing forces, increasing diversification of courses, obsolescence of old skills and demand for new ones. Thus a specialist careers advisory officer was appointed, Ormond Wilson* being the first to hold the position.

CHAPTER 16

A Comprehensive Public Image

After Sir Malcolm Burns retired as Principal, the University of Canterbury awarded him an honorary degree of doctor of letters.* At the conferment ceremony Burns reviewed his years of service and accomplishment at Lincoln. He said he had liked being in an environment where things were happening, that he had had good people to work with and he liked students. The most important single thing that had happened at the college in the last 22 years was the erection of the Hilgendorf Wing, the first wing of the teaching centre. For the first time it had provided first-class teaching and research facilities within one major building.

One of the things that has given him great satisfaction was the development of a very close association with the major departments of State. He had always maintained that Lincoln was an institution serving the whole of the country and had thus consistently maintained a policy of including in all teaching programmes a national outlook, because at least a third of the students came from the North Island and a high proportion of graduates and diploma holders were subsequently employed in positions which at some time took them to the North Island. He had never had any doubt that one of the greatest strengths of New Zealand agriculture had been the extremely close association between farmers on the one hand and the scientists in the State departments and at Lincoln and Massey on the other. Certainly Lincoln College had consciously worked to maintain that close association.

Sir Malcolm and Lady Burns continued to live in Christchurch and he retained close personal and social associations with his former council and staff colleagues. His administrative skills, assiduity and enthusiasm in committee work were translated to the functions of president of the Royal Society of New Zealand, chairmanship of the Nuffield Advisory Committee and of a business

* Citation by R. H. M. Langer—University Canterbury Chronicle 1974.
consultancy, and as in 1976 chairman of a fact-finding group on nuclear power, set up by and required to report to the Government.

The east extension of the academic centre was officially opened by the Minister of Education in 1976 as the Burns Wing. The name was appropriate, the monument matched the man: it was large and commanded attention from all angles of vision.

The role of Principal in 1952 when Burns assumed the office necessitated involvement in virtually all college activities—farming operations, the general administrative and domestic economy, close supervision of teaching, research, advisory work and capital developments. In time he was able to bring the administrative structures to a form in keeping with modern needs. As he grew in the position he was able to delegate to proven people and stand behind them. Thus buildings became the responsibility of an officer of the registry; the farms were run by several staff members as an advisory committee. So too with supervision of research, where the academics were encouraged and supported. At the end of the Burns era therefore it was accepted that his successor should be one fitted to take advantage of the supervisory role now made possible for the Principal, and that leadership required less of pragmatism and more a capacity to stand off, view the college as a whole and anticipate or plan directions in which continuing development would be most beneficial.

The Council of the college (earlier the Board of governors) has throughout this narrative appeared to be more or less a formal controlling authority with relatively little influence on major policy. Possibly this was because Lincoln College has always had a full-time Principal—the equivalent of a Vice-Chancellor—as the academic and administrative head. It would be true, however, that Lincoln council participation in broad academic and financial policy and in detailed surveillance of farm practising has been more noticeable in the last two decades. Burns knew the value of keeping his Council fully informed and on utilising the particular qualities of its members.

As many of the Council were drawn from the farming community, from direct or indirect government appointments, from election by former graduates and diploma holders, this body was widely representative of the New Zealand community. Nor has it been exclusively a Canterbury or Christchurch-oriented group. It has had the benefit of membership from the far north to the far south of New Zealand. Perhaps the Council’s members and their varied interests have epitomised the wide public responsibility for agricultural and allied teaching in New Zealand’s economy and has appropriately enough been generally recognised as a watch-dog...
guarding the development of the college in the national interest.

Although primarily conceding teaching, academic and research policy to staff through the Professorial Board, the Council has not hesitated to probe and to question various recommendations which were likely to affect the kind and the quality of the output of diploma and degree students. It has been significant, too, that leading roles among Council officers have been fulfilled by educationists, former students and farmers alike. This role of watch-dog for the public—as encouraged more particularly during the Burns era—has brought into being a co-operative spirit in the college community more noticeable now than ever before. Burns, and more recently Stewart, will doubtless have noted an increasing tendency for Council members to ask questions within a very broad spectrum of policy issues.

Encouragement has been given to the development of mutual confidence by paid and unpaid administrative officers in the institution. The College can be grateful for the voluntary time and services willingly given over the century by those who have assisted its development.

Membership of the Council has become a prestige appointment, and long terms have been served by some members.

Council chairmen, under the Lincoln College Act 1961 were: T. D. J. Holderness* a product of the college; Sir John McAlpine** bringing the benefits of a combined farming and cabinet minister experience; and D. ·W. Bain*** with the wisdom derived from long years of service to the University of Canterbury with which Lincoln has been affiliated.

Critically important functions of the council have been to select and appoint the right people for key leadership, most important of whom has been the Principal, who at Lincoln has the ranking of a university Vice-Chancellor. From 13 applicants, the serving head


of the farm management department, Professor J. D. Stewart was appointed and took office on April 1 1974.

He had developed his department into one with a wide participation and responsibility in most aspects of the college life and work. Students from the department (especially V.F.M. men) had become influential throughout New Zealand and beyond in advisory work, commerce, government service and in practical farming.

There was widespread approbation among academics and farmers that in the appointment one of the department's most outstanding graduates had attained recognition.

After completing his V.F.M. in 1949 he spent a year in the economics unit, department of agriculture, until appointment as assistant lecturer in farm management in 1951. He worked extremely hard, completed an M.A. in economics (Canterbury) the Ph.D. at Reading (1959) and in 1964 became the first professor of farm management in New Zealand. By then he had embarked on the advancement of applied farm management to serve a new generation of management advisers, while also strengthening management methods on the college farms. His participation was sought in national deliberations, and his particular forte was then used by the government in expanding the New Zealand programme of economic aid to developing countries. He led a New Zealand economic aid mission to Indonesia (1971), was associated with the World Bank and U.N.D.P. on an assignment in Iran (1973), and in 1974, visited Saudi Arabia and Iraq to identify projects suitable for New Zealand participation. He was consultant in 1975 for F.A.O. in Uruguay on an appraisal of farm extension services there, and at the end of the same year was engaged in Hungary and Rumania investigating prospects of New Zealand participation in developing the sheep industry of these countries. He was then appointed chairman of an advisory committee to the New Zealand Government (1975) charged with monitoring the overseas aid programmes. Professor Stewart earned equivalent esteem in rugby football. Through a quarter of a century he had been successively a rugged front-row forward; captain of his Lincoln College team (1949) and Canterbury University teams and a playing member and later selector-coach of Canterbury Ranfurly shield teams. The rugby attributes of fortitude and determination would be among those he relied on as he approached the task of leading Lincoln College.

One can recall from what has been related that the inheritance of leaders on assuming office had sometimes been one of disarray, depression, disorder or a degree of impaired morale through unfortunate occurrences. Stewart acknowledged that the college handed
to his care to be in fine heart and condition in all respects. For reasons quite dissociated from his appointment, there were two initial alarming developments. The first was that the growth phase, with which had been linked steady provision of finance for capital development and maintenance and servicing had been interrupted. But there was a reversal of the trend with the enrolment of 1234 in 1976 and 1344 in 1977. There was reason to believe that this increase was the result of school leavers' difficulty in finding a job, coupled with generous bursaries rather than confidence in an agricultural career. The second development was that within his first year, Stewart had to face problems arising from restricted quinquennial grants and authorisations and a general economic downturn.

The Council Chairman, the Principal and the Registrar were the triumvirate of administrative power. H. G. Hunt (p. 114), in the 27 years preceding his retirement in 1976, had been identified with every step in the progress of Lincoln College. In 1949 Hunt inherited a registry of 15 administrative and services staff. He might have found this reasonable as support force for a college of 40 academic staff and 220 students occupied within one degree course, three diploma and two certificate courses. By 1976 the requirements of sound administration needed a registry staff which exceeded 100, organised to cope with all phases of finance, property and academic development. Hunt's work as treasurer was appropriate to what is now one of this country's large and complex public institutions*. Of this aspect, he said, inter alia:

"From 1878 with its first receipt of income from rents, the college remained self-supporting until 1928. In that year the first government grant was accepted.

"During the early 1930s, the level of government grant averaged $7,000 with enrolments of 29 students each year.

"The establishment of the New Zealand School of Agriculture, (1937-50) resulted in increasing financial support from government for both agricultural colleges, Massey and Lincoln. Despite difficulties in rationalising development in the national interest, the existence of the school operated as a catalyst for both Lincoln and Massey ensuring, through a leap-frogging process, that each developed at a faster rate than would have otherwise happened.

"To this extent, the school's very existence assisted the furtherance of specialised programmes in agricultural education and research. These previously had been barely supported by a community whose standard of living rested mainly on the efficiency with which it managed its land and water resources.

* By 1975 Hunt was supervising a budget that included the items of income—government education grant $3,085,047, grants research $928,457, students fees $176,610, farm sales $405,312, hostel catering $527,189.
"This lack of support remains difficult to understand, for on the shoulders of both Massey and Lincoln rested the burden of training the artisans, teachers, researchers and future leaders in agriculture and horticulture.

"It was not until the introduction of the quienquennial or five-year block grant system for financing the university colleges and special schools that long-term planning was possible for the two agricultural colleges".

The first block grant was made in 1950, and "despite the concept of independence, uniformity and direction by the University Grants Committee came creeping into each block grant allocation."

"It was during the period of the registrarship of J. A. S. Kirkness (1939 to 1948) that the college accounts first evidenced signs of the professional understanding needed to reflect the true financial position of the college and its activities.

"During the immediate post-war period Kirkness was assisted considerably by the appointment of G. H. McEwen, B.Com. A.C.A. 1949 to 1954, to the new position of accountant, and 1946 saw the first introduction of separate accounts for the student hostel.

"To provide much needed relief on the accounting side, J. H. Martin* was appointed accounts clerk in 1950. He served the college well under H. J. Walker, accountant 1954-60 and E. R. Noonan, accountant and deputy registrar (finance) 1960-76. In 1976, Martin's deep understanding of college financial affairs and long period of service resulted in his promotion to Deputy Registrar (Finance)."

Under Hunt's guidance the financial section of the Registry was reorganised. In 1949 the college accounts had taken three months to settle. Within two years, this was reduced to three days.

With the increasing size and differing demands of the institutes now based within the college, and with the growing complexity of college functions, including the introduction of computers, several additional specialist posts were progressively created in the registry. At the time of Hunt's retirement in 1976 there were 17 on the staff of the registry. The increasing detail of modern operation is reflected by the change from 11 pages of government-audited accounts of 1949 to the 49-page requirement of 1975, with supplementary detailed farm accounts of 130 pages.

This modern presentation required separate statements for six grant accounts, three internal services, 20 trading accounts, two

A COMPREHENSIVE PUBLIC IMAGE

institutes, 97 trusts, 62 external research grants and 159 special purpose funds.

For the first time in its history, by 1975 an inventory of all college buildings and equipment had been compiled to the satisfaction of Audit Department.

Hunt was secretary of the Council and its committees, of the professorial board, the institute management committees and of the residential organisations—Hall council and Union halls management. Though he established career positions among his staff—specialised positions of responsibility and allotted to these some of his functions, it was not his attribute to delegate wholly and he remained a dominant influence. He was succeeded as Registrar in 1976 by G. A. Hay.*

Although additional Government grants were annually made for purposes outside the education block grant, for instance, support of the N.Z.A.E.I., A.E.R.U., and T.G.M.L.I., the college was by no means a state-operated and funded educational institution for financial support as between the State and its own resources the college was unique among the universities, some of which were dependent on government funding of up to 80 per cent of requirements.

Of the farming involvement of several ancillary services funded out of college revenue, the extension services merit particular attention starting with an appraisal of the farms as a base for extension activity.

After 100 years the college occupied one of the largest and potentially most productive composite farm holdings in New Zealand. The 11 soil types defined on the farm at Lincoln were representative of the best productive soils of Canterbury. In 1974 the value of the farms (land, stock plant) exceeded $1.5 million and gross revenue was $352,000. With the exception of 20ha. comprising the central campus, the property was subject to normal rating.

Although the farm was no longer used to provide training for students, the area had been steadily extended. By 1973 gown and farm had been separated. Until the early 1950s the farms were never far from the daily scene or round. Even the more strictly academic members listened appreciatively to what Bevin, Flay, Garrett, Calder, Stevens, Coop or Iversen had to say about their farming, generally in close affinity with the superintendents like Tebb and Oldfield. In the period when the whole academic staff could be packed on straw bales on the deck of the largest farm truck they

happily joined in conducted tours of inspection, with the inimitable Charlie Brown at the wheel and one of the management experts expounding on the state of affairs. 25 years later among a staff listing of approximately 140 academics, fewer than 25 per cent had any interest whatsoever in the farms, knowledge of them or of their uses. The endeavours of Ryde, Ower and others in the farm management department to provide a monthly bulletin of operations were appreciated by their colleagues in management, animal science and a few in other departments, but the document to most was just another wave in the sea of paper.

In general, no large areas or numbers of livestock were now being used in research and demonstration of practice on farm paddocks had become sporadic rather than regular. Students generally were more familiar with operations on farms beyond the college through class or group visits. The agronomists and animal scientists were among the more consistent users of farm facilities. J. G. White, like Hilgendorf 50 years before him, knew that the best place for students to learn about grasses and weeds, or the optimum condition of a cultivated seed bed, was out in a college field, often on hands and knees. Even with large classes (200 plus) some of the plant and animal men, more husbandry than science-oriented, arranged regular farm walks by classes.

Everyone supervising the college farms knew that they were expected to make a profit. For almost 60 years the college was able to use farm cash surpluses for miscellaneous needs. Soon after the establishment of the council of the School of Agriculture there were moves—of non-Lincoln origin—to control the use of farm profits. This greatly irked Hudson when the results of his excellent management were being revealed in profitability of the Lincoln property.

A formula was eventually agreed upon wherein the farm profits were required to contribute a proportion within the general education grant. Since those days the college has been conceded full control of all farm and other trading activities, but on the understanding that no call could be made on government funds to recoup trading losses. This authority is also dependent now upon the maintenance of a farm income fluctuation fund, invested as cash reserves, equivalent to 18 months’ salaries. Based on the 1974 operation for example, the amount of $178,000 was to be held in that account. Farm surpluses enabled the council to provide many houses and replacement buildings, maintenance and development schemes, as well as varied supplements to research and teaching needs, or miscellaneous grants-in-aid to student amenities.

Details of the farming operations are recorded in annual issues of
the Lincoln College magazine. Some of the units were reasonably profitable after an interest on capital charge of 5 per cent perhaps through in-built trading advantages—the town supply dairy for example. The period of greatest success was in the five-year period from 1950, but twenty-five years later with a down-turn in the economy and notwithstanding the enhanced efficiency of operation within the units, the farms appropriation account was in deficit.

The Town Supply Dairy farm under Hollard’s 20 years of enthusiastic control had achieved its aim of obtaining maximum net returns from the sale of liquid milk, allied with the rearing of small numbers of pedigree bulls as yearlings. Production was high, averaging (1974/75) for 234 cows, 3969 litres milk, fat test 4.1 per cent and with milk-fat yield 164kg in 278 days. With a feeding programme based on irrigation of 40ha of the total area (156.2ha) plus winter supplements the unit was judged to be among the top groups of the type in the region. There was consistent profit ($23,483 in 1973).

The Mixed Cropping unit was managed with the aim of securing high returns from cash crops (peas, wheat, barley, potatoes), small seeds (clover and grasses) and a flock producing export lambs. Ryde*, also a long-serving supervisor, showed how the programme had produced high profit, averaging about $14,000 in the 1962-64, a period when boom prices were paid for white clover seed. The unit made losses during 1969-72 partly through low yields in drought seasons but also through extra costs of development, including spray irrigation equipment, which along with other factors led to a surplus of $10,800 in 1974. The unit was next to the dairy in all round value to the college and was deemed to be among the top 30 per cent of mixed cropping farms.

The Seeds farm was established to demonstrate management requirements of an arable unit devoid of stock, with work and servicing done on a contract basis. As with mixed cropping it enjoyed advantage when white clover seed was in high demand, the net profit being approximately $6000 in 1973-74. The unit was disestablished in 1975, the land being incorporated into the dairy farm.

The Stud Sheep Unit was based on high-quality animals (Romney, Southdown, Corriedale, Border Leicester, Dorset Horn), selection of breeding stock being based on recorded performance and type. From a highly profitable unit until the mid-1960s, when stud sales were good, the unit became steadily in deficit, reflecting

general depression (as at 1974, loss $7814) in the stud breeding industry, allied to the substantial development costs charged against the unit as its location and form were altered. Under low profitability the unit is justified on the basis of its research and education value but the justification for retaining five breeds for research has been debated vigorously within the farm committee.

The Research farm served to provide for requirements of research programmes in soil, plant and animal sciences. Most use was made for sheep breeding and nutrition trials (Coop, Clark, Jagusch), the beef cattle research (Nicol) and Henderson’s fleece-wool research. The plant science department retained a small area for miscellaneous field plots until 1976 when it occupied a new area of 30 acres that had formerly been part of the dairy unit. Pottinger (p. 227) retained one field for ecological studies on population dynamics of pasture pests. The area had also included the deer farm. While college flocks of Coopworth were retained on this unit, there was high profit ($12,799 surplus 1974) with the boom in sales of this new breed.

The development sequence on the dry land farm, Ashley Dene (p. 130) had attracted generally more public interest as the whole operation there tended to be innovative. The objective was to use modern techniques of lightland management for fat lamb and wool production. Policy changes occurred, from subterranean clover to mixed pasture and then a lucerne economy. The three-tier sheep-breeding system of mating own replacement Corriedales to Border Leicesters and these to fat lamb sires was simplified to a two-tier form, in which Corriedales were bought in rather than bred. By 1973 however, a one-flock sheep system prevailed based upon a Border Leicester × Corriedale flock.

Ashley Dene in the 20-year period from 1956 was usually substantially in credit, and the integrated operations afforded excellent demonstration material in field day programmes. Ashley Dene “since Hudson” has been the most successful of the farms in every way, revealing the benefit of a succession of excellent managers, supported by supervisors keen to encourage research towards results that could be rapidly incorporated into practice on this farm.

In the integrated organisation a Central Unit was somewhat amorphous. It was the repository of equipment, machinery, garage and fuel services, and made purchases on behalf of other units. Its contract and labour services were charged out, as for instance against the seeds farm, but as the units became self-sufficient in equipment, and facilities moved away from the campus centre, the unit which was consistently in debt, was abolished, although the central services stores control was retained.

The acquisition in 1966 of the North Canterbury hill property
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west of Hawarden, "Hunua" (translated "high infertile country") was made possible from the disposal of the remaining Hakataramea (South Canterbury) endowment. It furnished a "problem farm", typical of a considerable area of marginal country, with the disadvantages of low rainfall, little land which could be cultivated or sub-divided, poor shape for access, low carrying capacity and low cash income.

The management was required to develop it within the limits that would be imposed on any private farmer unfortunate enough to occupy "Hunua". Initially only the amount of developmental capital which could be borrowed was used, with subsequent development, if any (subdivision, topdressing, stock management), dependent upon revenue. After four years, sheep numbers had increased slightly also with liveweight gains, and some maintenance topdressing was done. The end of the first 10 years' effort however showed annual deficits (over $10,000 1973/74) including a disaster year (1973) when a severe August snowfall decimated the sheep flocks. Despite the farm's inability to earn much money, research was continued by plant and animal science men, especially those who liked to get away from comfortable Lincoln, fit themselves with nailed boots and clamber about among the intractable crags of this "land uplifted high". Abundant feed in two wet seasons allowed a modest surplus ($9,500) in 1975-6, but the property's peculiar shape caused difficulties and there was no flat land for hay or forage. A view was developing that the college instructional and research interests would be better served if "Hunua" were sold in favour of a hill country property on Banks Peninsula.

The funds realised from the sale of the Rangitata lands (Mesopotamia) were used in 1975 to buy an additional 25ha at Lincoln (Henley Block) and a 142ha farm in Mid-Canterbury, the Lyndhurst farm. The objective was to reinvest capital promptly on an inflationary market and to provide a farm for the profitable Coopworth Stud that had become too large to be accommodated at Lincoln. By the end of 1976, $83,000 had been spent on capital development, including a manager's residence and automatic border-dyke irrigation. On this soil, a Lismore stony silt-loam like Ashley Dene, there was opportunity to develop most of the area under an optimum automatic system of border-dyke irrigation. The college had returned to this form of irrigation after the 40 years since Flay, James and Cooke (p. 77) had been front-runners.

Horticultural Research Area

Until the mid-60s the practical work in the two-year diploma in horticulture course was carried out on college properties. In the
grounds, in which profit and loss balance sheets were inap­propriate, this appeared to work reasonably successfully with the small numbers involved. In the nursery however, unskilled student labour was not up to producing saleable propagating material. The nursery made losses and the reputation of the department suffered as a consequence of dabbling in commercial production, and also in fruit and vegetable production with a small market garden and orchard which were contracted to supply produce to the hostels. Naturally, this produced a great deal of argument on reasonable prices, and the decision to buy instead from the auction rooms in Christchurch proved at first to be an embarrassment to the depart­ment of horticulture but later was a blessing in disguise. At that time an orchard of two and a half acres and a freshly established planting of three acres offered a ready source of after-hours’ fruit to hostel students. The constant race between the horticultural staff waiting for fruit to mature and marauding students was frequently lost by the establishment. In addition to the orchard, a vegetable area of about one and a half acres, to which was added a newly established two acres beyond the present engineering department, supplied vegetables to the hostel and, peculiarly, to newly-appointed staff. Between a half and one acre of blackcurrants made up the remainder of the commercial horticultural area.

The advent of Thiele* and Crowder on Professor Morrison’s staff, specialising in fruit and vegetable production, the removal of diploma students from practical work at the college and the cancel­ling of supply of fruit and vegetables to the hostel altered sig­nificantly the department’s commercial programme.

The wide range of crops and the limited area still encouraged criticism from growers that results obtained were not commer­cially viable. The expansion of horticultural staff, the division of the available area into small blocks, the loss of crops to student plunder, the indifferent soil and micro-climate of the area, all combined to convince the college that a larger area, laid out as a compromise between a research station and a commercial unit, was well jus­tified. An area of 34 acres was set aside on the research farm and sufficient capital funds made available to provide shelter belts and an irrigation system. In characteristic Lincoln improvisation, an old henhouse was used as the packing shed for the first year of produc­tion, but was soon replaced by a permanent and ample facility, though its roof was demolished in the gale of August 1, 1975, which

also left havoc in other forms. The scene was set, therefore, to see if
the claims made by the department could be verified and to prove
that horticultural crops could play a substantial part in the farming
industry. The objectives defined by Morrison were: “to answer
criticism that university research was not of commercial applica­
tion; to provide a production area in which highly innovative
techniques could be developed and put on a commercial scale; to
provide an area for detailed research on a single plant, plot or field
scale; to provide information on management and crop returns
using traditional and new techniques; to assist extension and teach­
ing through demonstration of crop production; to provide staff the
same opportunities to practise crop husbandries and production as
were available to staff on the agricultural side of the college; to
stimulate new methods of marketing and management and to
become a stable force in commercial horticulture in the Canterbury
area; to combine profitability with innovativeness.”

The success or otherwise of the research area in achieving these
objectives can be judged after the 6 or 7 years since its full estab­
lishment. Throughout that period, although profitability has not
been a major objective, the research area has been self-supporting
and generally profitable. Between 1969-72 the overall surplus
ranged from $1450 to $4613 and gross revenue from sales exceeded
$47,000 (1974). The profits have never been large but to achieve this
at all is some measure of commercial success.

The first impact of the research area was through berry fruits.
Strawberries were an obvious first crop after pasture and wheat
since weed control under plastic was relatively easy. The first
planting of strawberries, half an acre, was made in the 1967/68
season, along with the shelter-belt planting. Next year the major
block of strawberries, five acres, was established. It was now clear
that the arguments on profitability and scale of production that had
been extrapolated from a smaller, earlier area were viable. In fact,
this second planting of strawberries is still producing fruit and has
now achieved the remarkable record of near 100 tons of fruit per
acre.

The College gave guidance in production of strawberries for
processing and for export from Canterbury and more recently from
New Zealand to Australia and received grower recognition as a
consequence. The second major innovation in berry fruits was in
mechanical harvesting of first, blackcurrants and second, raspber­
rries and boysenberries. These advances were possible through the
work and development of the Agricultural Engineering Institute.

The horticultural research area also became of prime interest to
growers of processed crops. The emphasis was primarily on to-
matoes, asparagus and onions, although smaller areas of artichokes, courgettes, cucumbers and gherkins have been experimented with.

In basic research the horticulture unit has been less spectacular. For an investigation into frost prevention and analysis within the berry fruit area and orchards, local residents for a couple of years put up with the noise of a tractor-driven fan, and the effectiveness of shelter belts and artificial shelters has also been investigated.

Morrison, however, was justified in his contention (1976) that the combined objectives of commercial viability, a high level of husbandry, innovativeness in growing techniques, extension, and pure and applied research in management and science have all been satisfied.

In land transactions several staff were authorised to negotiate. Hudson relied on Bevin and Cooke for this, the latter becoming a valuation expert of national standing. Many assisted the Burns administration in farm management but it was fortunate that after Cooke retired, R. Frizzell* and D. K. Ower (p. 339) were available to look after the College interests in land deals.

Although the authorities were conscious of ill-founded criticism of the retention of the large farming property, they knew the holdings were basic to Lincoln operations. Even discounting the long 80-year period when students learned agricultural skills on college land, implements and livestock, when sometimes a rather low order of efficiency produced low annual profits, the fact was that numerous new techniques were initiated on the farms. Most of them were later taken up by progressive farmers. The college farms over the century, if not at any time “model”, were and continue to be, ones used for innovation, research and demonstration. The annual field days were maintained, one at Lincoln, the other at Ashley Dene. The latter attracted 500 people on average, the former a little fewer. This level of participation was not impressive in relation to the farmer population within reach but in aggregate over the years very considerable numbers had been influenced by them so that the over-all value of the field days was incalculable.

In his assessment of the role of the college farms, Stewart in 1976 said:

“We have to look elsewhere than in the farm accounts to find the justification for the college maintaining its high level of farming activity.

“The farms have to justify themselves on two counts: first, on

their contribution to teaching, research and extension; and second, even more difficult to define, their identification as the measure of the college’s involvement in the farming and horticultural industries.

“This latter point is an elusive one, much more so now that a significant proportion of the college staff, because of their specialised disciplines, have little or no contact with the farms. When the college was smaller, and its staff more strongly identified with current farming matters, it was not unusual for the whole staff room at morning tea-time to be discussing the effects of drought at Ashley Dene, or the wheat yields on the mixed farm. Now a circle of five or six in the corner of the staff room may be doing so, while other circles may be discussing the prospects of insulin extraction from the pancreas glands of sheep, or the pros and cons of beech forest exploitation on the West Coast, or the current gremlins in the computer terminal.

“But this trend reflects only a change in the scientific interests of the staff, it does not necessarily imply a decrease in the absolute importance of the farms. Perhaps this importance is best assessed in terms of what the alternative might be: for example, a college of agriculture in suburban Christchurch. Clearly the whole character of the college, its reality, its acceptability, and its standing would be greatly diminished. A near analogy would be a medical school without a hospital.”

Stewart concluded: “The college is now farming soil types ranging from heavy alluvial silt loams to steep, low-fertility hill country soils, including light plainsland under both dry and irrigated conditions. It has six stud sheep flocks, about 8,000 commercial sheep, a large dairy herd and a small beef herd, and is producing a wide variety of horticultural and agricultural crops. All this is a splendid underpinning of its teaching, research and extension activities, and a continuing challenge to the staff to use effectively and productively”.

Communication with the Public

In the extension or conveyance of expertise to the community, Lincoln had become only a moderate influence, for there was an increasing involvement in this among units of the M.A.F. and D.S.I.R. dissociated from the college. Extension involvement by staff in some degree was expected of all. But, although the universities in the main centres received a grant for extension studies through the Council for Adult Education, this did not apply to what was then the agricultural college, until recently included in the quinquennial grant. Extension was also mentioned as an area where
students might find later employment. Most of the men and women currently employed on farm extension activities had degrees in horticulture or agriculture or the V.F.M. diploma.

The high point in the miscellany of contact by the staff with the community appears to have occurred in the early 1960s on the evidence of records retained. Results in some respects have diminished in recent years, as the following approximate figures signify:

<table>
<thead>
<tr>
<th>Year</th>
<th>Casual Visitors</th>
<th>Visiting Groups</th>
<th>Regular Field Days</th>
<th>Special Short Courses*</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>1000</td>
<td>2500</td>
<td>820</td>
<td>1907</td>
<td>6227</td>
</tr>
<tr>
<td>1961</td>
<td>1000</td>
<td>2650</td>
<td>1100</td>
<td>1350</td>
<td>6100</td>
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<tr>
<td>1962</td>
<td>1100</td>
<td>2100</td>
<td>1475</td>
<td>1460</td>
<td>6135</td>
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<tr>
<td>1973</td>
<td>1000</td>
<td>1000</td>
<td>925</td>
<td>700</td>
<td>3625</td>
</tr>
<tr>
<td>1975</td>
<td>800</td>
<td>1793</td>
<td>820</td>
<td>1585</td>
<td>4998</td>
</tr>
</tbody>
</table>

The college had become highly esteemed as a place of interest for visitors. Eminent men were encouraged to include Lincoln in their New Zealand itinerary—emperors, princes, prime ministers, governors-general. Fellows of the Royal Society, international public servants, delegations from most of the components of the United Nations. They all came. Their contact was with the college as a whole or with staff members known for particular expertise. Their reception was deputed to the rural education unit. Good residential facilities had helped establish the college as an ideal venue for groups and conferences.

Fewer of the Lincoln staff, now increasingly committed to large numbers of incourse students, were willing or able to offer farmer-oriented courses. Many of the highly specialised staff were quite removed from agricultural interests. The service to the rural and general community however, had really just changed in emphasis. Extra-mural work now concentrated on workers in occupations related to primary production and activities were coordinated with agencies on a national basis.

One-day seminars were considered more productive than longer courses which were directed towards the needs of selected audiences. The contribution of some of the staff, notably in farm management and economics, to groups of workers from “Third

* The totals in short courses and visiting groups pertain to courses actually organised or conducted by college staff. In recent years approximately as many people again as those tabulated have been in residence at the college, occupied with courses or activities conducted by their own organisations. In 1975, 67 short course groups were in residence but of these only 20 were sponsored by college staff. There is no question, larger numbers come to Lincoln College and though working within their own programme arrangements, they provide benefit to the college and its functions.
A COMPREHENSIVE PUBLIC IMAGE

World” countries visiting New Zealand under sponsorship by United Nations aid were also of considerable significance.

In the organisation of courses, a member of the sponsoring department planned programmes in collaboration with the information officer, D. H. Crabb* who also attended to pre- and post-course administration.

Another trend perceptible in the extension involvement of staff was a relative decline in extra-mural lecturing engagements, notwithstanding the considerable increase in numbers of staff available. Some in the past had enjoyed a public image of being first-rate entertainers.

Fewer staff recently have attended branch meetings of Federated Farmers or other farmer type seminars—20 in 1971, half that number in 1975. In the same two years participation in conferences away from the campus was only 16 and 12. This depicts in part the changing identity of the staff. There were few counterparts in 1975 of the effective agricultural speakers of former years. The work of an increasing proportion of specialist staff did not attract invitations to extension activity. Some of them alternatively were assiduously producing research reports—approximately 50 in 1975—published in research journals and there left to lie, mostly bereft and unheralded among the estimated five million scientific and technological papers annually released in the world. In 1950 Lincoln College staff were keenly sought but 25 years later even the few remaining popular entertainers were being matched by other speakers from the M.A.F., D.S.I.R., commercial firms and other branches of the university.

In 1976 the Principal affirmed that high priority should henceforward be given to strengthening the college’s role in extension and continuing education

“As well as being a focus for work in teaching and practice of extension,” he said, “I can see the college becoming involved in increasing work in rural social problems, in rural development in New Zealand and in increasing participation in agricultural development overseas”.

As a consequence, he asked the Council to establish the Lincoln College Rural Development and Extension Centre. McSweeney was elevated to the position of director of the centre. He was provided with a supporting management committee; authorised to seek an additional member of staff and to arrange a conference. It was hoped of this organisation that it should advance the college

programme of extension and advisory work in the farming community, and its research into some of the country's most pressing problems.

The Overseas Image

In assessing the extra-mural service and stature of the college, the reputation being established internationally was significant. The reputation of Lincoln College, New Zealand, a University College of Agriculture and a centre of applied science, was first established overseas by student expatriates or foreign students returning to employment in their native land. Second, some of the academic staff from the mid 1950s had such success in their work that their advisory services were being steadily sought on international projects. Consider first, former students of the modern era, who were contributing to the tone and scale of the international image of the college during present times. Significant numbers had always elected to go overseas after graduation. The range of their successful placement was diverse, including Professors in American universities: N. P. Neal (B.Ag. '21), Wisconsin; M. D. Dawson (B.Agr.Sc. '50), W. S. McGuire (M.Agr.Sc. '53) Oregon State. In British universities: A. I. Iggo (M.Agr.Sc. '48), Edinburgh; J. W. B. Guise (V.F.M. '58), University New England. H. P. Schapper (V.F.M. '40) and H. J. Geddes (M.Agr.Sc. '30) held senior posts in the Universities of Western Australia and Sydney respectively. There were managers of huge enterprises, as A. A. Copland (M.Agr.Sc. '40) in the Beaverbrook organisation; florist by appointment to Her Majesty's Royal Palaces, F. A. Wilkinson (Dip.Hort. '56). A. A. Delley (V.F.M. '39) had become the first of many V.F.M. men who made careers in international aid programmes. After a start in Tasmania his work for F.A.O. had been in problem regions of Chile, Patagonia, Bolivia, Taiwan. From an Edinburgh base H. P. Donald (M.Agr.Sc. '31) directed the British Animal Breeding Research Organisation. In Canberra A.C.T. three Rhodes Scholars from the college (p. 327) occupied eminent positions to the advantage of Australia. It was contended that if a search were made, a Lincoln College graduate or diplomate would emerge in any part of the world. These examples have been selected as individuals who had acknowledged that in their eminent role they had been strengthened by Lincoln.

Of the foreigners T. I. Kawase (Dip.Agr. '32) had returned to Japan and, incidentally, founded a N.Z.-Japan Society and over many years extolled this country's virtues. He helped people like M. McSporran (V.F.M. '49) who was later the Asian representative of the N.Z. Meat Board, and gave considerable aid to New Zealand
visitors to Japan. Kawase made a nostalgic return visit to Lincoln in 1977. The MacLeays, father and son (W. G., Dip. '29 and H., Dip. '66) had identical experiences and returned to their Patagonia estancia, accompanied by New Zealand wives. In the case of the three Indians (Dip.Agr. '47) S. K. Mukerji became assistant director general of Indian Education, S. A. Malik, deputy director of information services, Patna, and G. S. Pandey, director of extension services, Bihar. Of the others from that country, S. C. Mandal was professor, agricultural University, Bihar; M. Tauheed (M.Agr.Sc. '49) director of agricultural education, Patna. In a letter (1973) to one of his former lecturers, Mukerji said: “I remember your appearance of 25 years ago but I expect you have lost all your teeth, since this seemed to be the most vulnerable part of the human anatomy in New Zealand. . . .” The name of the college was proclaimed in Africa by several, including R. Rwasa (Dip.Agr. '63) and J. Mende (Dip.Agr. '65) who were in charge of agricultural training centres in Tanzania. Among the white community of Rhodesia in 1976 were H. K. Ward (B.Agr.Sc. '52) in charge of the Matapos Station, Bulawayo, the largest agricultural research station of the country; J. O. Waymouth (Dip.Agr. '50) as manager of the Kintyre estate was producing huge areas of wheat and soya beans; D. A. Russell (B.Agr.Sc. '58) on the staff of the University in Salisbury. He had been preceded there for a period of seven years by R. W. M. Johnson who later joined the A.E.R.U. (p. 208).

When staff members, Coop, Langer, A. Adams and McSweeney were successively in Malaysia on other duties they were enthusiastically received by large numbers of Malaysians who assured them of the benefit of their Lincoln experience. The foundation professor of agriculture (1959), University of Malaysia, Kuala Lumpur, had been G. M. Davies (V.F.M. '39)—later also F.A.O. consultant in the Philippines and Taiwan. In 1973 the dean of the faculty was Zain Karim (M.Agr.Sc. '62). At that time other placements were: Ani-pen bin Ampong (M.Agr.Sc. '68) deputy director of agriculture, Sabah; B. Yapp (B.Agr.Sc. '68) principal, Agricultural Training School, Kota Belub; Ani Arope (B.Agr.Sc. '59) director, Rubber Research Institute; Ababaka Mahmud (B.Agr.Sc. '61) superintendent agricultural education; Loh Charm Lum (M.Hort.Sc. '64) director, crop production, Dept. of Agriculture; Ch'ng How Soo (B.Agr.Sc. '61) Deputy-Director of Agriculture, Selangor; Chee Sek Pan (B.Agr.Sc. '57) director of development, Penang Corporation; X. Nathan (M.Agr.Sc. '64) superintendent Rice Research Stn. Penang; Ahmad bin Baba (M.Agr.Sc. '62) Director of Agriculture, Penang. In Singapore Woo Kok Kuan (B.Agr.Sc. '60) was prominent in a commercial enterprise.
In the South Pacific, careers in the former Colonial Service had been taken up for varying periods in the Solomons by J. T. Hall (B.Agr.Sc. ’51) deputy-director of agriculture, W. I. Laing (M.Agr.Sc. ’46), C. R. Plummer (B.Agr.Sc. ’59). In New Guinea, the Englishman, M. Pirkis (Dip.Agr. ’57) after a period in Uganda, was supervising an animal breeding programme. In Sri Lanka M. E. Perera (B.Agr.Sc. ’56) was assistant-director of agriculture and animal husbandry. In Fiji, Joshua D. V. Cavalevu (B.Agr.Sc. ’63), remembered for the grace of his figure on the athletic field, had returned to serve his emerging nation as secretary of one of his Government’s ministries. Several had made careers in Canada, including C. R. Stanton (B.Agr.Sc. ’44) and R. McCarlie (Dip.Agr. ’48) engaged on soil conservation and later senior administration; several Americans like T. C. Walz (V.F.M. ’52) had returned to forms of agri-business; in central America, M. Nelson (M.Agr.Sc. ’53) was programme adviser to the Ford Foundation in Mexico. In the more traditionally established centres of overseas contacts with New Zealand—the U.K. and Australia—scores of graduates and diplomates had become men of mark in farming, commerce and management. An estimated 500 students in 1975 were at work throughout the world, the highest concentrations in Australia and Britain.

Another pattern was revealed by people who vacated positions of security in New Zealand and gave their services in the cause of aid or development, sponsored by religious or welfare agencies. Under the auspices of the N.Z. Anglican Church Missionary Society, I. D. Foster (B.Agr.Sc. ’62), N. McNabb (Dip.Agr. ’60), K. Moore (B.Agr.Sc. ’65) established and managed the Buhemba Social service and rural training centre in the Musoma region, Tanzania. J. A. Porteous (Dip.Agr. ’41) after dairy farming for 30 years near Pukekohe, leased his property and went to Maharashtra, India, to develop a wilderness into a dairy farm as part of a Moral Rearmament Scheme. His work was voluntary and he had to support himself and family; after his return to New Zealand the overseas work was continued by his son. Also serving in India (for six years) were J. M. Hayman (M.Agr.Sc. ’61) and his wife (nee Margaret McKay, formerly Plant Science Department) who developed a rural training project under the auspices of the Madras Christian College (Action for Agricultural Research) and C.O.R.S.O. and then had a Colombo Plan appointment in Indonesia. Another farmer who relinquished his property temporarily through a call to serve, K. J. Coe (Dip.Agr. ’65, B.Agr.Com. ’76), left his Irwell farm during three periods spent in Thailand (where he married a Thai girl) as a Volunteer Service Abroad adviser in matters of
village agriculture. Also working in Thailand were Professor M. D. Dawson though then supported by his Oregon State University and the Ford Foundation, and D. Crump (B.Agr.Sc. '63) on a New Zealand Government assignment. The latter then became Agriculture attache, N.Z. High Commission, London, in succession to a V.F.M. man, G. Batten. Other instances of recent graduates who worked for little material gain within V.S.A. plans were D. E. K. Miller (M.Agr.Sc. '70) at Khonkaen, N.E. Thailand and K. A. McIntosh (B.Agr.Sc. '70) on a cattle development unit in Sabah, Malaysia.

Within the New Zealand Government's aid programme under the Colombo Plan and Ministry of Foreign Affairs in recent years, members of the New Zealand Ministry of Agriculture were variously employed: N. A. Cullen (B.Agr.Sc. '50) on pasture development in South Korea later Peru also with B. Koller (B.Agr.Sc. '65) while I. L. Elliott (B.Agr.Sc. '34) had an assignment in Iraq. J. M. Lockhart R.N.Z.V.R. war veteran (B.Agr.Sc. '49) was another M.A.F. officer whose competence in advisory work resulted in his secondment on agricultural appraisal work successively in Hokkaido, Japan ('65), Sri Lanka ('73), India ('74). There had been several other M.A.F. men in aid programmes in South Korea, including G. A. Holmes (B.Agr. '24), L. J. Hill (B.Agr.Sc. '64) and C. Kingsbury (V.F.M. '70), the latter however with the A.N.Z.D.E.C. organisation (see below). Also under U.N.D.P. planning in South Korea were D. A. Kidd (B.Agr.Sc. '60) and members of the college staff, G. F. Tate in 1976 and A. I. Bilbrough 1977. C. C. McLeod (B.Agr.Sc. '51) worked on grassland and cattle production in Thailand, R. S. Scott (B.Agr.Sc. '54) in Argentina and Uruguay. A. V. Allo (B.Agr.Sc. '33) was seconded by the Ministry to the Food & Technology Centre, Taiwan, and P. B. Newell (B.Agr.Sci. '54) to Tonga. H. C. Smith (M.Agr.Sc. '49) was freed on several occasions from his directorship of the Crop Research Division, D.S.I.R. to be consultant director in developing a horticulture research centre in Singapore. From the Department of Education E. L. Hardy (B.Agr.Sc. '49) went to Sabah to assist in the establishment of an agricultural training school giving guidance to the principal-elect, another old student, Aripin bin Ampong (B.Agr.Sc. '68). I. C. G. Kerr (B.Agr.Sc. '61) spent two years in the faculty of agriculture, University of North Sumatra, Medan and subsequently in the University of Malaysia involved in the establishment of demonstration farms. In 1971 he was a mission leader on a U.N.D.P. project in Iraq. Within the aegis of United Nations or World Bank sponsorship there were several former students, doing credit to their ability
and to the value of the preliminary training given to them at the college. M. R. Kennedy (B.Agr.Sc. '61) in charge of a water resource development, under U.N.I.C.E.F. based in Delhi, India, succeeded in bringing 6000 wells into action and providing the benefits of clean water for the first time to 1½ m village people. J. Bruce Brown (Dip.Agr. '27) after a career in the New Zealand State Service, engaged upon tours of further service in countries where his specialist experience was eagerly utilised. Bruce Brown (former Lands Department officer, then Valuer General) went to Samoa and British Honduras to organise land taxation and valuation systems; also as a United Nations adviser in the Caribbean and Latin America. As Chairman of CORSO he was also able to make assessments of relief services in various countries of the Pacific basin. Other former students accepted similar assignments after retirement.

Serving under U.N.D.P., F.A.O. World Bank plans was A. H. Flay former staff member who upon retirement from the college, worked as agricultural adviser for five years in Uruguay, largely concerned with development of forage legumes. Central America had become the base of several under F.A.O. programming, including J. E. Sutherland (V.F.M. '54), G. P. Day (V.F.M. '50) in El Salvador and Chile, and D. J. Masterton (V.F.M. '54). From this field service the two last named progressed to the highest levels of F.A.O. administration at the Rome headquarters. In North Africa, J. K. McKenzie (B.Agr.Sc. '55) (with his wife, former staff member nee Dorothy Gibbs) served F.A.O. in work on forage legumes before moving to a wider Middle East involvement.

One of the most impressive achievements of all old students was that of V. A. Ashworth (V.F.M. '55). In 1960 he had established a farm adviser consultancy based in Morrinsville. As Ashworth and Associates expanded operations, the principal had been assisted by other men with a Lincoln training—N. A. Clarke, D. M. Tate, J. W. Bowis, G. W. Tizard, R. G. Hollis, R. C. Beamish, D. M. Smith, B. R. Hedley, and D. M. O’Connor. Ashworth had become an outstanding advocate of agricultural management technique and had attracted notice overseas to such an extent that within a few years he was an authority on the New Zealand forms of farm management, an international commodity. Overseas projects had been undertaken by the firm (up to 1976) in Western Samoa, two in Thailand, Pakistan, four in Afghanistan, Greece, Korea, Trinidad and Tobago, Yemen Arab Republic, Somalia, three in Tanzania, two in the Solomon Islands, Sri Lanka, Uruguay. Many of the projects were contract missions won against
international competitive bidding. The organisation was also frequently employed by the World Bank, U.N.D.P., F.A.O., Asia Development Bank. The stature of Ashwoth not surprisingly resulted in his appointment in 1976 to a senior advisory directorship in the World Bank, initially based in Washington D.C. but with responsibility for developments in South East Europe and the Middle East.

In agricultural consultancy, another unit had become successful, A.N.Z.D.E.C., or Asian New Zealand Development Consultants Ltd. As a company it was concerned with contracts to service agricultural and forestry projects overseas and many Lincoln-trained men had been employed by the firm as part-time consultants. The operations manager of A.N.Z.D.E.C. until 1975 was V. Ingham (V.F.M. '60) whose tragic illness and death were widely reported. While working on an A.N.Z.D.E.C. project in Gambia he contracted the rabies disease from a dog bite and was flown to U.K. by a Royal Air Force mercy flight; but he died. The year before, he had supervised arrangements at the college for the instruction of a group of Uruguayan extension officers, another A.N.Z.D.E.C. and F.A.O. project. D. W. Ives (M.Agr.Sc. '70) who had worked on aid projects in Malaysia, Indonesia, the Middle East and the South Pacific became general manager of the company in 1976. One of his first major endeavours was to negotiate as part of a New Zealand consortium, including I. Donald (V.F.M. '59) assistant general manager Wrightson-N.M.A. (one of New Zealand's largest commercial organisations) a prospective two hundred million dollar contract in the Middle East.

Finally in regard to the international connection, the degree of participation of the academic staff was also increasingly effective. Refresher leave had been readily conceded, few applications being declined by the Council, and on average three or four were on overseas leave each year for periods ranging from three to twelve months. Salaries were paid in full during absence. The additional expenditure on overseas travel of staff, including short-term conference leave, had been $17,000, $20,000, $21,000 (1972-3-4). Refresher and conference leave was of inestimable benefit to the recipients and some distinctive contributions were made by senior staff in the programmes of international congresses associated with soils, grasslands, microbiology and animal science, though the recollections of some were more conspicuously linked with Royal garden parties at Buckingham Palace or rugby at Twickenham or in Johannesburg. Every staff member on leave was however an ambassador-at-large in the interest of the college and there were many consequential benefits in the scientific and academic links
THE SEED THEY SOWED

thus made.

Notwithstanding earlier comment on refresher leave, there were instances of staff members who left the well-defined North America-Europe jet travel route and spent their leave in a new habitat. G. W. Kitson, with the help of a Churchill Fellowship, and R. G. Pilling, both under McCarthy’s guidance in agriculture economics, went separately to Japan in 1971, and Kitson again in 1976, making studies of the market for New Zealand meat. McArthur cast aside home comfort, including his yacht, and left in 1975 for a two-year assignment under the Ministry of Foreign Affairs, as professor of agriculture at the University of Botswana, Lesotho and Swaziland in southern Africa. About the same period other aid service in Africa had been given by A. G. Barwell (V.F.M. ’51) who left his Dunsandel farm and management consultancy in other care, while he worked for U.N.D.P. in Tanzania, advising on utilisation of a huge area of uplands. J. G. Hughes, management officer, T.G.M.L.I. also participated in a similar World Bank–F.A.O. mission in Lesotho, South-East Africa but sadly lost his life in a traffic accident soon after returning to New Zealand. While on refresher leave in Europe in 1973, McSweeney was one of a two-man team to report to U.N.E.S.C.O./U.N.D.P. on the establishment of a college of technology, Kwarar State, Nigeria. Other work in Africa was undertaken by J. B. Dent, professor of Farm Management, who in 1973 and 1974 visited Tanzania by invitation to advise the University of Dar-Es-Salaam on some research projects and to act as an external examiner. The microbiologist, J. L. Sumner, had an assignment funded by the U.K. Government in 1976 as visiting professor of food hygiene, University of the Aegean, Izmir, Turkey. In 1976 J. G. White undertook an F.A.O.–A.N.Z.D.E.C. project in Argentina involving guidance on lucerne maintenance and thrift. B. J. P. Ryde had several years involvement in developing farm advisory services in Fiji and Tonga. There appeared to be few limits to the service that Lincoln men could fulfil.

Of the soil science group, T. E. Ludecke was engaged in 1975 by the Ministry of Foreign Affairs to develop a soils-agronomy programme in Tanzania, with successive follow-up visits to be arranged. A. F. R. Adams in the same year gave instruction to agricultural officers assembled at Kitale, Kenya, from several East African countries, under the auspices of F.A.O. Previously he had been a Colombo Plan consultant in the University of Malaya, guiding soil science teaching. T. W. Walker had no need to nominate his talents or willingness to participate; he was particularly sought as a contributor-advisor. So also was G. T. Ward, professor of agricultural engineering. R. H. M. Langer, professor of plant
science, long serving councillor of the Australian and New Zealand Association for the Advancement of Science, had enhanced the standing of the college in Australian assemblies of scientists. In 1977, he visited Guyana on behalf of the N.Z. Ministry of Foreign Affairs to investigate, then report on establishment of a faculty of agriculture. Later he was on a mission to Pakistan.

While K. F. O'Connor was a member of the D.S.I.R. he had been seconded under Colombo Plan to India in 1961 and in 1964/65 was an F.A.O. adviser in Chile and Argentina. After he became professor of range management and director of the T.G.M.L.I. (1969) he retained membership of the N.Z. national commission for U.N.E.S.C.O. and participated in the 1972 general assembly of the organisation in Paris and in Nairobi 1976. As a Roman Catholic layman he served on his church’s national commission for justice and peace.

The services of some of the agricultural engineers were also sought, notably T. D. Heiler who, in 1971, was with Stewart on the beef cattle project in the eastern islands of Indonesia. He then was in Malaysia (1973-4) for 15 months, accompanied by V. J. Bidwell endeavouring to bring to fruition a drainage and irrigation project within a contract to the Malyasian government by the ENEX Co. (Engineering Export Association of N.Z.). His stature as an expert on hydrology resulted in a commission by another firm of consultants to conduct in early 1976 a water resources appraisal in Egypt.

C. B. Judd was also one of the team on the 1974 follow-up of Coop’s initial Sumatra beef cattle project. He then went to Iraq with an A.N.Z.D.E.C. irrigation mission, followed in 1976 by visits to Malaysia to make a hydrological study of the Kalentan river basin (E.N.E.X. of N.Z.). Under Colombo Plan aid to Fiji, M. E. Webb made two visits in 1975 to provide engineering assistance relating to fisheries development.

Of the horticulturists, T. M. Morrison conducted an appraisal for the Ministry of Foreign Affairs on the possibilities of establishing a faculty of horticulture in the University Pertanian Malaysia. He had also become interested in the International Agricultural Exchange Association which fosters reciprocal exchanges of farm youth. He represented the college, which acts as host in New Zealand to overseas young farmers under I.A.E.A. sponsorship, at the 1976 meeting of the association in Denmark, and was followed there a year later by McSweeney.

G. F. Thiele had such standing in horticulture that he was invited to conduct seminars for advisory officers and growers, first under the auspices of the South Australia Department of Agriculture and then at the Orange Agricultural College, N.S.W.
CHAPTER 17

Portrayal of the Modern Student

Since the demise of Canterbury Agricultural College the changes in the composition, spirit and tone of the Lincoln student community have been such that few vestiges of the forms and traditions of the former agricultural college remain. The students of Lincoln College continued to progress and evolve primarily within the influences of the academic processes initiated by the staff in the semi-rural habitat. In general this continued to be a more salubrious environment than that of students in the larger city-based universities.

In 1962, 350 students, almost 80 per cent living on campus, were distributed among six diploma or degree courses. In the year in which this manuscript closes, on the eve of the centennial, 1344, a little under 50 per cent of whom were living on campus in halls and flats, were distributed in courses as follows:—10 bachelor degree courses, three masterate, a Ph.D., five post-graduate and eight undergraduate diploma and two certificate courses—a total of 29 courses.

There had been a transformation in the financial requirements of students. For 57 years (until the 1937 School of Agriculture Act), a consolidated fee with only slight variations had been levied to cover board, residence, laundry and tuition fees. In the 1930s, payment of 50 guineas covered the three-term year, common to all students, degree or diploma and regardless of the fact that the latter were in residence for a longer period and were required to provide the farm’s labour force. A concession to diploma students at the end of their first year was return travel to their homes, “second-class rail, first-class inter-island steamer”. Against this cost, students with university bursaries (higher school certificate) were provided with £20, claimed by the college as tuition fees. An agricultural bursar (Education Department) had in addition a boarding allowance of £30 but was under bond to the department to serve a minimum of three years’ teaching. Very few students had any choice other than
to struggle to find the requisite fee or the unpaid balance after using the small bursary. In 1934 as an economy measure occasioned by the depression bursaries were halved to the level of £10. By 1952, when board, under direction of the council of the School of Agriculture, was separately apportioned (£2-16-0 a week for a 36-week (degree) year) from academic fees (£32), the total cost to a first-year degree student was £138. Against this, even the students best provided for, university junior (£125) or national scholars (£110), agriculture (£100) or ordinary bursars (£62) still had a balance to find. By 1966, with board at £189, consolidated tuition fee at £90, contingencies at £10, total £289, the fees and allowances bursary (H.S.C.) provided 90 per cent of the consolidated fee, a £40 cash allowance and a £125 boarding allowance, leaving the academically best prepared students still about £40 short of full requirements. In these periods there were also additional charges such as Students’ Association fee and travelling (course work) fees. By this time a steady annual increase in charges was being imposed on the recommendation of the Halls Council, which had to budget to break even in the halls. In 1965 the boarding charge of £6 a week was distributed as percentages:—provisions 36, staff wages 32, heat, light, power 17, repairs and maintenance 7, depreciation 4, sundry administration 4. A student revolt arose in 1965 because of the steadily mounting charges, including a new item, a buildings capital levy, (a contribution by all students to aid the college fund for new buildings, on which a subsidy was available*). Also inadequate were the heating installations that consumed such a high proportion of the boarding fees. A vote of no-confidence in the administration was passed at a special meeting of the Students’ Association in 1965. There were several other irritations, including opposition to the Council’s decision to approve in principle a proposal that a one-year accommodation priority should be introduced in favour of donors of gifts of £300 or more for extended hostel facilities. The student president (D. Armstrong) said: “We are concerned that Lincoln College should appear to be joining the movement afoot in New Zealand whereby the rich person can buy a privilege, which should be available to all on an equal basis... Where selection is necessary it should be on qualifications and academic standing, and not on the size of a person’s financial backing”. The protests died down as the council’s planning began

* This levy which has been maintained subsequently was initiated by the students’ executive but their electorate at the time criticised the administration as being inefficient in student accommodation and amenities. The benefits to be derived from the levy became manifest, however, and within a few years these funds helped to provide facilities that would otherwise have been deferred. In 1976 the student president was able to announce that $130,000 had been allocated from reserves towards a recreation centre.
to emerge in the form of the halls of residence appeal but the point being established is that a period of student unrest had developed, occasioned by the difficulties in balancing costs against bursaries. A high proportion of diploma students who had no bursaries at all just had to pay up regardless, and did so apparently without grizzling.

By 1976 for a very large proportion of the New Zealand student body, the struggle was largely removed by the introduction of a standard tertiary bursary. There was little doubt that student pressure had reminded the major political parties that the reduced voting age to 18 years had brought into the 1975 election large numbers of voters whose cry was "what about bursaries?" Both degree and diploma students benefited by a widening of the pre-entry education qualifications ranging from the time-honoured higher school certificate among degree students, to eligibility now conceded to diploma entrants who had attained four school certificate passes. Though in 1976 the consolidated fee at $240 (first year degree) and board at $24/week amounted to $864, 95 per cent of the student roll (1200 approx.) had bursaries that paid the fee, and 80 per cent also had an allowance that paid their board at the college or at a reduced level if they lived off campus. There was a category of contingency fees—Students' Association $25 and in-course travelling, but the latter had become subsidised by the Council. This is only a broad outline, as there were scales of the consolidated fee in relation to the various courses and stages, their duration and examinations. A general formula of financial support applied also in graduate work, Ph.D. candidates being eligible for University Grants Committee grants at the level of $2600 a year, tax free. The stage had been reached when very few New Zealand-born and educated students were not getting bursary support; most indeed had all they needed, with a small margin of cash in hand. By 1977, however, it was claimed that the worsening state of inflation had again created a gap between the students' costs and the bursaries.

The meat inspectors had no problem. They were on State Services salary according to grade, plus a living-away allowance. In addition, the costs of full board and fees, plus travel to lectures were met by the Meat Division. Students of the certificate in wool (12 weeks) received no bursary assistance though some of them were sponsored and supported by commercial employers.

By 1976 most students had come to rely on payments of the Welfare State. The only New Zealand degree students not getting tertiary bursary support were those who might have made an abortive attempt at university work, or students straight from school with a university entrance credit (not H.S.C.) only. They received fees only. The penalty for failure certainly was higher, for
in such event the tertiary bursary was lost.

Notwithstanding the general level of bursary support, there was no shortage of applicants for 50 in-course scholarships. They ranged in value from $80 to $600. Some had provincial or regional stipulations or were restricted to specific courses. The old students scholarship ($250), had supported each year for 40 years, a member of a Young Farmers’ Club entering the diploma of agriculture. When students became eligible for the tertiary bursary in 1976, the Old Students’ Association decided to review the use of their investment fund. In 1976 the N.Z. University Students’ Association was clamouring for cost-of-living adjustments to be added to bursaries.

The control of students’ qualifying examinations has been tightened. In 1935 Alexander, then director, representing University of New Zealand examiners, ushered the sole master’s degree candidate into the Memorial Hall and said: “Here’s your exam paper: I’m going to the Christchurch Show, so I will lock the door but the matron will let you out at 12 o’clock”. When student numbers were small in the early post-war years, Miss Lilburne, matron used to bring morning or afternoon teas on a trolley to afford relief to students sitting their examinations. Lady Burns liked getting to know students and between 1952-60 invited seniors about to leave, to dine at the Lodge. As numbers expanded these parties had to be confined to supper groups, then of necessity, only to executive groups and concert organisers. Lady Burns became the chief examinations supervisor, with the aid of several other women all working however, under the direction of the examinations officer, H. Chaplin.

The number of students and courses developed steadily as revealed in Chaplin’s later reports to the examinations board. Examination periods (up to 2 weeks) were scheduled as for the February “Specials” (resits) and the July and November semesters. In 1975 377 separate diploma and degree examination papers were set, and students in that year presented 4493 degree and 3480 diploma scripts, a total of 7973. Five different venues had to be used. The large Gillespie Hall, the main centre, was sometimes occupied by 250 students distributed according to a plan among 20 to 25 different examination papers. The services of 12 women supervisors were required. The former informality was no longer possible. Examination rules now stated “candidates shall wear suitable footwear (socks with shoes or sandals). Bare feet, gumboots or heavy farm boots are not permitted”.

*Foreign students*

Canterbury Agricultural College had attracted students from Bri-
tain, Australia, India, Chile, Fiji, Japan, Malaysia and Burma in really significant numbers relative to the then total small enrolment. Most of them completed the diploma of agriculture before going home. The college was host to them under the Colombo Plan and SCAAP (Special Commonwealth Aid to Africa Programme). Pacific Islands students in the horticultural diploma course were under sponsorship of the Island Education branch, N.Z. Department of Education. The college community began to derive benefit from the presence of these people, as well as from the many independently supported students from overseas.

New Zealand could now assist less developed nations in agricultural education. Since 1950, overseas students had arrived in increasing numbers and since 1972 between 70 and 100 had been part of the community, most studying for the B.Agr.Sc. degree.

McSweeney had succeeded McCaskill as overseas student counsellor and helped them for 15 years.* McSweeney said that 80 per cent of the overseas students (non-European) who had graduated or received college diplomas had performed above the national average for entrants to New Zealand universities. He also outlined the problems and challenges presented when a minority group from alien cultures came into a relatively inflexible institution like Lincoln College. There were language difficulties, strange food, a harsh (to them) climate and "problems also arise from what seems to many overseas students to be the New Zealand student's lack of concern for religion and affairs of the spirit, his attachment to material things and his belief that New Zealand is God's own country". The rigid practical work requirements caused anguish to many Asians, unused to New Zealand farm work and rural life. The traditional Lincoln courses were geared to temperate zone agriculture with at first no concession to students destined to return to work in tropical agriculture. Some adjustments were made later, especially in the final year of bachelor's degrees, to provide alternatives for those students who, after departure, would be unlikely to see a sheep again. McSweeney concluded "in many ways they have made the college conform far more to the image of a university. It has become an international community—colourful, provocative, stimulating. I sometimes think the greatest benefit has come to the New Zealand rural student who, for a year or two, has had the chance to live and work in a miniature United Nations. His life and that of the New Zealand community to which he returns will be the richer for this experience. It may be said further, apart from all

* He retired from this service in 1976 in favour of Dr. K. M. Goh, who under Colombo Plan support from Malaysia completed a M.Agr.Sc. degree at Massey before appointment in 1971 to a soil science lectureship at Lincoln.
other considerations, while the South-East Asians were at Lincoln they played top class badminton, lost money but gained mechanical skills running old cars, and by dint of effort over many years changed the culinary habits of the refectory and many hostesses. In with the fried rice, out with roast mutton!” Sir Malcolm Burns said that they had made a very real contribution by introducing something of their cultures to their fellow students and had a very sincere and businesslike approach to university studies. Their association with New Zealand students had introduced many overseas students to the dignity of manual labour and the fact that the rural worker was a very important member of the community.

A peak level was reached in 1976 with 107 overseas students in residence from 20 countries (only three of European stock). Forty-five of them came from Malaysia, 15 from Australia. The presence of Australians, generally 15 to 20 annually, was interesting in view of the opportunities they had by-passed among the agricultural colleges and faculties in Australia. An Australian, R. Bucknall was student president in 1976, as had been M. Wilson in 1954 and D. B. Lawson in 1964. At the graduate level (on Ph.D. studies) a succession of people came under the Commonwealth Plan—J. B. Robinson (Canada), T. D. Steinke (South Africa), J. D. H. Williams, K. Syers, J. W. Ashby (U.K.), M. Hanif (Pakistan), Abdul Aziz (Malaysia), Nabi Md. Nur (Bangladesh). More within this scheme worked on master’s degrees. Since 1946 when four Indians entered the diploma of agriculture course, approximately 350 overseas students (excluding Britons, Americans, Australians) completed degrees or diplomas, sponsored as follows:—Colombo Plan 120, Federal or State Malaysia 39, SCAAP 24, UNESCO 20, Islands Education 18, Commonwealth 14, FAO 4, privately 160. Student exchange arrangements were negotiated between the college and Oregon State University and St. Luis Obispo College of Agriculture (California), five students from each being on degree programmes in 1975. Reciprocity was arranged for Lincoln students at Oregon State University where Lincoln was well known through two old students, M. D. Dawson and W. S. McGuire, being members of the faculty of agriculture. Professor Walker had also occupied an exchange appointment there and several other Lincoln staff spent shorter periods on the Corvallis campus. There were difficulties in arranging reciprocity at Oregon State for Lincoln students, and the future of this plan is not yet assured.

The International Club within the Students’ Association has prospered for 20 years, bringing together overseas and New Zealand students in social relationship. The highlight of the Club programme each year was “International Night”. On this occasion
students, particularly those from South-East Asia supervised the preparation of their national foods served to the 300 to 400 guests, after which they demonstrated aspects of their culture in dress or other forms of expressive art. Many staff supported these outstanding functions, though participation by New Zealand students was not very enthusiastic. Cultural items were not always ethnic. Many will remember the rendering at the 1959 function of purported excerpts of Swan Lake ballet by a duo, a massive New Zealander, N. G. Gow (B.Agr.Sc. '61) and a diminutive Chinese-Malaysian, Woo Kok Kwan. The host for the evening was always a credit to his own nation, as for example Alfred Jabu (B.Agr.Sc. '65), deputy Prime Minister Sarawak in 1976.

The impact of women
There had been a paucity of women amongst instructional staff. Mrs. Tabor, a legendary figure, had supervised dairy instruction for 16 years from 1889 but 30 years then elapsed before another woman was appointed dairy instructor, Miss Robertshaw (1933-5). She tried to start herd-testing and shook the morale of the student farmworkers of the time by requiring them to wear white overalls and a cap. She was just 30 years in advance of enforced hygienic aids and standards. Alison Kyle, B.V.Sc., was a veterinary science lecturer (1951-7), and several competent Englishwomen had successive appointments in rural education, and women like Miss J. Burrell and Miss M. McKay were generally appointed as demonstrators in some of the science departments. A further interval occurred until J. L. Rogers joined agricultural economics in 1972, when his wife Mrs. J. R. Rogers concurrently but independently was appointed to a lectureship.

No woman in nearly 100 years has yet served on the governing board or council though there could be a "first" soon through elections within the graduates and diploma holders electorate.

The first two women students, Misses E. G. Thorp and D. Walker, came with McMeekan to complete masterate degree studies in 1944 based on earlier work at Massey. In the following year Miss M. Harrow was the lonely first woman entrant in the horticulture diploma. There were three more women in the course in the following year, after which a few women students, particularly in this course, were in residence, under the wing of the matron. Mary Fairmaid, Greymouth (B.Agr.Sc. '48) was the first woman to graduate through a full degree course. She was in the same class as L. T. Evans (Rhodes Scholar 1951). From 1960 onwards women students at first few, were always among the degree course intake and sometimes in the large diploma of agricul-
ture class. These first women students must have spoken kindly of their life at Lincoln. The word on agriculture and horticulture went round the schools, and by the 1970s women students were in virtually all degree and diploma courses, 121 of them in 1975 and 167 in 1976 (13 per cent of the student population).

The girls established their sports teams, one of the first being the 1964 indoor basketball team comprising Gill Kellock, Elaine Cross, Jane Goldsborough, Marilyn Wright and Sri Susilaningsih (Indonesia). Gill Kellock graduated B.Agr.Sc., later Ph.D. married a fellow student J. McLaren (Dip.Hort. ’65) but continued her professional employment, eventually becoming the second woman Ph.D. graduate (in entomology 1976) from the College. Elaine Cross after graduating B.Agr.Sc., married A. H. Nordmeyer (M.Agr.Sc. ’67) then settled into domestic life. Marriage among students occurred frequently after the first horticulture course match (D. W. McCallum and Mary Scott (’48) and an international one between Jamelick Mugambi (Kenya) and Sue Matthews, both masterate students (1973).

The 1965 ski team included Jane Wynn-Williams, Joan Flower, Fiona Logan and Tricia Shiel. By 1976 there were two women’s hockey teams. The secretary of the Students’ Association in 1970 was Miriam Palmer (B.Hort.Sc. ’71) and Margaret Evans (B.Agr.Sc. (Hons), Ph.D. ’77) was executive member responsible for student travel and orientation. She was destined for a brilliant career as a scientist, working with C. H. G. Irvine, veterinary department, in the intricate field of endocrinology, and travelling to Cambridge University in 1974 to present a report on her work at an international symposium on equine reproduction. Judith Phillips who had represented New Zealand in hockey and tennis was among the first women who, in 1976 were included in Rhodes Scholarship nominations.

The women entering the college gave balance, dignity and charm to the student body. They were capable girls. Those following the degree programmes were required, as were the men, to produce evidence of completion of the statutory period of practical work, both pre-entry and in-course. Lincoln, having evolved without women-dominated faculties such as home economics, had much to gain from the interest of women in a career based upon qualifications from the agricultural courses. There were 199 women students in 1977; they comprised 30 per cent of the stage I B.Agr.Sc. enrolment and 40 per cent of the diploma in horticulture.

Organisation of residential Halls
After the end of the wardenship (p. 170), a Master of Halls, Brian
Douglass* was appointed to have responsibility for student welfare, aided by residential tutors and a halls manager. He was also chairman of the Hall Council which since its establishment in 1953 had responsibilities but restricted powers. Its efforts were at times negated by the Registrar or Principal who had to assess the needs of halls of residence in the wider college context.

Douglass was a successful master of halls for 14 years. He retired at the beginning of 1976 and was replaced by Dr. R. G. Gabb of the veterinary department, thus retaining the idea that the master should be a senior academic who could talk to students as a course lecturer. He had to adapt to changing situations. In 1962, when 80 per cent of the students were in residence on campus, he had influence on nearly the whole college. Not so in 1966, when higher enrolments before additional halls and flats were ready resulted in only about 55 per cent of students being on campus and in 1967, less than half the students “lived in”. He estimated that about 70 per cent of students actually wanted or preferred to live on campus, a level which it has not yet been possible to restore.

There were stirring times when the Hall Council and Brian Douglass had the greater proportion of students within their ambit. The “open meetings” when most of the student body attended to air grievances and “take the micky out of the administration” were a delight, at least to participants not in the firing line. They welded the community. Douglass’ “dining-in nights” were introduced when as many as possible of the College Council, students and staff were invited to dress with a measure of formality and dine, with table service provided and liquor dispensed at table followed by an address by an eminent personality. Payment for the dinner tended to weaken support, and the plan lapsed after several years.

Douglass said that when he began in 1962 he was horrified at the wide-ranging rules and regulations and said he was not disposed to run a boarding-school. This was the beginning of so-called permissiveness in varied forms including a decision incredible to the now old men of earlier generations, to install in 1974 a contraceptive-vending machine in the Union precincts.

There was wisdom in Douglass’s comment that in his experience regulations and patrol are not effective in controlling anti-social people but social attitudes are. He caused college regulations to be recast for the modern order of men and women in a residential hall. The Professorial Board redefined its disciplinary requirements such

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as forbidding gambling for stakes and prohibiting students bringing liquor on to the premises. Liquor became available under supervision, served in the Union. Some disciplinary powers had also been delegated to the Students' Association, which was encouraged "to discipline any member, club or society for conduct subversive of discipline, or which brings discredit on the university or the students thereof".

When the completion of three new halls and the Union complex was assured the College Council in 1971 commissioned a firm of management consultants (Barr, Burgess and Stewart) to make an assessment and recommendations on the over-all efficiency of operations in the halls and refectory. A number of the consultants' recommendations were implemented, most significantly the appointment of a Union manager, V. J. I. Vaney, and the engagement of Nationwide Food Services (N.Z.) Ltd as managing catering consultants to the union.

The union became a catering centre of major significance. Occupancy and use of facilities were typified in the attendance of more than 4000 people in the halls of residence during the May, 1976, vacation and over 12,000 meals were provided in the Refectory during these two weeks. Room occupancy was 100 per cent for 11 of the 14 nights of the vacation. Vaney instituted a plan in which authority was delegated to the union manager to supervise the dispensing of liquor to outside hirers and for approved student functions. The pre-paid ticket system was used under the scrutiny of the manager, who could cut off supplies if so desired. He appointed part-time stewards-barmen (senior students), required them to conform to a dress specification, not to drink during a function, and to exercise control designed to ensure complete propriety. Within this system there were regular visits by police officers. It was aimed to discourage students from drinking off campus for in keeping with a nation-wide trend there was an occurrence of tragic and fatal vehicle accidents associated with excessive consumption of alcohol by students.

The Student Association

The Association was now an incorporated society and membership was compulsory "for all those persons registered as students at the college". The fee $27 (1976) was set by the students and collected by

the Registry, as agreed, together with other prescribed term (semester) payments, including a building-fund levy of 36c per dollar of the association fee. Staff registered for higher degrees as students were associates and membership was not required for persons attending courses of seven weeks or less. In addition to the president, secretary and treasurer, the executive of the association comprised officers with defined responsibility—sports, education welfare, cultural affairs, international affairs. The senior officers’ honoraria (1976) from the association funds were:—president $1300 and a residence concession, treasurer $900, secretary $250, vice-president $100. All other executive members received a “Scholarship” of $1 per executive meeting attended. An administration secretary was also employed. The association had an office in the Union complex.

The annual balance sheet showed accumulated funds of $170,000 including fixed assets: an alpine hut, squash courts and the student portions of the union building. Administration expenses included N.Z. Universities Students’ Association levy exceeding $7000 and the clubs’ miscellaneous expenditure $13,000. Other fixed commitments built into the constitution included the funding of the Sir Malcolm Burns Scholarship ($200) established by the association in 1974 to commemorate the work for students by the former Principal and an annual contribution for a 10-year period for the purchase of library books inscribed in recognition of the appreciation students had of another former member of staff. The funds also included investments and reserves for the purpose of future building needs, to a level that the association in 1976 was able to contribute generously towards the cost of a planned recreation centre.

The presidents and their executive officers worked hard on a combination of responsibilities for the association’s big business and a normal lecture course. In general the best material came through to the top in the office of president. He was arbitrator of the collective thoughts and feelings of the corporate student body, spokesman for the Association to the College Council, and in the N.Z.U.S.A. In recent years some presidents have opted to give up their course work during their year of office. The pressures of office have also weighed upon executive members, so that students are reluctant to serve. Apathy, disinterest and difficulty of obtaining candidates for office have become commonplace in the setting up the students’ organisation. The usual medium for communicating with their electorate was a broadsheet, distributed regularly, sometimes entitled “Ferment” or “Gutsache”. This provided information on activities and included messages of appeal or condemnation.

Students’ Associations in general were now meeting difficulties
arising from general apathy, swift turnover of members, and lack of continuity in direction. The annual general meetings were disappointing and the start of the 1976 meeting was delayed 40 minutes to find a quorum of 100 members. No student meeting taxed the capacity on any main lecture hall.

At Lincoln, annual meetings had become forums for debate on socio-political issues, reflecting both the increased awareness by students of their role as young adults in society, and at times a highly critical reaction to the state of affairs throughout the world. Recent meetings approved motions calling upon the Government to disband the Security Intelligence Service; to set up a Commission of Inquiry into police activities and procedures; to desist from any public works (roading) through the Greenstone Valley; to oppose the N.Z. Forest Service scheme for utilisation of Westland’s indigenous beech forests.

The College authorities were urged to initiate schemes for assessing lectures and lecturing to improve the standard of teaching in the University. On the international level, Lincoln students called for the release of thousands of political prisoners held in several specified countries; they strongly opposed the apartheid system in South Africa. The recognised conservatism of the Lincoln student was indicated by rejection of motions calling for integration of private schools in the state education system; rejection of opposition to entry in New Zealand waters of nuclear powered ships; opposition to proposed lowering of the legal drinking age to 18 years; opposition to an enforced establishment of a Farm Workers Union to be affiliated with the Federation of Labour.

The political pulse was further nourished by the institution by President I. R. Gunn’s Executive in 1971 of College Forums, utilising a concession by the Professorial Board of “Free time” (two hours applicable to all courses). Each year these brought personalities of national status into contact with students. It was intellectually stimulating to be among the audience, to be a participant in or a witness of the inter-play of question and argument, “Caclin” continued to be the official L.C.S.A. newspaper, run by advertising revenue and an annual grant of about $2500 from association funds. Editors were hard to get and support for the paper declined, though the successive issues were quickly scanned in staff common-rooms, primarily to observe the latest tilt at authority or at the establishment. Twenty years ago there was a distinctly journalistic quality in the work under the editorship of M. Hill (now University of New England, N.S.W.) and L. Gordon (now Canada), with D. I. Jackson (now reader in horticulture) as business manager. There was then an even distribution of feature articles contributed by
student reporters, well-composed editorials dealing with college developments or inadequacies, sports and club notes, and a reasonable content of original prose or poetry. In 1960, the editors, E. Etwell (later farm consultant, Timaru) and D. W. Kidd (who later made a career in Canada) also aimed to report on college affairs of interest to the whole community. There was a complete absence of anything salacious or of terms that at that time were regarded as obscene. There was an editorial complaint in 1967 that “Caclin” was languishing through difficulty in obtaining staff, and the apathy within the student community was illustrated by the absence of workable attendances at student meetings. From then on feature articles began to include the subjects of illegitimacy in New Zealand, methods of contraception, marijuana, alcohol and women. A frontal nude photograph was published in 1969, club or sports reporting was minimal and four-letter vocabulary was commonplace. There were no more contributions from academic staff. By 1976 it was stated “in fact ‘Caclin’ editors usually print anything they can lay their hands on”. This scrutiny of “Caclin” over a 20-year period would be a cause for concern if the present image were truly representative of student activity and interests. It would probably be nearer the truth to assume that the editorial policy had come into the hands of a way-out minority. The imposition of minority views had become the prerogative of the powerful, encouraged by the apathy of the rest. The student activism of the late 1960s had slumped to student apathy in the 70s. Many observers believed strongly that students were being kept so busy with their lectures that they had no time to take part in student association affairs.

Very capable students, the educationally well-prepared, could just manage to participate in extra-mural activity. The pressure of scheduled lectures, assessments and examinations kept many away from sport and association or club administration.

Heavy pressures were being imposed on students and the Professorial Board appeared unable to devise time-tables that retained an earlier accepted pre-requisite of student welfare—a balance between time allocated for academic work and for useful employment of leisure. The technological explosion of the inter-planetary age was in full spate exemplified by American success in placing men on the Moon (1969), then a satellite on planet Mars (1976) that was further fitted and activated from Earth to test the nature of Martian surface detritus. These events did not appear to enthuse students greatly, were accepted as just another ingredient in the expansion of all forms of intellectual endeavour and technical accomplishment. In 1924, Hilgendorf’s little text-book related all he knew on insect
pests but by 1976 Harrison's team of entomologists produced an enormous compendium of ten-fold increase in volume. The captive student clientele at Lincoln would have to purchase it and assimilate the lot if they were to make progress in that particular part of biology. The revolution in instant communication through television in 1976 had transformed international sport on another continent (the Olympics, Montreal; rugby in South Africa) together with riot and warfare (Northern Ireland, Lebanon, Angola) to the level of daily experience of the campus. One Lincoln staff member, R. E. Chilcott (Agricultural Engineering) was able to communicate one of his lectures on the prevailing topic of alternatives in energy resources to any part of the earth by way of an orbiting satellite used in a Pan-Pacific education and communication experiment (University of Hawaii). At every turn there were vast accretions of information and knowledge converting once simply defined university subjects into "subject areas" unassimilable within the confines of standard texts.

Audio-visual aids, micro-film, photo-copying services, all now readily available at Lincoln speeded up availability of the material.

A minor activity that did not truly reflect the qualities of the majority of students was the annual publication of a journal that had tentative titles intended to attract notice. Eventually the sponsors settled for the title "Ram". In 1972 this publication was referred to the Indecent Publications Tribunal and condemned, but the action was retrospective and by the date of the judgement, the copies had been sold or otherwise disposed of. Publication and distribution of "Ram" catered for a definite market. Clearly thousands of New Zealanders willingly purchased it to the extent that by 1975, accumulated profits from sales had resulted in $30,000 being added to the association's general funds, earmarked to provide a recreation centre. In addition, about $10,000 from the profits was given to various charities between 1973 and 1975 and the officers of these had no qualms about accepting the donations.

The majority of students at Lincoln were not vulgar and this majority really could not care less about "Ram". The state had occurred in a student community wherein minority elements were able to have their way. To be disapproving was unfashionable. Gone were the years of disciplined control of students, of students who followed orderly patterns.

The influence of staff on students outside the lecture room may have diminished slightly, but Lincoln remains a small and distinctive university community, where the relationship between staff and students is wider and warmer than on any other campus in New Zealand. There is a kind of family friendliness about Lincoln,
difficult to define but nevertheless there, as any former student or teacher will testify.

Students would resent staff interference in the administration of their organisation, but there is little doubt that the units of the association that have vitality and durability, and which are enjoyed by the members, are those that have staff influences.

The Students' Association in 1976 supported 23 clubs or affiliates that offered cultural opportunity or physical recreation. The Field Club which used to be based on the Oaro Station and for several years enjoyed well-planned expeditions, became a branch of Ecology Action. The annual athletic sports lapsed though R. P. Pottinger, before leaving the staff, tried hard to arouse interest. It appeared that students no longer wanted to stage athletic events just for the fun of it, or as a social occasion. Athletics were now only for the highly skilled, the specialist for whom the autumn trials were arranged solely to fit them for the Easter tournament. A most regrettable aspect is the apparent loss of valuable challenge trophies, some of which had sixty years of inscribed names. The whereabouts of many of the trophies is unknown, some no doubt being retained by the last recipient.

Cricket also had become an exercise only for the accomplished or talented, in preparation for the Easter tournament. There was sufficient talent in the 1973-74 teams that included class players like R. W. Fulton, D. J. Gatenby (Tasmania), A. Ormond, T. Mackie, C. Dampier-Crossley, P. Clayton and D. W. Priest to enable them to beat Victoria, Auckland, and Massey Universities. Priest also captained the N.Z. University team on a short tour of Eastern Australia in 1974. Cricket and the university tournament will for one team (1968) be remembered differently. K. Armstrong's side, including J. J. Ryan* acquitted themselves with bravery during the wreck of the inter-island vessel Wahine, with a loss of over 50 lives, on April 11, 1968. Canterbury and Otago students were also on the vessel, on their way to Palmerston North. In the chaos that occurred, the students bolstered morale with their guitars, helped old people and children and did not enter the lifeboats as many other able-bodied males did. L. R. Kingsbury (M.Agr.Sc. '59) also recorded his and his wife's experiences as passengers in the ill-fated ship.

John Pryde, a staff member, made a renewed attempt to foster debating. The plea was that students could gain from becoming more confidently articulate in public speaking.

Regular Sunday morning chapel services had ceased, but nearly 100 students and junior staff were meeting weekly for devotional study and supplementing this fellowship with field and social outings. A post-graduate student and staff Christian fellowship was meeting weekly during mid-day recess in 1976.

There was small participation in all manner of newly-instituted clubs such as Australian rules football, badminton, deer stalkers and rifle shooting, karate, yachting, rowing and chess. Badminton, basketball, hockey (men’s and women’s) and soccer teams played in Christchurch competitions. A staff member, J. Sumner, was at one stage in soccer as “player-captain-coach”. In 1971 the badminton players D. Yoong and Miss J. Miles were the top ranked players in the competitions. Of note in this recent period were a top ranked golfer (A. J. Allison, M.Agr.Sc.) selected in 1966 for the N.Z. University team, a basketballer (J. Fairweather) Canterbury and New Zealand representative, oarsmen (C. Nilsson and I. Sutherland) members of successive Olympic rowing eights, and an athlete (J. Power) who won the national 5000 metres title.

The Alpine Sports Club had lost the vitality and momentum of its first decade, but renewed enthusiasm was generated in 1962 by a staff group, A. S. Campbell, W. B. Sylvester and A. P. Mulcock, and students I. Ritchie, G. Evans, K. Hawke and L. Baker, who managed to re-establish one of the most successful clubs within the association. These people and their helpers (including college maintenance staff) built a 12-bunk alpine hut, designed by Harold Yeatman in the Craigieburn Valley. In addition to the basics, there were hot and cold running water and shower and drying-rooms and another 15 bunks were added by extension two years later.

The College rugby club had confirmed its standing as a great “nursery” club. Many of the more skilled players were moving on from college teams to provincial and national distinction. As with skiing so with rugby: staff involvement in the club was beneficial. Staff members who were former players, coached the teams.

In 1962, the rugby club, after several years of negotiation was permitted to leave the Ellesmere sub-union and play in the Christchurch (Canterbury Rugby Union) competitions. Entry to the city senior grade was not easily conceded, as the first fifteen had to serve a qualifying apprenticeship in the second (senior reserve) grade. They narrowly failed to win this in 1962, succeeded in 1963 and in 1964 were promoted to Senior A.

The senior coach during this period was H. E. Garrett, one of the
THE SEED THEY SOWED

best the team had, a former N.Z. U. Rugby blue and member of an Oxford university touring team in 1948. His wry grimaces and explosive exhortations will be fondly recalled by his teams, as they were on farm management field trips. Harry Garrett had died before the senior team of 1964, under D. G. Elvidge (captain) and D. S. H. Hart (coach) in its senior debut, won 11 competition matches in 16 (defeating the ultimate winners) and ended the season in third position.

The 1968 team was second-ranked in the competition, and in the following year, L. J. Dowling’s team won the senior grade of the Canterbury Rugby Union. The momentum was held until 1971 when A. McLellan’s team, with D. G. Elvidge now as coach, was equal first in the competition. They defeated University in each round and in one match, D. A. Hales established a “Guinness” record by personally scoring six times. In the following year he and I. A. Hurst were members of the N.Z. All Blacks on the tour of Britain and France. The best players were regularly selected for the N.Z. University sides but some fortunately had extra reward. In 1967 W. J. Thompson toured Japan with the N.Z. University team while in early 1976, three players, J. McLay, M. Codlin and A. C. R. Jefferd were in the University team that visited and played rugby in California, Ireland and Japan. This experience of the young men, confined to a few weeks by jet aircraft travel, would be about the sharpest contrast in the circumstances of rugby football as first played at Lincoln compared with the present. Since 1971 Elvidge’s teams have continued to display the qualities of playing that generally appeal—young men moving the ball at speed: playing for the game’s sake, exuberant, somewhat fickle; always disposed to take a chance despite the conformist strategies of the great game. Their place since 1971 has been generally just above mid-way in the senior grade table of 14 competitors.

The other rugby teams all played and enjoyed good rugby, and were coached by staff members. Close identity and rapport were established between staff and students, as in class field trips. In rugby, and in hockey, soccer and other games, the anonymity of the large class was dispersed.

Whereas one playing field sufficed for 70 years, now there were seven. The fervour, almost fearsome, of the mid-week faculty competition among the class teams persisted, as in former years. The level of dedication in these matches was rarely achieved in the Saturday competitions. There was more fun and less bruising contact in the soccer competition among departmental teams composed of staff (including some professors) and graduate students.

When Burns left Lincoln he spoke favourably of students and
suggested there was no basic difference between them and those who were at Lincoln nearly 40 years earlier. He said: “There had always been a small proportion of students who did foolish things but the great majority had always been very sincere, thoughtful and hard-working and most appreciative of assistance and guidance. Possibly the biggest change in young people in recent years was that they now tended to ask for reasons and explanations and in this respect they were perhaps more stimulating to work with and certainly they were more concerned about the welfare of people generally”. Of Lincoln students, he said that they might have occasionally done foolish things, but he had not known them to do things which would hurt people and this he thought was a measure of their understanding and responsibility. A view that students were no different within a 40-year span would be contested by many; it would be agreed, however, that present-day students have been provided with a physical habitat for living, studying and playing, unsurpassed for students elsewhere in this country.
CHAPTER 18

The Old Students’ Association

After 96 years (1976 inclusive) approximate numbers of those who have qualified from courses of study are:—university degrees and post-graduate diplomas 1566; college diplomas, agriculture, horticulture, V.F.M. etc., 4000; college certificates, wool 817, intensive 539, meat inspectors, 1287. These numbers are substantial for a single faculty, though now multi-discipline, university college (see Appendix 5).

The graduates from the first six years of the Lincoln University College of Agriculture, according to McSweeney can be placed in the following broad categories of occupation: research 17.8 per cent; advisory services 25.4 per cent; producer boards 3.3 per cent; university staff 11.4 per cent; secondary teaching 2.8 per cent; conservation 5.5 per cent; agricultural business 8.7 per cent; farming 5.5 per cent; continuing study 16.8 per cent; miscellaneous 2 per cent*; dead 1 per cent.

This distribution does not differ greatly from that recorded for graduates of Canterbury Agricultural College, except that in the recent period a higher proportion are shown to be engaged in advisory work and agricultural business and fewer in school teaching or farming.

It has been impossible to categorize the several thousand diploma students, though the success of individuals has been noted throughout this history. The Lincoln College experience has demonstrated its merit and, on the evidence of the men and women now at work throughout the world, the college has justification for pride and satisfaction. A great deal more has been contributed to society than agriculture-horticulture practitioners for many have deviated from their original purpose, and are among clergy, lawyers, medical, dental and veterinary practitioners, military

officers, retailers, patent-attorneys, engineers, policemen and hoteliers, and in 1976, six members of Parliament. T. P. Shand (Marlborough) (V.F.M. '45) had served the nation as Cabinet Minister and member of Parliament for many years before his death. H. J. Walker (Papanui), formerly accountant in the Registry first elected in 1960, was still politically vigorous 16 years later. J. B. Gordon (Clutha) had entered upon the diploma course in 1941 but abandoned this to serve overseas during World War II. He welcomed the new members of Parliament elected in 1975, all members of the National Party. They were W. R. Austin (Awarua) (Dip.Agr. '51), J. H. Elworthy (Oamaru) (Int.Certif. '54), A. P. D. Friedlander (New Plymouth) (V.F.M. '67), R. L. Bell (Gisborne) (V.F.M. '51), J. L. Lithgow (Palmerston North) (Dip.Agr. '56). This was the parliamentary election in which another old student, I. D. Lamont (Dip.Agr. '56) unsuccessfully contested the Wallace seat for Labour against the incumbent, B. Talboys, now Deputy Prime Minister.

The convocation roll of graduates and diploma-holders is not synonymous with membership of the Old Students' Association. Lincoln College graduates and diploma-holders have been required to make written application for enrolment in their court, but many did not apply, with the consequence that the Lincoln electoral roll remained small and with comparably few voters in council elections. The Old Students' Association was the link between the College and the graduates and diploma-holders, spoke for them, and ensured that suitable candidates were available for election to the Council. Many old students have served over the years in most categories of representation. Direct franchise of graduates and diploma holders was not achieved, however, until the passage of a Statutes Amendment Act. 1944.

There was no conflict between the association in recent years and college administration despite a contentious election procedure. The association in recent years was greatly aided by the registrar and his staff, particularly in the supervision and assembly of accounts. In return, the 2400 members (1976) have consistently worked for the benefit of Lincoln. In many respects the association has achieved more of advantage or benefit to the college than the organisation of staff, either within the N.Z. Association of University Teachers or as a faculty. There is no benefit or acquisition currently at the college, or listed in the calendar, derived from the benevolence of the staff as a corporate body, though some staff over a period have contributed generously as individuals.

With its old students' association, Lincoln College is unique among New Zealand university institutions. The association has
been active for more than 70 years, since its establishment in 1905 under Wm. Lowrie's presidency. In the following decade its purposes were to support the continuing publication of the college magazine, to encourage attendance at sports or other calendar occasions, and to provide prizes and trophies for student competition. The first was a sterling silver cup from funds collected in 1913 by W. O. Berryman (Dip.Agr. '07). Sixty names of old students are inscribed on it—many now famous—winners of an old students' race, part of the annual athletic sports until these were abandoned. This trophy is in safe-keeping awaiting placement in a worthy museum collection. The annual meeting of the association is combined with a dinner, timed to coincide with a major agricultural event, now the farmers' conference. For many years about 50 members attended but now decorum, blended with conviviality, efficient disposal of business and a feature address, attract three times that number. Since World War II, this reunion has been strengthened by group reunions of former classes, such as the 1949 V.F.M., the 1950 diploma and the 1962 degree.

Activity was slight during World War I but the preservation of records, archives and artifacts was attended to by N. P. Neal (B.Agr. '21) and L. J. Wild, who kept records of the overseas war service of former students.

Stability and progress within the association have been largely through dedication of individuals at the centre (Christchurch-Lincoln). Executive service has always been part-time and honorary, but whether this can continue affectively amid the pressure of present-day circumstances is doubtful. The association, under the guidance of G. W. R. Osborne (Dip.Ag. '07) and L. B. Scott (Dip.Ag. '10) was placed upon a sound constitutional base in 1936-7 leading to incorporation in 1938. The association tie had since 1930, been of conventional pattern in the college colours—royal blue and gold. Why the 1937-8 executive discarded these colours and adopted a background of Lincoln green with red and silver stripes superimposed was explained at the time as desirable distinctiveness. A blazer was also offered in Lincoln green colour, carrying a coat of arms completely dissociated from that of the college, designed by the craftsman (Mr. W. Thompson) whose work may be seen in the Sign of the Takahe in Christchurch. The blazer was unpopular, and even before its wearing had lost favour, few were ordered. On the other hand, the tie was a success. The Lincoln O.S.A. tie commanded attention in public gatherings and conferences. For many it appeared to be the only tie in the wardrobe. When T. E. Ludecke was in Tanzania in 1975, he was greeted by a dark-skinned citizen (J. Mende, Dip.Agr. '65) then
unknown to him: “When were you at Lincoln . . .?” In retrospect, the colour change by the old students does not seem to have been a sound move while the blue and gold basis was retained by the college and the Students’ Association clubs.

Production of the magazine, first issued in 1895 was, until 1968, a student-old student commitment with occasional financial help from the board (council). Editorship was the key factor. Though the Students’ Association still has in its constitution a requirement to provide a magazine committee and editor, it has defaulted. The old students have tried to ensure continued publication through their belief that the Lincoln magazine has not lost anything in value. The extent of the historical record is amazing. Had it not been for the availability of this unobtrusive journal, compiled by successive editors throughout 80 years, the assembling of this historical survey would have been even more acutely difficult. Practically all college records, other than board minutes, before 1950 have been destroyed or are lost. The magazine, which has been held together for the last 40 years by the Old Students’ Association, is now near oblivion. Present-day students do not support it adequately, either as subscribers or contributors. Their literary efforts are offered to the newspaper “Caclin”, which deserves support, and also to the discreditable “Ram” which makes money.

The Annual Review last appeared in 1968. A journal to replace the magazine and the annual review is now needed. The old students believe that if no further annual communication is made with their members, reporting on activities at Lincoln, the association will languish and die.

The Memorial Hall is the only building at Lincoln that is consecrated ground, having been dedicated at the opening ceremony in 1924 as a hall of memories. Two-thirds of the cost was contributed by members of the association. From the contributions, the greenstone slabs were also provided bearing the names of those from Lincoln who lost their lives and those who also served in World War I. Twenty years later, under the then president, E. H. Beamish, funds were sought from members to perpetuate the personal college record in World War II. The tablets of Swedish granite were unveiled in 1949 (C. P. Tebb, president) by the Governor-General, Lord Freyberg. At the same time he saw the portrait of one of his greatest soldiers, C. H. Upham, Victoria Cross and bar, one of only three honorary life members elected by the Lincoln O.S.A. The portrait, painted by Archibald Nicoll, was presented to the college by the association.

During the 1939-45 war, R. H. Bevin, C. P. Tebb and H. E. Garrett compiled the records of servicemen, so the roll of honour
was readily available for post-war ceremonies. Many of the servicemen had thanked the association for letters, the magazine, and especially the matron's parcel. That indomitable woman, Miss Lilburne, produced through the war, more than 400 block cakes, paid for and posted by the association, after they had been sewn in calico by the matron and Mrs. E. R. Hudson. The cakes were baked by Miss Lilburne in the evenings "after the cooks had vacated the kitchen". Delicately laced as they were with sherry, they were voted the finest food in several theatres of war, and especially in the prisoner-of-war camps in Germany, where several Lincoln men languished.

In later years the portraits by W. A. Sutton, commissioned by the association, of Professor E. R. Hudson (1973) and Sir Malcolm Burns (1976) were presented to the college and paid for from members' donations. Several brass memorial plates have been provided in memory of the life and work of prominent members of staff. Elsewhere within the halls are several paintings as well as framed photographs of the student All Blacks all given by the association or branches.

The association's contribution was very substantial during the halls of residence public appeal launched in 1967. Old Students were key figures in the central organisation and hundreds of members obtained the greater proportion of approximately $325,000 given by individuals or business houses.

The scholarship plan was formulated in 1913 from the proposal of C. L. Hart that funds should be set aside to give aid to a deserving student. Its completion was delayed many years. By 1935 sufficient funds were available from the investment to provide a half-fee emolument (including an equal contribution by the college board) to a selected member of a young farmers' club. J. W. T. Anstey (V.F.M. '40), Hunter, South Canterbury was the first recipient. It became a full-fee scholarship in 1944. Subsequently the 1965 president of the association set about increasing the scholarship fund independent of council subsidy. The capital sum was doubled through members' donations and since then the old students' scholarship has had an annual value of $250. For many years, F. M. Henderson, an old student farmer of Lintley, Southland, provided the scholarship winner with a selection of books of his own choice.

To mark the 60th anniversary year (1940) of the opening of the college the association offered a fund from which deserving students could obtain interest-free loans to help them pay college fees. Administered confidentially, with the aid of the Registrar, the loan fund has been regularly used.

The service of F. W. Hilgendorf was honoured by the associa-
THE OLD STUDENTS' ASSOCIATION

The Old Students' Association's establishment of a Hilgendorf Memorial Lecture, although unfortunately without prior establishment of an adequate support fund. The ever-generous board (council) met the costs involved in mounting the lectures which were presented as public occasions. They were given in succession by L. J. Wild (1946), Dr. E. S. Archibald, a visiting Canadian agricultural scientist (1949), Professor E. R. Hudson, retired director (1955) and one that coincided with the opening of the Hilgendorf Wing (1968), given by E. W. Hullett, former director of the Wheat Research Institute that Hilgendorf had founded. The first three lectures were published by the association. A student essay competition was instituted in 1934 for a challenge trophy presented to the association by C. H. Hunter-Brown (Dip.Agr. 1891) who had farmed throughout his life in Australia. A. A. Blakely (B.Agr.Sc. '34) who received the first award was later compatriot with J. W. McLean, J. M. Stewart (Dip.Agr. '33), W. D. Robinson, M. C. Armstrong (B.Agr.Sc. '35) and others among the first group of New Zealand students taking up Government bursaries for training of veterinarians at the University of Sydney. The Hunter-Brown competition flourished for several years and resulted in excellent work, but within 20 years, when this sort of prize-seeking effort became unfashionable, the competition lapsed. No-one at the college now knows where the cup is.

The association, chiefly through the magazine, became the agency for recording biographical details of former students and staff. This was fortunate, for within the college administration nothing of the kind was done other than a personal course record. When the Bledisloe Medal award was established in 1930, it was obvious that association representatives should be relied upon to produce details on the citations of candidates. Until 1972 the nomination was made to the Council by the old students' executive, but since then the recommendation has come from a council committee, on which the association has equal representation with the council. The association still assembles the career details of the nominees. The Council has accorded the president of the association the honour of reading the citation of the year's Bledisloe Medallist, as part of the annual graduation ceremony.

Members of the association saved scores of framed photographs of former college cricket and rugby teams, dating from the first decade of the college. When the Ivey Hall dining-room was vacated in 1954 (after the refectory came into use) for conversion into a lecture theatre, nothing was done about the team photographs which used to hang on the walls of the former dining hall. There was even a report that they were to be dumped. In a salvage
operation, two members of the old students' executive with the support of J. D. Mackay, warden, rehung the photographs in the corridors of Hudson Hall. The gallery has been furnished with succeeding team photographs by the Students’ Association, and no doubt the array will be accorded a place of honour in the centennial functions.

Decentralisation of the association in regional branches developed as individuals in these places got together to draw up a list of Lincoln people. George Rennie, Taupiri, had arranged a reunion dinner in Hamilton in 1922, but the first branch to meet regularly was that in Palmerston North, nurtured for several years by A. W. Hudson (B.Agr. '24) then on the staff of Massey College. Professor Peren, the Massey principal, was pleased to attend its functions, notwithstanding good-natured drubbing from some of the Lincoln men such as E. H. Beamish (Dip.Agr. '09), Kohaturunui, Hawke’s Bay, one of his peers.

Surprising also was the Lincoln representation in the Waikato, where since 1954 the branch established by C. P. Tebb (Dip.Ar. '30) and I. L. Elliott (B.Agr.Sc. '34) and controlled by this pair for 20 years has attracted at its functions, numbers comparable with those who go to Lincoln gatherings, 100-150.

The Southland branch (1946) was sponsored by F. M. Henderson who had been a Lincoln contemporary of E. R. and A. W. Hudson. Like other institutions in Southland, it developed stability, with a decorous atmosphere at the annual dinner. M. H. Rogers (Dip.Agr. '31), State Advances Corporation, was one of the progenitors of the Southland branch. On being transferred from Invercargill to Dunedin he formed a branch there in 1952. In the same year, a group was organised in Timaru. In Blenheim (1953) three Marlborough farmers, men of the 1930 diploma class, M. G. Van Asch, G. A. McKeown and D. Young formed a branch. The Marlborough branch was different in that, generally in alternate years, they invited their womenfolk to the dinner function. In recent years, regional meetings of old students have also been held regularly at Whangarei, Auckland, Gisborne, Napier or Hastings, Masterton and Alexandra. During the five years he was in England (1959-64) after retiring from the college staff, J. W. Calder drew together up to 20 men based in the United Kingdom. The function was generally held at the home of P. G. Young (Dip.Agr. '39), College Farm, Cirencester, Gloucester, once on S. A. Mossop's (Dip.Agr. '33) Lincolnshire farm, and once in London, when arrangements were made by T. I. Steenson (B.Agr.Sc. '52), Chelsea Polytechnic.

In Australia, there were spasms of activity, first in Perth during
the 1960s, when many V.F.M. men were going as farm consultants to Western Australia. H. P. Schapper (V.F.M. '40), reader in economics, University of Western Australia, took part. Functions were held in Melbourne regularly after the first in 1960, initiated by J. D. Wilson (Dip.Agr. '58) and B. E. Webber (V.F.M. '50). While he was still in Launceston, E. H. Benham (Dip.Agr. '32) organised the northern Tasmanian members. There was an atmosphere and charm at their dinner functions that exceeded the rather boisterous parties typical of so many of the others.

A high proportion of the graduating students joined the association until the mid-1960s. Typical of the prescriptive form of instruction of the V.F.M. course used to be a benevolent directive to members at their passing-out dinner: “You are expected to join the O.S.A. . . .” The V.F.M. component became the core of strength and support.

Since 1970, the leaders have been concerned that the association might by dying. Very low proportions of graduating classes are now joining—less than 10 per cent. A further symptom of the tenuous link so many students now have with the college activities. The college for many is becoming a centre from which an academic qualification can be obtained, after which the recipients vanish, not to be seen or heard of, at least for some time.

The suggestion was advanced that the Association’s structure was now unable to cope with the task of ensuring retention of the support of graduates and diploma holders, as they moved into life and vocation. With the example of immense benefit to certain Nth. American universities through organised and serviced Alumni Associations, it was proposed for the Lincoln situation that there was urgency in future staffing for the appointment of a Director and an office of Graduate Affairs.

This attitude is perhaps well reflected in the numbers taking part in the annual graduation ceremony, even allowing for the fact that for many, it would be inconvenient to return in May after completing courses in the preceding November. During three recent years, the return of graduates to have their degrees or diplomas conferred in person has been between 20 and 37 per cent for degrees, and 33 and 46 per cent for diplomas.

By 1976 few graduates were joining the association. As they became established in employment, their inclination presumably was to find fraternity in other ways.

With membership stabilised for some years about 2300, the association showed the signs of being a union of ageing men. Moreover, no effort had been made to provide for women members, in a manner that the women could appreciate. Some women
joined the association and a financial concession had been made for man-and-wife subscription. Thus the Brandfords, Ben (V.F.M. '48) and Maurine (née Harty) (Dip.Hort. '49), Taumarunui; the Gilmores, Richie (V.F.M. '56) and Margaret (née Johnston) (Dip.Hort. '56), Blenheim; the Whittys, Bevan (V.F.M. '61) and Susan (née Dale) (Dip.Hort. '60), Invercargill. One of these women attended a branch dinner. She was one brave woman among more than 100 male chauvinists, who did not vary their dubious but locally appreciated custom of telling the latest dirty jokes. Their enthusiasm has maintained the association despite reduced recruitment of new members from recent outputs of students, and the college appreciates the value of a strong old students' association. Nowhere is this better illustrated than in the proposal made by the executive of the association that a Lincoln College Foundation should be established to mark the centennial.

The College Council adopted the suggestion, and in the past three years a joint committee of council members and former students has drafted a deed of trust setting up the foundation. The trust will make grants to approved individuals and institutions anywhere in New Zealand to enable travel, research and other study to be undertaken which will be to the advantage of New Zealand's national agricultural well-being.

The first Board of Trustees comprises D. W. Bain (council chairman); Sir Alan Low (past Governor, Reserve Bank of New Zealand); Sir William Dunlop (past president, Federated Farmers of New Zealand); R. S. Newton (past president, Old Students' Association) and Professor J. D. Stewart (principal of the College).

The College Council has now provided the nucleus of funds for the Foundation through the assignment to the trustees of a portion of its land holding and has indicated that supporters of the college would be invited to make further contributions during the centennial year. There has been confidence that the accomplishments of one hundred years of Lincoln College will evoke appreciative response wherever the Lincoln influence has been felt.

The institution variously known as the School of Agriculture, Canterbury Agricultural College, Lincoln College and Lincoln University College of Agriculture, throughout the century has provided incalculable benefit to almost 10,000 full-time or short-course students. The balance at present weighs heavily in favour of the students. Those still alive, and one hopes, those of the future, would generally be willing, if called upon, to provide a measure of talent or resources towards even greater attainments of the great institution evolved from that weak, small, lonely, ill-nurtured, perhaps premature, School of Agriculture founded in 1878.
At the age of one hundred years, Lincoln College looks into the future with confidence. Its members—students, staff and council and former students—have been discussing the status of the College vis-a-vis other university institutions in New Zealand. Opinion has been divided about the desirability of seeking degree-granting autonomy, or of remaining an affiliate of the University of Canterbury. The College appears unanimous in its wish to retain what might be termed its mono-faculty emphasis on agriculture-horticulture and related interests and is united in believing that any translation into multi-faculty fields lies many years off. The second century opens with continuing evidence of a student—staff corporate spirit which is unexcelled, which derives from a close personal relationship between all members of the College community and which thrives on the unity that is peculiar to a relatively small university. With a corresponding loyalty from a close-knit band of former students, no-one can look to the future of Lincoln College other than optimistically.
APPENDIX 1

The Empowering Acts

CANTERBURY PROVINCIAL COUNCIL

1872 Session XXXXIII 19/12/1872. Board reserved to endow School of Agriculture.

1873 THE CANTERBURY COLLEGE ORDINANCE.

1875 THE EDUCATIONAL RESERVES LEASES ORDINANCE. Provision made for leasing. Trustees of School of Agriculture appointed.


1876 THE CANTERBURY EDUCATIONAL RESERVES SALE AND LEASING ACT.

1896 (No. 46) THE CANTERBURY COLLEGE AND CANTERBURY AGRICULTURAL COLLEGE ACT. Provision for separation of two colleges.

1905 THE CANTERBURY AGRICULTURAL COLLEGE RESERVES ACT.

1925 (No. 28) CANTERBURY COLLEGE & CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT.

1926 (No. 28) NEW ZEALAND AGRICULTURAL COLLEGE ACT. Establishment of a New Zealand College of Agriculture.

1927 (No. 4) MASSEY AGRICULTURAL COLLEGE ACT.

1927 (No. 3) THE CANTERBURY COLLEGE AND CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT. Improved status for Lincoln College.

1928 (No. 4) THE CANTERBURY COLLEGE AND CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT.

1929 (No. 29) THE FINANCE ACT (Section 56). Lincoln grant increased.

1930 (No. 31) THE CANTERBURY AGRICULTURAL COLLEGE ACT, 1930. Professorial board established.

1932 (No. 11) THE FINANCE ACT 1932. (Various provisions in respect to control of public finance.)

1934-5 (No. 49) THE CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT. Borrowing limits defined.

1937 (No. 26) NEW ZEALAND SCHOOL OF AGRICULTURE ACT. Coordination of research work. Repealed 1951.

1944 (No. 25) THE STATUTES AMENDMENT ACT 1944 Sections 4 and 5. Ministerial responsibility.
1949 (No. 21) THE CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT 1949. Board reconstituted.

1950 (No. 91) THE STATUTES AMENDMENT ACT 1950 Sections 5 and 6. Principal’s voting power.

1954 (No. 9) THE CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT 1954. Election of chairman.

1954 (No. 50) THE CRIMINAL JUSTICE ACT 1954.

1958 (No. 56) THE CANTERBURY AGRICULTURAL COLLEGE AMENDMENT ACT 1958. (Repealed by 1961 Act.)

1961 THE LINCOLN COLLEGE ACT 1961. Defined as Lincoln College as from 1/1/1962

"There shall be a constituent college of the University of Canterbury, a University college of Agriculture, to be called Lincoln College”.

1961 (No. 49) UNIVERSITY OF CANTERBURY ACT. Council representation changes.

1966 (No. 14) THE LINCOLN COLLEGE AMENDMENT ACT 1966. Amendment on employees as council members.


1977 THE LINCOLN COLLEGE AMENDMENT ACT 1977. Vice-Principal and Student President ex-officio council members.
APPENDIX 2

The Board of Governors of Canterbury Agricultural College and Council of Lincoln College
(O/S signifies Old Student of the College)

CHAIRMEN
1896-9    Henry Overton, farmer, Ellesmere
1899-1915 Hon. E. C. J. Stevens, M.L.C. company director, Christchurch
1915-26   H. A. Knight O/S (Cert.Agr. 1880-2) farmer, Racecourse Hill
1927      C. Chilton (M.B., C.M., M.A., D.Sc., Hon.LL.D.) university professor, Canterbury College
1928-9    John Deans, farmer, Kirkstyle, Coalgate
1930      David Buddo, M.P. for Kaiapoi
1931-5    H. G. Denham (M.A., M.Sc., Ph.D., D.Sc.) university professor, Canterbury College
1936      C. H. Hewlett, company director, Christchurch
1936-44   W. O. Rennie O/S (Dip.Agr. 1897-8) farmer, Ellesmere
1945-8    H. S. S. Kyle, veterinarian and M.P. for Riccarton
1948-50   C. T. Aschman (O.B.E.) retired school principal, Christchurch
1951-60   W. H. Gillespie, farmer and M.P. for Hurunui

SCHOOL OF AGRICULTURE COMMITTEE OF CANTERBURY COLLEGE
(with more than one year of service)
1876-7    Hon. E. W. Stafford
1876-9    Hon. J. Hall
1876-7    H. F. Gray
1876-89   Hon. E. C. J. Stevens, M.L.C.
1876-86   J. N. Tosswill
1876-87   W. Montgomery
1877-82   H. J. Tancred
1879-85   H. P. Lance
1879-85   W. Reeves
1879-96   F. de C. Malet
1885-91   L. Harper
1885-96   R. Westenra
1887-96   F. D. S. Neave
1889;     J. Grigg
1887-94   W. C. Walker
1889-96   Hon. J. T. Peacock
1889 and
1893      H. R. Webb
1891-4    A. E. G. Rhodes
1893-5    G. G. Stead
1893-6    E. G. Wright
1895-6    J. J. Kinsey
1895-6    W. Anderson

THE BOARD OF ADVICE
APPENDIX

1893 W. Boag, D. McMillan, H. Overton, J. Grigg, Hon. W. Rolleston

MEMBERS APPOINTED BY THE GOVERNOR-GENERAL
IN COUNCIL

<table>
<thead>
<tr>
<th>Years</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Rennie, farmer. 1896-1903: 1915-17</td>
<td>9</td>
</tr>
<tr>
<td>E. Richardson, farmer. 1903-12</td>
<td>9</td>
</tr>
<tr>
<td>W. F. M. Buckley, farmer. 1899-1908: 1913-19*</td>
<td>16</td>
</tr>
<tr>
<td>C. Chilton (M.B., C.M., M.A., D.Sc., Hon. LL.D.), university professor. 1920-27</td>
<td>8</td>
</tr>
<tr>
<td>C. H. Hewlett, company director. 1928-35</td>
<td>8</td>
</tr>
<tr>
<td>T. A. Stephens, farmer. 1928-9</td>
<td>2</td>
</tr>
<tr>
<td>J. Hight, C.M.G., Litt.D., university professor. 1936</td>
<td>1</td>
</tr>
<tr>
<td>F. W. Hilgendorf, M.A., D.Sc. FNZ inst., university professor. 1937-43</td>
<td>7</td>
</tr>
<tr>
<td>J. E. Strachan, O.B.E., M.A., M.Sc., retired school principal. 1943-61</td>
<td>18</td>
</tr>
<tr>
<td>W. J. Cartwright, O.B.E., B.A., retired school principal. 1962-7</td>
<td>6</td>
</tr>
<tr>
<td>J. Boyd-Clark, farmer, company director. 1968-73</td>
<td>6</td>
</tr>
<tr>
<td>A. F. Wright, farmer. 1974-</td>
<td></td>
</tr>
</tbody>
</table>

ELECTED BY MEMBERS OF THE LEGISLATIVE COUNCIL AND/OR BY MEMBERS OF PARLIAMENT OF CANTERBURY ELECTORATES

<table>
<thead>
<tr>
<th>Years</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hon. W. Rolleston, M.H.R. 1896-1900</td>
<td>5</td>
</tr>
<tr>
<td>Hon. E. C. J. Stevens, M.L.C., company director. 1896-1915</td>
<td>20</td>
</tr>
<tr>
<td>F. de C. Malet, company director. 1896-7</td>
<td>2</td>
</tr>
<tr>
<td>D. McMillan, farmer. 1897-1900; 1902-4</td>
<td>6</td>
</tr>
<tr>
<td>G. Jameson, farmer. 1900-02; 1908-09*</td>
<td>5</td>
</tr>
<tr>
<td>R. Rainey, farmer. 1900-01</td>
<td>2</td>
</tr>
<tr>
<td>M. Murphy, farmer and secretary A. &amp; P. Assn. 1901-14</td>
<td>15</td>
</tr>
<tr>
<td>A. L. Joseph, farmer, 1915. (Did not sit.)</td>
<td></td>
</tr>
<tr>
<td>G. Murray, farmer. 1927-9</td>
<td>3</td>
</tr>
<tr>
<td>E. J. Howard, M.P. for Sydenham. 1930-35</td>
<td>6</td>
</tr>
<tr>
<td>M. E. Lyons, A. &amp; P. Assn secretary, 1936-8; 1948-9**</td>
<td>5</td>
</tr>
<tr>
<td>H. E. Herring, A.M.I.E.E., M.P. for Mid-Canterbury. 1938</td>
<td>1</td>
</tr>
<tr>
<td>C. Morgan Williams, M.P. for Kaiapoi, 1939-47</td>
<td>8</td>
</tr>
<tr>
<td>T. H. McCombs, M.Sc., M.P. for Lyttelton. 1939-44</td>
<td>6</td>
</tr>
<tr>
<td>E. A. Sharp, union secretary. 1948-9</td>
<td>2</td>
</tr>
<tr>
<td>C. Carr, M.P. for Timaru. 1948-50</td>
<td>3</td>
</tr>
<tr>
<td>W. H. Gillespie, M.P. for Hurunui. 1949-60</td>
<td>11</td>
</tr>
<tr>
<td>A. J. Smith, stonemason. 1949-61</td>
<td>12</td>
</tr>
<tr>
<td>R. G. Gerard, M.P. for Ashburton. 1951-7</td>
<td>6</td>
</tr>
<tr>
<td>N. G. Pickering, business executive. 1962-71</td>
<td>9</td>
</tr>
</tbody>
</table>

* Elected as A. & P. Assn representative.
** As Christchurch City Council co-opted representative.
THE SEED THEY SOWED

ELECTED BY MEMBERS OF PARLIAMENT OF SOUTH ISLAND ELECTORATES

T. K. Burke, B.A., M.P. for Rangiora. 1973-  
W. R. Laney, B.A., M.P. for Oamaru. 1975-77

ELECTED BY INCORPORATED AGRICULTURAL & PASTORAL SOCIETIES

H. F. Gray. 1896-9  
H. Overton. 1896-9  
R. H. Rhodes. 1896-7: 1899-1902: 1913-14  
W. Boag. 1897-9  
H. A. Knight. (See above.)  
J. Studholme. 1902-8:1924-8  
Sir George Clifford. 1903-5  
T. Harrison. 1905  
G. Gould. 1905-08  
T. Blackley. 1908-24  
J. McMillan. 1908-12  
G. Jameson. (See above.)  
T. Teschmaker. 1909-12  
J. Deans.1912-35  
B. H. Tripp. 1915-20  
W. T. Ritchie. 1921-2  
N. M. Orbell. 1922-41  
J. R. D. Johns. 1935-49  
G. F. Wright. 1935-44  
R. T. McMillan. 1942  
C. G. Jarman. 1948-61

FARMERS UNION REPRESENTATIVES (CO-OPTED)

I. L. M. Coop (Canterbury). 1940-9  
E. Reid (Marlborough). 1946-51  
H. G. Pinckney (Southland). 1948-9

ELECTED BY FEDERATED FARMERS OF NEW ZEALAND

Nth. Mid. South Canterbury

C. Hilgendorf, M.A. 1950-61  
J. F. G. Blakely. 1961-

Marlborough, Nelson, West Coast

E. Reid. 1950-1. (See above.)  
S. M. Wallace. 1953-9: 1975-  
D. S. Max. 1960-8  
R. C. Grigg. 1969-74
APPENDIX

Southland

Otago and Nth. Otago
S. M Hurst. 1962-

APPOINTED BY CANTERBURY UNIVERSITY
COLLEGE COUNCIL

W. A. Banks, retired school principal. 1928-38 10
C. T. Aschman. O.B.E., retired school principal. 1935-50 16
W. C. Colee, M.A., retired school principal. 1941-58 18
S. J. Irwin, retired school inspector. 1951-9 8
journalist, secretary. 1959-
Hon. J. K. McAlpine, K.C.M.G., farmer. 1959-77 19

APPOINTED BY THE UNIVERSITY OF OTAGO

R. S. Aitken, M.D., D.Phil., LL.D., F.R.C.P., vice-chancellor O.U. 1950 1
J. C. H. Somerville, company director. 1951-5 4
G. A. Holmes, civil servant. O/S (B.Ag. 1922-3). 1955-61 6

ELECTED BY LINCOLN COLLEGE GRADUATES
AND DIPLOMA HOLDERS

Co-opted
L. B. Scott, O/S (Dip.Agr. 1908-10), farmer. 1939-43; 1948-9 6
L. W. McCaskill, O/S (M.Agr.Sc. 1919-20, university lecturer. 1944 and 1950. 2
C. E. Iversen, O/S (M.Agr.Sc. 1925-7), university lecturer. 1945-6 2

Elected
T. D. J. Holderness, O/S (1938-9), farmer. 1950-
W. G. Hadley, O/S (Dip.VFM 1938), civil servant, Valuation Dept. 1950-5 5
G. B. McLeod, O/S (B.Agr.Sc. 1937-40), school teacher. 1950 1
A. C. Wright, O/S (Dip.Agr. 1934-5), farmer. 1951-3; 1963-8 9
C. C. Leitch, O/S (Dip.Agr. 1919-21), civil servant, Dept. of Agriculture, Timaru. 1954-5 2
W. C. Stafford, O/S (Dip.Agr. 1924-6), civil servant, Dept. of Agriculture, Timaru. 1955-64 9
A. H. Flay, O/S (M.Agr.Sc. 1925-8), university lecturer. 1965 1
H. C. Smith, O/S (M.Agr.Sc. '49) Ph.D. Cantab. FNZIAS. Director, Crop Research Div. DSIR. 1978-
ELECTED BY TEACHING STAFF OF THE COLLEGE

A. W. Riddolls, B.E., B.Sc. 1950-1
B. J. Ross, M.Agr.Sc. 1977-

ELECTED BY THE COLLEGE PROFESSORIAL BOARD

J. D. Stewart, O/S (1948-9), Dip.VFM, Ph.D., M.A. 1972-4
T. M. Morrison, M.Sc., Ph.D. 1974-7

APPOINTED BY LINCOLN COLLEGE COUNCIL

T. W. Preston, M.N.Z.I.S., civil servant. 1962-4
G. Gibson, company director. 1965-71
J. Boyd-Clark—see above. 1962-7; *74-
W. M. Hendrie, Rev. M.A. 1971-4

DIRECTOR/PRINCIPAL IN FULL MEMBERSHIP

J. D. Stewart, M.A., Ph.D., Dip.VFM. (O/S 1948-9). 1974-

PRESIDENT OF STUDENTS’ ASSOCIATION

(in attendance)
S. D. Hight. 1973
J. B. Burns and T. McIntyre. 1974
D. Rockell. 1975
R. M. Bucknall. 1976
R. G. Eastoe (full membership). 1977
G. Macindoe. 1978

APPENDIX 3

Staff of the College
(Long Service and Senior only)
(for full list see extended appendix deposited in College Library)

FARM OVERSEEERS, SUPERINTENDENTS,
UNIT MANAGERS

Abbreviations: O/M. Overseer or Manager
Sup. Superintendent
U/M (Sh). Unit Manager (Shepherd)
U/M (St). Unit Manager (Stockman)
U/M. Unit Manager

Palethorpe, T. O/M 1880-2
Hay, J. O/M 1886-1900
Tabor, W. and Mrs. Tabor U/M (St) 1889-1905
Alington, H. O/M 1890-2
Overton, H. O/M 1892-3
Wright, E. U/M (Sh) 1895-1900
McLay, J. O/M 1900-01
Marcroft, W. U/M (Sh) 1901-5
Simpson, J. O/M 1901-03
Street, W. O/M 1903-14
Linton, J. (Snr) U/M (Sh) 1906-28
Campbell, J. U/M (St) 1906-16
Willis, R. O/M 1914-17
Duncan, T. O/M 1917-24
Allan, A. U/M 1920-5
Tobeck, G. O/M 1924-7
Fougere, R. A. O/M 1927-36
Fleming, M. U/M (St) 1929-32
Linton, J. (Jnr) U/M (Sh) 1929-35
Graham, J. U/M (St) 1929-34
Hines, W. A. U/M 1930-50
Hope-Johnstone, C. J. U/M (St) 1932-7
Hannah, V. U/M (Sh) 1936-43
McLay, A. K. O/M 1936-40, 41-46
Tebb, C. P. O/M 1940-3
Sup. 1946-52

Haywood, C. H. U/M 1947-53
Watts, C. N. O/M 1943-6
Brandford, W. B. O/M 1949-53
Aschen, R. P. U/M (Sh) 1943-7
Oakley, I. R. U/M (Sh) 1945-50
Biddick, J. U/M (St) 1947-59
Ross, D. S. U/M (Sh) 1950-7
Ward, L. F. U/M 1945-51, 59-63
Oldfield, J. H. Sup. 1953-5
McNaught, J. D. sup. 1955-9
Barwell, A. F. U/M 1954-5
Redpath, F. R. U/M 1955-7
Haggitt, I. U/M (Sh) 1957-67
Kofocd, J. R. U/M 1957-62
Musgrave, G. F. U/M 1959-60
Botting, D. J. U/M 1960-4
Laming, R. U/M 1960-
Steer, W. T. S. U/M 1960-6
Malauin, D. O. U/M 1960-75
Taylor, A. T. U/M 1961-
May, W. V. U/M 1961-6
Rollinson, R. F. U/M 1962-8
Perriam, K. T. U/M 1965-8
Sutherland, C. A. U/M (Sh) 1966-
Cartridge, S. A. U/M 1966-72
Kelly, B. J. U/M (St) 1969-76
Nicholl, R. M. U/M 1968-71
Hanning, R. K. T. U/M 1972-5

POULTRY UNIT

Stark, J. L. O/M 1943-62
Todd, D. 1955-63

Moir, R. B. F. 1960-6
(See Farm Hands & Plant Sci.)
Robertshaw, Miss J. 1933-5

LEADING FARM HANDS

Carne, R. 1880-99
Knight, D. 1885-1904
Barton, G. 1892-1902
Frazer, Jas. 1915-33
Knight, S. 1917-26
Gillat, G. 1929-39, 1945-50
Gillat, K. 1929-31, 36-40, 47-49
Brown, W. C. 1937-64
Moir, R. 1940-60
Loffhagen, F. A. 1945-64
Carpenter, L. 1950-55
Malaquin, D. O. 1948, U/M 1964-75
Burnaby, J. 1954-62
Wilson, D. D. 1957-67
Shankie, A. H. 1970-

FARM AND COLLEGE SERVICES

Saddlers
Kissell, H. 1905-12
Cone, F. W. 1917-28
Gudsell, H. 1929-33

Mechanics/Engineers
Fougere, R. A. 1924-7
Tebb, C. P. 1934
(See Farm Overseers)
Curno, L. 1937-45
Chesney, J. S. 1940-66
Smith, A. D. 1954-62

Painters
Copplestone, S. H. 1938-51
Murch, C. 1949-55
Charlton, L. 1956-68

Boiler Unit
Hawkins, W. A. 1957-65
Wilson, W. G. 1960-75
Everest, R. E. 1964-

Custodian
Hendren, F. P. 1965-

Disposals
King, D. 1959-

Printer
Young, T. R. 1966-

Butcher
Bennett, T. H. M. 1944-76

Blacksmiths
McPherson, C. 1885-1906
Macintosh, J. C. 1907-38
Caldwell, R. J. 1939-43
Richmond, T. 1944-8
Wilson, J. 1939-53
Leatham, B. 1954-60
APPENDIX 309

Carpenters
Fraser, R. 1938-55
Reiach, G. 1951-60
Gibbs, G. S. 1954-61 (foreman)
(See Engineering)

McDonald, A. H. 1954-61
Jordan, T. 1960-
Eilken, M. 1961-75
Melhopt, T. 1971-7

REFECTORY AND HALLS

Abbreviations:
M Matron/Housekeeper
A Assistant
L Laundry
P Porter
W Warden
M/H Master of Halls

Ivey, Miss (M) 1880-9
Dickson, Miss (M) 1889
Craig, Miss (M) 1890-7
Williamson, Miss (M) 1897-8
(Photography service Sth. Africa)
Weir, Miss (M) 1898-1900
(Photography service Sth. Africa)
Scott, Miss (M) 1903-18
Owen, Miss A. (A) 1904-18
McLaren, Miss (M) 1918-20
Lane, Miss (M) 1920-1
Hastie, Miss (M) 1922-5
Lyons, Miss N. (A) 1927-50
Kerr, Mrs (M) 1925-7
Forbes, Mrs J. (M) 1928-31
Duggan, Miss C. M. (A) 1927-35
Armour, Miss E. (M) 1931-4

Thomas, Miss I. (A) 1932-69
Barker, Mrs (M) 1934-5
Lilburne, Miss E. (M) 1935-61
Findon, Mrs E. V. (A) 1938-68
Gibbons, Mrs N. J. H. (A) 1946-61
Mackay, J. D. (W) 1947-62
Bartle, Miss E. (A) 1954-61
Moir, Mrs R. (A) 1960-
Crowe, A. P. & Mrs L (I) 1961-5
Lanham, Miss R. E. (M) 1961-9
Douglass, B. (M/H) 1962-75
Taylor, Mrs M. C. (A) 1960-70
Beswick, Mr & Mrs F. 1965-76
Gelissen, Miss L. J. (M) 1969-70
Moore, Miss E. M. (M) 1970-4
Stowell, Miss L. M. (M) 1974-
Gabb, R. G. (M/H) 1976-

DINING HALL/REFECTORY/UNION

Abbreviations:
M Manager
C Cook
P Porter
A Assistant
St Steward
S Supervisor
T/Cl Typist/Clerk

Muff, D. R. (P) 1930-5
(See Library)
Malins, F. (C) 1945-62
Colenso, A. (P) 1948-60
Pratt, W. (P) 1950-63
Brooker, J. (P) 1949-66
Wallace, G. (C) 1950-9
Schaffer, Mrs R. (A) 1956-64
Munro, W. G. (M) 1960-5

Haggitt, Mrs M. (A) 1960-6
Hand, B. A. (C) 1960-3, 67-73
Keogh, J. J. (M) 1960-7
Beedle, E. H. (M) 1962-4
Spenser, Mrs W. P. (T/Cl) 1965-71
Cowlishaw, F. I. (M) 1966-
Coard, C. R. (M) 1968-72
Dore, Mrs T. M. (S) 1969-
Vaney, V. J. I. (M) 1972-

ADMINISTRATION/REGISTRY

Abbreviations:
Bk Bookkeeper
Sec Secretary
Ac Accountant
R Registrar
Sh/Ty Shorthand-Typist
Cl/Ty Clerk-Typist
Cl Clerk
A/A Admin. Assistant
T/O Telephone Operator
R/S Registrar's Secretary
P/S Principal's Secretary
P/O Post Office
A/R Assistant Registrar
D/R Deputy Registrar
D/P/O Data Processing Officer
THE SEED THEY SOWED

Davis, C. L. (Bk) 1880-1
Tusor, H. W. (Bk) 1883
Buckley, E. C. (Bk) 1884
Pemberton, O. B. (Sec) 1898-1900
Foster, C. W. (Sec)
Banks, M. 1924-5
Roberts, F. C. (Sec) 1925-8
Smart, E. W. (Sec) 1928-30
Rosc, Miss B. E. (Sec) 1930-2
Allen, P. F. (Sec) 1932-5
Batchelor, Mrs E. R. (Sec) 1935-9
Steeds, J. M. (Ac) 1938-40
Kirkness, J. A. S. (R) 1939-49
McKay, Mrs A. (Cl/Ty) 1937-44
Farmer, Mrs E. G. (Cl/Ty) 1940-5
Mahony, Miss J. (P/S) 1946-
Dalglish, Mrs N. (Sh/Ty) 1943-62
McEwen, G. H. (Ac) 1945-54
Pugh, Miss B. V. (T/O) 1950-5
Attwood, Mrs I. (Cl) 1950-67
Hunt, H. G. (R) 1949-76
Martin, J. H. (Cl) 1950, (Asst Ac) 1963,
(Ac) 1966, (A/R Fin.) 1973, (D/R) 1976-
Davies, Miss J. (R/S) 1953-9
McArthur, Mrs H. M. (R/S) 1957-73
Walker, H. J. (Ac) 1954-60
Foster, Miss M. T. (Cl) 1957-69
Wilson, J. W. (Cl) 1959, (A/A) 1967-
Chaplin, H. (A/A) 1959, (Exam/O) 1971-7
Yeatman, Miss L. M. (T/O) 1963-6

Isaac (nee Thomson) Mrs P. (Sh/Ty) 1963-74
Thomson, Miss J. (Sh/Ty) 1964-73
Young, T. R. (Printer) 1966-
Wills, Miss M. (Cl) 1967-76
Fraser, P. H. (A/Printer) 1968-
O’Reilly, Miss C. A. (Cl/Ty) 1967-
Scott, J. H. (A/R) 1965, (D/R Acad.) 1973-
Harvey, H. N. M. (Bldg/O) 1966, (A/R Bldg) 1971, (D/R Bldg) 1977-
Neeson, P. W. N. (A/A) 1969, (Staff/O) 1974, (A/R Staff) 1976-
Rishworth, R. C. (Paymaster) 1969-
Restieaux, A. H. (A/A) 1969-
Fauth, Miss N. (T/O) 1969-
Maclean, D. (A/A) 1971-3
Oxnevd, P. (Admin/O Sec) 1971-
Crosby, N. (Purch/O) 1971-
Currie, C. N. (A/A Bldgs) 1971-
Chisholm, R. J. (A/A) 1972-
Dodds, Mrs L. M. G. (A/A) 1973-
Treeby, R. I. (A/A) 1973-
Green, Miss F. L. (Cl/Ty) 1973
Ramsay, Mrs M. I. (R/S) 1973-
Shuker, Mrs G. E. (Sh/Ty) 1973-
Thorn, Mrs M. M. (Sh/Ty) 1973-
Eden, Miss S. I. (Sh/Ty) 1973-6
White, Mrs J. C. (Cl/Ty) 1973-
Wilson, O. M. (Careers/O) 1974-
Skilton, N. L. (A/A) 1974-
Pluck, R. I. (Cl records) 1974-
Dawson, L. (A/R Finance) 1976-
Hay, G. (R) 1976-

ACADEMIC

Abbreviations (Academics):
P Professor
As/P Associate Professor
Em/P Emeritus Professor
R Reader
V/P Visiting Professor
L Lecturer
S/L Senior Lecturer
A/L Assistant Lecturer
P/T/L Part-time Lecturer
Hon/L Honorary Lecturer
HOD Head of Department
Dir Director
R/A Research Assistant
R/O Research Officer
R/F or Research-teaching Fellow,
V/F Visiting Fellow
F/O Field Officer
T/O Technical Officer
T Technician
An Analyst
Ins Instructor
A/A Administration Assistant
Dem Demonstrator
ST Laboratory Steward
A/L Assistant Librarian
L/A Library Assistant
Prog Programmer/Analyst (computer)

ANIMAL HUSBANDRY/SCIENCE

Scott, M. J. L (Nutrition) 1922-31 (See Soils)
Sidey, D. J. 1926-35 (See soils/chemistry/wool)
APPENDIX

3.11

Stevens, P. G. L 1939, S/L 1946-61
Garrett, H. E. L 1939-40 (Ref. Farm Management)
Lancaster, R. J. Analyst 1939-40 (Second D/Agr)
McMeekan, C. P. L 1940-41, P 42-3
Coop, I. E. L 1941, Spec. duties war service 1942-5, P 1946-78, V/Principal 1958

Cross, J. A. T 1945-50
McLeod, G. B. L 1944-6
(See Entomology, Rural Educ.)
Hollard, M. G. A/L 1947, L 1950, S/L 1958, R 1968-
Bray, Mrs M. J. T 1948-55
Hart, D. S. L 1950, S/L 1954, R 1967-
Meyer, G. S. T 1958-64
Nicol, A. M. L 1968, S/L 1976-
Barrier, L. D. R/A 1968-
Elvidge, D. G. L 1969, S/L 1977-
Sykes, A. R. P 1978-

AGRICULTURE

Alexander, R. E. L 1910-1930, P 1930-5
Geddes, H. J. L 1930-3
Donald, H. P. A/L 1933-4
McLean J. W. A/L 1934-5 (Ref. Veterinary)

Bevin, R. H. S/L 1938-49
Ward, F. L. A/L 1946-50
Cooke, M. B. L 1946-9 (Ref. Farm Management)

VETERINARY SCIENCE

Hill, T. P/T/L 1882-8
Ivey, W. E. 1888-92
Bayne, J. 1894-1900
Charlton, J. R. 1900
Colebatch, W. J. L 1901-07
Johnson, A. A. 1915-18, 1921-2, 1926
Taylor, A. L 1907-22 (World War I Service 1914-18)
Barry, W. E. 1916-17
Stafford, J. L 1922-6, 1936
Murray, R. R. H. L 1927-9
Leslie, A. 1930-5
Robinson, W. D. L 1944-5
Ewer, T. K. S/L 1946-7
Taylor, B. A. S/L 1948

Kyle, Miss A. L 1951-7
Claxton, J. H. R/A 1955-60
Hopkirk, C. S. M. S/L 1959, R/O 1964-71
Lawson, B. M. T 1960, T/O 1970-
Jagusch, K. T. R/A 1960-3
(Ref. Animal Science)
Brewer, D. N. S/L 1965-72
Hollick, J. G. Ins 1968, S/Ins 1970-
Glover, A. F. S/L 1972-5
Gabb, R. G. S/L 1972-
Evans, Miss M. J. A/L 1972-
Barrell, G. K. S/L 1975-
Ross, A. D. L 1976, S/L 1977

WOOL SCIENCE

Morrow, T. Inst. 1925-36, L 1937-44
Sidey, D. J. L 1936-9
McMahon, P. R. L 1941-6 (D.S.I.R.)
Henderson, A. E. L 1945, S/L 1949 R 1960, P 1963-
Drake, J. H. Inst. 1946-51
Stewart, D. P/T/Ins 1945-52

Simpson, J. C. Inst. 1951, L 1966-
Hedge, Miss A. T. 1952-9
Fraser, I. E. B. R/O 1954-62
Aitken, F. J. T 1959-65
Tinnock, B. M. P/T/Inst 1962, Inst. 1970-
Wilkinson, B. S/L 1977-
THE SEED THEY SOWED

AGRICULTURAL ECONOMICS/MARKETING

Holmes, G. A. L 1928
Weston, I. W. L 1928, S/L 1956-60
Wills, E. P. P/T/L (Law), 1938-65
Philpott, B. P. P 1959-70
Ward, J. T. S/L 1960-5
Charlton, Mrs M. ShlTy 1961-76
Court, R. H. R/O 1962-6
Woods, née Matheson, Mrs M. R/O 1962-70

AGRICULTURAL ECONOMICS RESEARCH UNIT

Philpott, B. P. Dir 1959-70
Stewart, J. D. (see Farm Manag.) Dir 1970-4
Townley, R. J. R/O 1963, L 1965, S/L 1969-70
Frampton, A. R. R/O 1964-8

FARM MANAGEMENT/VALUATION

Flay, A. H. F/O 1929, L S/L As/P 1950-64
Rogers, M. H. R/A 1932, F/O 1934-5
Tebb, C. P. F/O 1935 (Ref. Farm Overseers)
Pyne, J. F/O 1936-40
Garrett, H. E. L (Active War service 1941-4) L 1945, S/L 1950, R 1962-4), (See Animal Husbandry)
Schapper, H. P. L 1944-51
McGloin, P. H. F/O 1946-52, A/L 1953-4
Oldfield, J. H. F/O 1947-50, A/L 1951-2 (See Farm Overseers)
Cooke, M. B. L 1949, S/L 1957-69 (Ref. Agric.)
Stewart, J. D. A/L 1951, L 1954, S/L 1960, P 1965-74
Marshall, J. G. F/O 1953-6
Ryde, B. J. P. L 1957, S/L 1966-69
Guise, J. W. B. F/O 1958-64
Nuthall P. L. R/A 1963, A/L 1965, L 1967-8, S/L 1972-

AGRICULTURAL ENGINEERING: SURVEYING

Thomas, F. G. L 1919-22
Calder, J. W. L 1922 (See Field Husbandry)
Fougere, R. A. Inst. 1930-5 (See Farm Overseers)

James, R. L 1930-8
Powell, E. G. S. L 1939-43
Riddolls, A. W. L 1944, S/L and HOD 1949, R 1960-3
Baird, W. C. Inst. 1945-67
APPENDIX

King, D. L. T 1946, T/O 1960, Inst. 1963-
Pierson, R. A. T 1946-65, Inst. 1966-7
Cochrane, R. H. L 1949-52
Lindsay, G. G. L 1953, S/L 1965-
Garden, G. M. A/L 1964
(Ref. N.Z.A.E.I.)
Gibbs, G. S. Inst. 1962-70 (Ref. Services)
Douglass, B. L 1962, S/L (Soil Cons.) 1966– (Ref. Refectory/Halls)
Burton, J. R. P 1965-70
Boughton, W. C. S/L 1967-9

N.Z. AGRICULTURAL ENGINEERING INSTITUTE

Burton, J. R. Dir 1965-70
Garden, G. M. R/O 1964, S/R/O 1972-
Dunn, J. S. R/O 1965, Pn.R/O 1970-
Watson, E. M. R/O 1965, Dep.Dir 1970–, Dir 1977-
Harwood, R. J. T 1965, T/O 1968-
Gibbs R. N. T 1966, T/O 1971-
Hager, T. D. R/O 1966, S/R/O 1969-
Gilbert, G. R. Inform/O 1968-
Humphries, K. R. T 1968, T/O 1970-
Van Boven, J. J. T 1968-
Chapman, J. A. T 1968-
Painter, D. J. R/O 1969, SnrR/O 1973-
Lees, F. C. F. T 1969-
Lees, D. M. T 1970-
Le Quesne, P. T 1970-6
Davies, G. R. R/O 1970, SnrR/O 1973-
Stolp, J. T 1970-

APPLIED MATHEMATICS—BOOKKEEPING

Clarke, E. M. L 1881-4
Bingham, T. L 1884-92
Adams, C. E. L 1892-6
Farr, C. C. L 1896-7
Hilgendorf, F. W. L 1903-09 (See Field Husbandry)
Guerin, M. L 1897-03
Bartram, J. A. L 1909-11
Budd, H. M. L 1911-13
Foster, C. W. L 1913-5
Mackenzie, G. S. L 1913-5
Fry, 1914-5
Slocombe, L 1915-9
Thomas, F. G. L. L 1919-22 (See Engineering)

Ballisat, D. J. Inst. 1967-
Short, R. P. Inst. 1967-
Calvert, I. L 1968, S/L 1969-
Judd, C. B. L 1969, S/L 1971-3 (See Fm. Mgmt)
Darch, E. Inst. 1969-
McKenzie, D. W. L 1970, S/L 1974-
Gifford, T. R. T 1970, T/O 1977-
Ward, G. T. P 1971-
Van’t Woudt, B. D. R 1972-
Chilcott, R. D. S/L 1972
Cherry, N. J. L 1974-
Davies, T. R. H. L 1975-
Huber, D. G. S/L 1975, R 1977-

* Attached to Plant Science Dept.
THE SEED THEY SOWED

Mountier, N. S. Dir 1976-
Emerson, Miss E. E. Prog 1967-71
Arnst, Mrs B. R. Op 1969-72, 1975-
Brown, M. S. C. Prog 1972-
Thompson, Miss M. Op. 1973-
Gregg, G. G. Prog 1975, S/T/O 1977-

COMPUTER

Mountier, N. S.
Emerson, Miss E. E.
Arnst, Mrs B. R.
Brown, M. S.
Gregg, G. G.

MICROBIOLOGY

Calder, J. W. L 1927-35 (See Field Husbandry Engin. Maths.)
Blair, I. D. L 1936-9, (Sp. duties war service 1941-4), L 1945-7, S/L 1948, HOD 1950, R 1960-74
McLay, Miss J. T 1945-7
Wenham, H. T. A/L 1948-50
Smith, R. T 1945-9
Mulcock, A. P. A/L 1950, L 1956, S/L 1960, R 1967, P 1974-

Horn (née Fenwick) Mrs P. R/A 1959-63
Reay, Miss C. A. T 1966-9, R/A 1973-74
Noonan, M. J. R/F 1966-7, L 1971-
McNabb, R. F. R. S/L (Plant Path) 1968-72
Close, R. C. S/L (Plant Path) 1973, R 1977-
Sumner, J. L. S/L 1973-

BIOCHEMISTRY

Wright, D. G. S/L 1961-4
Wicken, A. J. L 1962, S/L 1965-7
Allott, Miss C. F. T 1962-7
Meredith, P. P/T/L 1964-6
Howard, B. H. P 1964-
Reanney, D. C. L 1967, S/L 1973-
Marsh, S. C. N. T 1967-75

Yandle, T. G. R/A 1969-
Bickerstaff, E. R. S/L 1973-74
Osborne, G. O. (See Entomology) S/L 1976-
Barnes, M. F. L 1970, S/L 1976-
Clarke, D. G. A/L 1971, L 1972-
Dodds, Mrs M. M. T 1971-

AGRICULTURAL ZOOLOGY—ENTOMOLOGY

Morrison, L. P/T/L 1931, L 1936, S/L & HOD 1948-60
Dick, R. D. L 1939-40 (Second D.S.I.R.)
McLeod, G. B. R/O 1940-1, (Active War service 1941-3) (See Rural Ed.)
Doull, K. M. L 1949-55
Dumbleton, L. J. S/L 1955-7
Stenhouse, D. L 1958-60
Pottinger, R. P. A/L 1960, S/L 1964, R 1971-4
Williams, G. R. L 1960-5
Harrison, R. A. S/L 1961, R 1965, P 1969-

McPherson (née Blakemore) Mrs M. T. 1961-71
Welsh, R. D. T 1968-74
Osborne, G. O. R/O 1967, S/L 1970-6 (See Biochem.)
Campbell, Mrs P. A. A/L 1968-72
Emerson, R. M. L 1968, S/L 1973-74
Trewitt, D. E. D. Steward 1968-
Scott, R. R. L 1970, S/L 1976-
Boyd, J. F. T 1970-
Chapman, R. B. R/A 1971, Dem 1975-
Waller, J. B. S/L 1973-
Blank, R. H. T/F 1973-
Penman, D. R. L 1973-
Ferro, D. N. L 1974-

NATURAL SCIENCE/AGRIC. BOTANY/FIELD HUSBANDRY

Hutton, F. W. P/T/L 1880-1
Carrington, N. T. 1880-1
Kirk, T. L 1881-2, 1884
Lendenfeld, R. Von L 1883
Wainwright, 1883
Wilkinson, E. 1884-92
Harlow, P. L 1892-5
Lillie, C. O. L 1896-7

Hilgendorf, F. W. L 1898-1901, 1903, P 1930-6
Guerin, M. L 1901-3
Foweraker, C. E. P/T/L 1922
Neal, N. P. P/T/L 1922
Calder, J. W. L 1927-49, As/P 1950, P 1955-8
Blair, I. D. L 1936-9 (See Microbiol.)
APPENDIX

Frankel, O. H. Hon/L (Genetics) 1937-53
Hadfield, J. W. Hon/L (Agronomy) 1937-50
Paton, G. A/L 1943-5
Iversen, C. E. L 1947, S/L 1948, R 1960-7 (See Plant Sci.)
Malaquin, D. O. T 1948-60 (See Farm Workers)
Veale, J. A. L 1951, S/L 1958-60
Meijer, G. T. 1956- (See Plant Sci.)
White, J. G. H. A/L 1956-8 (See Plant Sci.)
French, T. P. L 1958-9

PLANT SCIENCE

Langer, R. H. M. P 1959-
Meijer, G. T 1956, T/O 1968- (See Field Husbandry)
Iversen, C. E. R 1960-7 (See Field Husb.)
Morrison, T. M. S/L 1960, R 1965-6 (Ref. Horticulture)
Daly, G. T. A/L 1960-2, L 1965, S/L 1970-
Steans, G. F. T 1963-
Fautrier, A. G. A/L 1964, L 1967-
Mountier, N. S. S/L 1965, R (Biom) 1970- (Ref. Computer)
Smith, B. E. T 1965-
Dougherty, C. T. L 1966-9, S/L 1970-
Edmonds, A. S. L 1966-71
Moir, R. B. F. T 1966, Lab Steward 1974- (Ref. Farm)
Moss, Mrs J. B. Dem 1966-70
Smetham, M. L. L 1967, S/L 1971-
Love, B. G. L 1970, S/L (Stats) 1974-
Field, R. J. L 1970, S/L 1976-
Scott, W. R. L 1970-
Jones, A. V. T 1970-
Lucas, R. J. T/L 1971, L (Expt.) 1974-
Mobley, M. C. A/L 1972, L (Stats) 1974-
Horn, Mrs P. E. Dem 1972- (Ref. Microbio)
Hill, G. D. L 1972, S/L 1977-
Jarvis, P. L 1972, S/L 1974-

HORTICULTURE LANDSCAPE AND PARKS

Abbreviations: G—Gardener  F/M—Foreman/Mgr  Gds—Grounds

1. GROUNDS/GARDENING

Smith, D. F/M 1886-98
Symes, W. F/M 1899-1901
Kenworthy, T. F/M 1901
Easterbrook, R. F/M 1902-09
Packham, J. F/M 1910-15
Cameron, D. F/M 1915-17
Fuller, H. F/M 1917-21
Cone, F. W. G 1920-2
Keelty, J. F/M 1922-5
Russell, J. F/M 1929-45
Gillatt, G. G 1929-39, 1945-50
Russell, V. I. G 1935 (Active War service 40-5) 51
Bulman, R. S. F 1945-55
Armstrong, J. G 1949-64
Bonis, I. F. F 1951-60
Bosch, H. Vanden G 1953-61
Altwood, R. A. G 1955-60
Taylor, G. G 1956-61
Lawrence, P. S. G 1958-63
Bell, D. C. F 1960-7
Colenso, A. G 1960-70
Kelly, P. J. G 1960-9

Toon, W. J. G 1963-
Wielstra, D. G 1965-76
Fox, J. P. U/M 1968-
de Graaff, J. L. F/M 1973-

2. ACADEMIC AND INSTRUCTION

Lothian, T. R. N. L (in chg. Dept.) 1944-7
Henderson, G. Ins. 1946-7
Taylor, J. O. P/T/L 1955-65, S/L 1972- (Parks and Reserves)
Glazebrook, J. H. L 1949-62
Craddock, S. A. Inst. 1955-
Challenger, S. C. L 1956, S/L 1965, R 1970-
Thiele, G. F. L 1962, S/L 1966-
Steans, G. F. T 1963, T/O 1977-
Morrison, T. M. P 1966- (Ref. Plant Science)
Crowder, R. A. L 1966, S/L 1974-
Boffa, F. D. L 1969-72
THE SEED THEY SOWED

Jackson, D. I. L 1968, S/L 1969, R 1972-
Thomas, M. B. L 1971, S/L 1977-
Gill, H. L 1972-6
Stevens, R. B. A/L 1974, L 1977-

LANDSCAPE ARCHITECTURE

Challenger, S. C. (Ref. Horticulture)
Boffa, F. D. L 1969-72
Mason, Mrs S. M. 1972-5
Cole, M. J. L 1975-
Bennett, E. M. S/L 1975-
Woodhouse, Miss J. Tutor 1975-
Chapman, Miss M. E. L/A 1975-

SOIL SCIENCE, CHEMISTRY PHYSICS

Von Haast, J. P/T/L 1880-1
Barkas, F. 1881-3
Gray, G. L 1883-1915
Taylor, C. T 1892-7
Mellor, J. W. 1897-9
Wild, L. J. L 1915-20
Purdie, W. C. L 1921-2
Scott, M. J. L 1922-36 (Ref. An. Husb.)
Sidey, D. J. L 1926-35 (Ref. Wool)
Franklin, M. C. L 1930-1, 1934 (An. Sci.)
Hullett, E. W. L 1931-3
Burns, M. M. L 1937-48
Hood, N. T 1940-7
Bartrum, Miss P. T/O 1941-6
Orchiston, H. D. L 1947-58
Walker, T. W. P 1952-8, 1960-
Edmunds, A. R. L (Physics) 1958-63
Horn, A. H. Anal/Chem. Services 1958-
Campbell, A. S. A/L 1959, L 1960
(Chem.), S/L 1969- (Soils)
McPherson, R. J. T 1960, T/O 1972-
Heine, R. W. L (Physics) 1963, S/L 1969-
Baker, R. T. A/L 1965, L and S/L 1968-75
Adams, J. A. R/F 1967-9, L 1976-
Cutler, E. J. B. S/L 1967-
Livingstone, L. G. A/L 1968, L 1972-
Tonkin, P. J. L 1969, S/L 1976-
Howarth, D. T. L/Chem 1970-4
Ludecke, T. E. S/L 1970-
Goh, K. M. S/L 1971-
Edmeades, D. C. R/F 1973-6
Young, A. W. A/L 1973, L 1976-
Wilson, M. A. L 1974-

RURAL EDUCATION
(Rural Development & Extension Centre)

McCaskill, L. W. L 1944, S/L 1949, As/p 1950-61
Scott, T. H. A/L 1947
Botting, H. L. A/L 1948-52
Salmon, Miss S. Sh/Ty 1951-55
Snell, R. F. A/L 1951-2
Broadhead, B. G. A/L 1952-4
Lang, Miss M. P. A/L 1954-6
Bourne, Miss R. M. A/L 1958-60
Blake, Miss P. A. Sh/Ty 1963-77
Cant, R. G. 1966-7
Lyall, G. R. Tutor 1966-75
 Mangin, E. R. Audio-Visual Aids 1969-
Goundrill, R. J. Photo/T 1971-76 (Audio-Visual Aids)

LIBRARY

Brown, L. L/A 1931-4
Muff, D. R. Asst/L 1936, Lib. 1938 (active war service 1940-5), A/L 1966
Welsh, Mrs A. M. Actg/L 1943-5
O’Brien, Miss J. L/A 1940-3
Frampton, J. A. Lib. 1959-
Priest (nee Houison) Mrs M. L/A 1960-6
Thompson (nee Holden) Mrs M. A. L/A 1965-73
Harris, Miss B. E. Asst/L 1966, HOD 1973-4
Lefever, Mrs G. L/A 1967-74, S/L/A 1975, A/L 1977-

DIRECTORS, ASSISTANT DIRECTORS, PRINCIPALS, VICE-PRINCIPALS

Ivey, W. E. Dir 1878-92
Gray, G. Actg Dir 1892-3, 1901, 1908
Bayne, J. Dir 1894-1901
Lowrie, W. Dir 1901-08
Alexander, R. E. Dir 1908-35, P 1930-5
Hilgendorf, F. W. Act. Dir 1936

Hudson, E. R. Dir and P 1936-52
Calder, J. W. Asst. Dir 1936-58
Burns, M. M. Principal 1952-74
Coop, I. E. Vice-Principal 1962-78
Stewart, J. D. Principal 1974-

TUSSOCK GRASSLANDS & MOUNTAIN LANDS INSTITUTE

McCaskill, L. W. Dir 1961-5
Hughes, J. G. R/O 1962, Sn.R/O 1969-75
Hayward, J. A. R/O 1964, Sn.R/O 1972-
Adams, S. N. Dir 1965-8

Barton, J. H. T 1966-70
White, E. G. R/O 1968, Sn.R/O 1973-
O’Connor, K. F. Dir & P 1969-72
Costello, E. J. F/O 1970-1, 1972-
Fryer, I. R. T 1971-2, 1976-
Kreger, W. G. Journalist 1975-
Kerr, I. G. C. Sn.R/O 1976-

ENVIRONMENTAL SCIENCES

Corbett, P. S. Dir & P 1974-8

Pearson, R. G. R/F 1975-

RANGE MANAGEMENT

O’Connor, K. F. P 1969-

Ackley, K. A. S/L 1973-
APPENDIX 4
Premier Awards

BLEDISLOE MEDALLISTS

1930 H. A. KNIGHT (1880-82), Certif.Agric., Racecourse Hill, Darfield. Foundation student, developed Racecourse Hill, one of the largest farms in North Canterbury, growing in some years up to 1600 acres of wheat, and pioneer in use of solid straw Tuscan variety. Stud stock breeder, especially Southdown and English Leicester sheep; also owner-breeder of Ballymena and Limerick, two famous and highly successful track horses. Company director; chairman Malvern County for 25 years; member C.A.C. Board of Governors over 30 years and Chairman 1915-26. Community and College benefactor.


1933 No award.


1937 R. J. LOW (1910-12), Dip.Agr., Highbank, Rakaia. Farmed 2000 acres Kaikoura property. World War I service. In 1918 bought his Highbank farm of 360 acres and, in addition to mixed farming developed pedigreed English and Border Leicester and Southdown sheep, as well as Shorthorn cattle and Clydesdale horses. Active in farmers' and Young Farmers' affairs.


1939 H. J. ANDREW (1913-14), Maheno, North Otago. Outstanding breeding success with Southdown sheep (Punchbowl Stud) and long service with farming organisations. Past President Nth Otago A. & P. Assn; Southdown Sheep Society; Council N.Z. Sheepbreeders' Assn.


1941 ALEXANDER NATHAN 1886-87), London. Farmed in Manawatu for some years and was prominent in development of the dairy industry. Chairman of Directors, Glaxo Laboratories, London, and connected with that organisation's research in vitamins and production of infant foods.


1943 W. A. YARDLEY (1910-12), Dip.Agr., Heriot, Otago. Developed Keppoch Estate as an outstanding farm, including great success in sheep breeding; subsequently followed by son (1940-1) and grandson (1972-4) as college students.

1944 L. W. McCASKILL (1918-20) C.B.E., Dip.Agr., M.Agr.Sc., F.N.Z.I.A.S., Christchurch. School teaching Wanganui and Hawera, and Instructor Auckland Education Board, Lecturer, Dunedin and Christchurch Training Colleges; Associate Professor, Rural Education at Lincoln. In 1939 visited U.K. and U.S.A. developed interest in land conservation. One of the country's leading naturalists and has done notable service in furthering general interest and study of native flora and fauna through Forest and Bird Society, Catchment Board and National Parks authority. Subsequently foundation Director, Tussock Grasslands & Mountainlands Inst. Author of several books.


1948 R. A. CALDER (1922-23), Dip.Agr., B.Agr., B.Sc. (Posthumous award.) Late Director Agronomy Division, Department of Scientific & Industrial Research, Lincoln. Department of Agriculture, South Canterbury and Plant Research Station, Palmerston North. Studied plant breeding abroad on two visits. Valuable crop improvement work on oats, peas, lucerne and brassicas and supervised programmes of pure seed production and published papers on crop improvement.

1949 W. C. STAFFORD (1924-26), Dip.Agr., Department of Agriculture, Timaru. General farming, then Department of Agriculture service in Blenheim, Christchurch, and finally Timaru from 1931-52; active in agricultural development of South Canterbury; agricultural and advisory work highly esteemed by farming community—notably pasture improvement methods, seed production and certification, potatoes and linenflax. Initiated irrigation field work on Levels and Winchmore schemes. Retired to own property of 450 acres at Fairview, Timaru.

1950 No award.

1951 R. J. LLOYD HAMMOND (1907-08), Rata, Rangitikei. Sheep and dairy farming in Rangitikei, showing remarkable production increase on his property. Dairy factory director and chairman—also National Dairy Association. Service with Federated Farmers, including Dominion Council; Rangitikei County Council and several primary producers' companies.

1952 P. G. STEVENS (1920-22), Dip.Agr., Canterbury Agricultural College, Lincoln. First award to a serving member of College staff. Early teaching Ashburton and Feilding High School (in charge of animal husbandry) with success in Royal Shows, purebred livestock. Associated with Pig Improvement Schemes and formation of District Pig Councils and President (1937) Ryeland Sheep Society. As senior lecturer, Animal Husbandry, at Lincoln, renowned within and beyond the College for lecture courses. Initiated pig and bacon competitions; Corriedale merit sire test, and supervised management of College sheep and pigs. Author of scientific papers and of the biographical study John Grigg, of Long Beach, and James Little, of Hui Hui.
1953 A. B. MARTIN (1911-13), Dip.Agr., Martinborough. World War I service, commissioned in Royal Field Artillery. Farmed property of 2500 acres which, after improvements effected by regrassing, draining, topdressing, carried 3000 breeding ewes, 1500 dry sheep, 600 cattle, including 200 breeding cows. Active local body service in Wairarapa and World War II Rehabilitation service.

1954 N. P. NEAL (1916-19), Dip.Agr., B.Agr., B.Sc., Ph.D., University of Wisconsin, U.S.A. First award to an old student in recognition of work carried out beyond New Zealand. At the University of Wisconsin since 1924; Ph.D. degree and from research assistant rose to Professor of Agronomy and Genetics. Development of hybrid corn was his main work; services in an advisory capacity employed in Uruguay, Morocco and Algeria.

1955 J. W. CALDER (1918-20), Dip.Agr., B.Agr., M.Sc. Lecturer, Assistant Director, Associate Professor, Professor Agricultural Botany, Canterbury Agricultural College. (Index references.)

1956 No award.

1957 No award.


1962 N. M. PAULSEN (1914-16) Dip.Agr., M.A., Napier. After World 1 service took over management of father's property involving over 3000 acres at Takapau. In 30 years brought this into high production with annual lamb drafts over 4000. Served on Waipawa County Council 27 years, 15 years as chairman; Napier Harbour Board 22 years; board of Dannevirke H.S. 12 years.

1963 A. H. FLAY (1925-7) O.B.E., B.Agr., B.Sc., F.N.Z.I.V., Christchurch. Long service on college staff retiring as Associate-Professor to Head of Department of Farm Management; in this work developed a pattern of farm management instruction for students and advice to farmers that served particularly well in his time. Fellow N.Z. Inst. of Valuers; member Valuers Registration Board; Fellow N.Z. Inst. Agric. Science. For five years after retirement in 1958 directed a World Bank pasture development programme in Uruguay.
THE SEED THEY SOWED


1965 R. THAINE (1924-5) Dip.Agr., MSA (Sask.), Ph.D. (Melb.), England. Starting as a farm cadet completed the agric. diploma, but was drawn to a career in science, obtaining then his Canadian and Australian degrees. During Ph.D. studies he was stricken with poliomyelitis and since 1957 has been confined to a wheelchair. Despite this hardship he continued his research and aided by his wife, produced scientific papers of high merit, in the sphere of plant physiology, notably aspects of translocation in plants. Since graduation worked at Oxford University and then joined staff of the Grasslands Research Institute, Hurley, Surrey, England. Received the Bledisloe Medal in person when on a return visit in 1965.

1966 J. BRUCE BROWN (1925-7) Dip.Agr. Wellington. After farming for a few years joined Lands and Survey Department in 1933, then (1936) became a Farm Appraiser, State Advances Corporation. In 1948 rejoined the Lands Department and was successively Chief Fields Inspector, Assistant Fields Director, Fields Director and Director of Marginal Lands, Assistant Director-General. From 1959 until retirement head of the Valuation Department as Valuer-General, chairman, Valuers’ Registration Board; member Land Settlement Board, National Provident Fund Board, Board of Maori Affairs and Investment Boards of the Public Trust Office and Govt. Life Insurance. Since retirement has been chairman of the N.Z. Committee of the relief organisation CORSO, travelling widely abroad also as a United Nations adviser.


1968 E. CAMERON (1914-15) (Course uncompleted on account of World War 1 service.) Onewhero, South Auckland. On returning from World War 1 developed two properties requiring re-grassing from deteriorated bush-burn. For 40 years was a consistent and highly successful breeder of the Hallmark Stud animals—Romney and Southdown sheep and Aberdeen Angus cattle. His attainments as a show exhibitor throughout the North Island were quite outstanding. Former member council Southdown Sheep Society.

1969 A. A. COPLAND (1935-37) B.Agr.Sc. Cricket Malherbie, Somerset. Joined N.Z. Department Agriculture in 1938 and worked on irrigation projects in South Canterbury. In 1942 was among six officers of the Department seconded to the British Ministry of Agriculture to assist in wartime food production projects. In 1943 this work also included properties in Somerset which Lord Beaverbrook controlled. Derelict farms were made to produce to the limit and in the post-war period the venture under Copland’s
management became Cricket Malherbie Ltd. of 2500 acres 200 employees and an annual turnover (1969) of nearly £2m. The organisation produces vast quantities of produce and also markets direct to consumers. Quality of stock and success in breed shows has also been a feature, but overall the management expertise has become widely known.

1970 H. C. SMITH (1947-49) M.Agr.Sc. Ph.D. (Cantab), FNZIAS, DSIR Lincoln. Joined Plant Diseases Division DSIR and later did post-graduate research at Cambridge University and in the Plant Research Institute, Canada. In 1964 became a Divisional Director in DSIR, heading the Crop Research Division, Lincoln. As a plant pathologist completed outstanding original work and published research papers that have received international attention. He made original discoveries regarding aspects of some diseases in brassica crops (dry rot) and wheat (yellow dwarf virus). As Director Crop Research Division, he leads the country’s breeding programme on field crops. Worked on secondment on crop problems in Samoa and was the initial director of a plant research centre developed in Singapore under N.Z. Govt. sponsorship. Past president N.Z. Inst. Agric. Science.


1972 A. HENDERSON (1932-3) Dip.Agr. Winton, Southland. Despite long association between the college and Southland farmers, this was the first award of the Medal to a Southland-based old student. He has been farming in the manner characteristic of Southland plains farms, where during the past 40 years enormous increases in productivity have been attained: an innovator in respect to aspects of cocksfoot seed and wheat production; also in bulk-handling of seed. Served 5 years on the National Research Advisory Council and has ‘directorships of prominent Southland companies. Appointed to the Lincoln College Council by Federated Farmers, Southland, served continuously for 26 years.

1973 A. C. WRIGHT (1934-5) Dip.Agr. Wai-Kimihia, Dunsandel. Commenced farming through management for some years of well-known Canterbury properties, until starting on his own account in 1948. Developed a 1700 acre low fertility light land farm to outstanding levels of production. Prominent in Federated Farmers (Canterbury Provincial President). In 1966 elected as a producer representative on the N.Z. Meat Board and has served continuously including chairmanship of several board committees: also served on investigatory and trade promotion missions in Japan, Peru, and countries of the Middle East. Former Lincoln College Council member.

THE SEED THEY SOWED


GOLD MEDALLISTS

Diploma of Agriculture

1905 J. C. Colebatch
1906 W. J. Balsillie
1907 G. W. R. Osborne, Leeston
1908 E. N. Grimwade, Auckland
1909 E. McDougall, Oamaru
1910 W. S. Hill, Auckland
1911 J. Martin, Martinborough
1912 A. D. Anderson, Invercargill
1913 J. A. McQueen, Invercargill
1914 R. W. Hawke, Invercargill
1915 C. N. Allen, Dunedin
1916 N. M. Paulsen, Tekapau
1917 O. C. Stephens, Dunedin
1918 W. J. Glasgow, Rangiora
1919 R. O. MacDougall, Bay of Plenty

1920 P. W. Smallfield, Auckland
1921 J. A. Bell, Timaru
1922 C. J. Hamblyn, New Plymouth
1923 G. A. Holmes, Dunedin
1924 D. J. Sidey, Hawarden
1925 J. E. Bell, Wellington
1926 A. H. Flay, Te Awamutu
1927 J. B. Brown, Lowcliff
1928 H. J. Geddes, Waimate
1929 J. R. Upton, Ashburton
1930 C. P. Tebb, England
1931 M. H. Rogers, Timaru
1932 W. H. Cowper, Dannevirke
1933 D. T. Herrick, Hastings
1934 P. McLean, Napier
1935 A. C. Wright, Christchurch
### Diploma Valuation and Farm Management

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<th>Year</th>
<th>Name and Location</th>
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<tr>
<td>1938</td>
<td>J. N. Hodgson, Palmerston North, and W. G. Hadley, Christchurch</td>
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<tr>
<td>1939</td>
<td>G. M. Davies, Dunedin</td>
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<td>1940</td>
<td>N. Watson, Paraparaumu</td>
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<td>1941</td>
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<td>1942</td>
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<td>1943</td>
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<td>1944</td>
<td>D. W. McLachlan, Auckland</td>
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<td>1945</td>
<td>F. L. Ward</td>
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<td>1946</td>
<td>L. M. Sole</td>
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<td>1947</td>
<td>D. M. Glenday, Te Kuiti</td>
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<tr>
<td>1948</td>
<td>M. R. Mander</td>
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<tr>
<td>1949</td>
<td>A. C. Watson</td>
</tr>
<tr>
<td>1950</td>
<td>J. D. McNaught, New Plymouth</td>
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<tr>
<td>1951</td>
<td>A. C. Warner, Milford</td>
</tr>
<tr>
<td>1952</td>
<td>G. Robertson, Christchurch, and P. Tierney, Wellington</td>
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<td>1953</td>
<td>W. B. Purvis, Invercargill</td>
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<td>1954</td>
<td>P. M. Falconer, Dunedin</td>
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### Diploma of Horticulture

#### S. C. Harris Memorial Cup

<table>
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<td>1954</td>
<td>R. V. Kinnaird, Alexandra</td>
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<td>1955</td>
<td>A. W. Naish, Kakanui</td>
</tr>
<tr>
<td>1956</td>
<td>F. A. Wilkinson, Waipu</td>
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<tr>
<td>1957</td>
<td>Isabella Attwood, Lincoln</td>
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<tr>
<td>1958</td>
<td>R. D. Gay, Christchurch</td>
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* Change-over year—two courses concurrent.
1963 R. I. Hepburn, Whakatane
1964 Marilyn D. Wright, Christchurch
1965 J. S. McCully, Temuka
1966 Jane Wynn-Williams, Christchurch
1967 No award
1968 R. J. Baxter, Christchurch
1969 Sally M. Newton, Rangiora

1970 Deane H. Bright, Wellington
1971 No award
1972 P. H. Atkins, Auckland, and J. N. Marsh, Christchurch
1973 M. L. Steven, Christchurch
1975 D. E. Warren, Kerikeri
1976 S. L. Donald, Takapau

SENIOR SCHOLARS IN AGRICULTURE
(University of New Zealand)

Placement

1939 D. V. Gordon Chemical company executive
1940 R. F. Fryer Farmer, Mid-Canterbury
1947 A. I. Iggo Prof. Animal Physiology, Edinburgh University
1947 J. A. Pollok S/L Soil Science, Massey University
1948 J. S. Lyall Farmer, Sth. Canterbury
1949 L. T. Evans Chief, Bureau Plant Industry CSIRO, Canberra A.C.T.
1950 R. A. Milne FAO, Ministry of Agriculture
1951 J. K. Templeton Scientist, Rubber Res. Centre, Thailand
1952 B. B. Watts Registrar, Agric. Chemicals Board
1954 J. H. G. White Reader in Agronomy, Lincoln College
1955 R. K. deCastro Farmer (Horticulture), Blenheim
1956 G. M. Neutze A.N.U. Canberra A.C.T.
1957 M. E. Perera Sri Lanka
1960 L. R. Kingsbury Farmer, Mid-Canterbury
1961 C. T. Dougherty S/L Plant Science, Lincoln College

(University Grants Committee)

1962 B. A. Scoggins Animal Physiologist, Univ. of Melbourne
1963 A. J. Warrington Soil and Water Div. M.O.W.
1964 J. M. Keoghman Univ. of Guelph. Canada
1965 N. S. Mackenzie Miss G. F. Kellock Entomologist, Ministry of Agric.
P. V. Rattray Ruakura Res. Centre, M.A.F.
R. A. Bonifant Merchant Bank Wellington
F. K. Y. Liew Dept. of Agric. Sabah
1968 L. J. Davies Plant Physiol. DN DSIR
J. L. Palmer
1970 P. F. Fennessy
J. M. King
1971 I. R. Gunn
G. C. Waghorn
APPENDIX

1972 Miss M. J. Evans  Post grad. research Lincoln College
   Miss C. J. Cooper
   C. W. Ross
   G. W. Sheath
   A. W. Young
1973 D. W. Brash  Scientist M.A.F. Alexandra
   Chin Shih Foong
1974 Lee Sing Kong
   Miss L. K. Pope
   W. H. Whitaker
1975 B.A. Brook
   R. J. Haynes
   Miss M. E. Wastney

University Grants Committee Post-graduate Scholarships

1964 I. T. Forrester
1965 J. M. Keoghan, D. A. Heatherbell
1966 W. D. Grant
1967 D. D. Every, K. Young, C. J. McKenzie
1968 U. Benecke
1969 A. R. Faulkner
1970 Chua Ching Geh
1971 Miss M. J. E. Evans, D. J. Farr, R. A. Bonifant, D. R. Maidment
1972 P. W. Harvey, Teh Paik Beng
1973 Chow Boi Yee, A. E. D. Lewis, G. M. Smart, P. G. Bushnell, P. R. Joyce, P. J. Hocking
1974 Sing Kong Lee, Miss B. McGrath, Piang Siong Teng
1975 Miss M. E. Wastney, W. J. Kelly
1976 R. J. Haynes, G. A. Wall

MacMillan Brown Agricultural Research Scholars
(University of New Zealand)

1949 A. I. Iggo, M.Agr.Sc. to Edinburgh Univ. Ph.D. and Chair Animal Physiology

Nuffield Foundation Fellows in Natural Science


Rhodes Scholars at Oxford University

1940 H. E. Garrett, M.Agr.Sc. to Oriell Coll. B.Litt, then As/P, F.Manag. Lincoln College (deferred to 1947 on account war service 1941-4)
1957 G. M. Neutze, M.Ag.Sc. to University and Nuffield Coll. D.Phil. Head Urban Res. Unit. ANU Canberra

NUFFIELD FARMING SCHOLARSHIP

1953 J. B. Gordon, Heriot, Otago. (1941 course terminated by war service)
   T.D.J. Holderness, Gebbies Valley, Canterbury (Dip.Agr. 1938-9)
1964 P. G. Morrison, Sheffield, Canterbury (Intensive 1953)
1967 J. O. Acland, Mt. Peel, South Canterbury (Intensive 1956)
1970 P. H. Elworthy, Craigmore, South Canterbury (Intensive 1955)
   D. G. Watson, Sandy Knolls, Canterbury (Intensive 1950)
1974 L. Kingsbury, Rakaia, Mid-Canterbury (M.Agr.Sc. 1956-60)
## APPENDIX 5

### Degrees, Certificates, Diplomas Conferred

Inclusive of 1975 classes (1976 Graduation)

<table>
<thead>
<tr>
<th>Degree or Certificate</th>
<th>Year</th>
<th>Number</th>
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<tbody>
<tr>
<td>Certificate of Agriculture</td>
<td>1882-94</td>
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<tr>
<td>Diploma of Agriculture</td>
<td>1895-</td>
<td>2443</td>
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<tr>
<td>Diploma Valuation &amp; Farm Management</td>
<td>1939-75</td>
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<td>Diploma of Horticulture</td>
<td>1946-</td>
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<td>Diploma of Agricultural Engineering</td>
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<tr>
<td>Diploma of Parks &amp; Reserves Admin.</td>
<td>1972-</td>
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<tr>
<td>Intensive and Certificate in Agriculture</td>
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<td>Three months (Rehabilitation) Certificate</td>
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<tr>
<td>Certificate in Wool</td>
<td>1944-</td>
<td>817</td>
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<tr>
<td>Certificate in Meat Inspection</td>
<td>1964-</td>
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<tr>
<td>Advanced Certificate Meat Inspection</td>
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<tr>
<td>Certificate Landscape Design</td>
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<tr>
<td>New Diplomas</td>
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<td>Diploma Farm Management</td>
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<td>Diploma Horticultural Management</td>
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<tr>
<td>Diploma Wool Technology</td>
<td>1975-</td>
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Total Diplomas/Certificates: 6871

### University Post-graduate Diplomas

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<tr>
<td>Diploma Agric. Science</td>
<td>1962-</td>
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<td>Diploma Hortic. Science</td>
<td>1967-</td>
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<tr>
<td>Diploma Landscape Architecture</td>
<td>1970-</td>
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<tr>
<td>Diploma Natural Resources</td>
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### Degrees

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<th>Degree</th>
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<th>U.C.</th>
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<td>B.Ag. (B.Agr.)</td>
<td>1913-</td>
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<tr>
<td>B.Agr.Sc.</td>
<td>1931-</td>
<td>788</td>
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<tr>
<td>B.Agr.Sc. (Hort.) B.Hort.Sc.</td>
<td>1954-</td>
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<td>B.Hort.</td>
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<td>M.Hortic.Sc.</td>
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<td>1965-</td>
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<tr>
<td>B.E./M.E. (Engineering)</td>
<td>1971-</td>
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<tr>
<td>M.Sc. (Resource Mgmt.)</td>
<td>1974-</td>
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Total Degrees and Post-graduate Diplomas: 1566
## APPENDIX 6

### Student Administration - Executive Officers

#### The Students' Council

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<tr>
<th>Year</th>
<th>Chairman</th>
<th>Secretary</th>
<th>Magazine Editor</th>
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<tr>
<td>1880-90</td>
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<td>B. H. Robertson</td>
<td>P. Marshall</td>
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<td>1895</td>
<td>L. de C. Malet</td>
<td>B. H. Robertson</td>
<td>C. E. Adams</td>
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<td>1896</td>
<td>S. D. Marjoribanks</td>
<td>H. C. Pockley</td>
<td>C. C. Farr</td>
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<td>1897</td>
<td>M. M. Duncan</td>
<td>Y. T. Shand</td>
<td>M. Guerin</td>
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<td>1898</td>
<td>H. C. Pockley</td>
<td>H. W. Black</td>
<td>M. Guerin</td>
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<td>1899</td>
<td>E. M. Warren and G. M. Wallace</td>
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<tr>
<td>1900</td>
<td>E. W. Payton</td>
<td>G. W. Bassett</td>
<td>M. Guerin</td>
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<td>1901</td>
<td>A. Rattray</td>
<td>G. G. Newton</td>
<td>M. Guerin</td>
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<td>1903-04</td>
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#### The Finance and General Management Committee

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<th>Treasurer</th>
<th>Magazine Editor</th>
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<tr>
<td>1905</td>
<td>E. S. Jamieson</td>
<td>J. C. Colebatch</td>
<td>H. W. Hesse</td>
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<td>1906</td>
<td>H. W. Hesse</td>
<td>H. W. Hesse</td>
<td>W. Hudson</td>
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<tr>
<td>1907</td>
<td>E. J. Jekyll</td>
<td>M. G. Sharp and T. G. Price</td>
<td>M. G. Sharp and E. N. Grimwade</td>
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<tr>
<td>1908</td>
<td>E. O. McDouall</td>
<td>T. G. Price</td>
<td>E. H. Beamish</td>
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<td>1910</td>
<td>B. T. Wood</td>
<td>G. B. Fisher</td>
<td>G. H. Holford</td>
</tr>
<tr>
<td>1911</td>
<td>R. J. Low</td>
<td>D. T. Wood</td>
<td>F. C. R. Upton</td>
</tr>
<tr>
<td>1912</td>
<td>J. A. McQueen</td>
<td>R. J. Low</td>
<td>G. K. Macdonald</td>
</tr>
<tr>
<td>1913</td>
<td>R. W. Hawke</td>
<td>J. A. McQueen</td>
<td>C. Musgrave and H. Harding</td>
</tr>
<tr>
<td>1914</td>
<td>L. I. Manning</td>
<td>R. W. Hawke</td>
<td>C. J. Wilde and T. L. Steele</td>
</tr>
<tr>
<td>1915</td>
<td>N. M. Paulsen</td>
<td>L. I. Manning</td>
<td>E. W. J. Milton and N. M. Paulsen</td>
</tr>
<tr>
<td>1917</td>
<td>W. J. Glasgow</td>
<td>O. C. Stephens</td>
<td>N. P. Neal and P. W. Smallfield</td>
</tr>
<tr>
<td>1918</td>
<td>J. M. P. Coates</td>
<td>W. J. Glasgow</td>
<td>M. G. Rogers</td>
</tr>
<tr>
<td>Year</td>
<td>President</td>
<td>Secretary-Treasurer</td>
<td>Magazine Editor</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>---------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1919</td>
<td>J. M. P. Coates</td>
<td>N. P. Neal</td>
<td>G. Holgerson</td>
</tr>
<tr>
<td>1920</td>
<td>A. W. Cargill</td>
<td>G. Holgerson</td>
<td>N. S. Tankersley and R. E. Tolhurst</td>
</tr>
<tr>
<td>1921</td>
<td>A. W. Scott</td>
<td>C. J. Hamblyn</td>
<td>P. G. Stevens</td>
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<tr>
<td>1922</td>
<td>A. W. Hudson</td>
<td>C. L. Gillies</td>
<td>C. L. Gillies</td>
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<tr>
<td>1923</td>
<td>R. H. Bevin</td>
<td>J. H. G. Lloyd</td>
<td>J. H. G. Lloyd</td>
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<tr>
<td>1924</td>
<td>H. S. F. Houghton</td>
<td>A. Orchard</td>
<td>J. C. Jones</td>
</tr>
<tr>
<td>1925</td>
<td>K. H. Ruddenklaau</td>
<td>A. Orchard</td>
<td>R. Miller</td>
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<td>1926</td>
<td>W. C. Stafford</td>
<td>R. P. Hunter-Weston</td>
<td>H. N. Gray</td>
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<tr>
<td>1927</td>
<td>J. B. Brown</td>
<td>R. B. Knight</td>
<td>W. T. Baker</td>
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<tr>
<td>1928</td>
<td>A. R. Ormond</td>
<td>F. M. Riley</td>
<td>H. J. Geddes</td>
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<td>1929</td>
<td>J. R. Upton</td>
<td>G. E. Jones</td>
<td>A. B. Ward</td>
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<tr>
<td>1930</td>
<td>M. E. Sinclair-Lockhart</td>
<td>C. P. Tebb</td>
<td>C. P. Tebb</td>
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<tr>
<td>1931</td>
<td>R. A. Lawson and R. A. Sherwin</td>
<td>M. H. Rogers</td>
<td>L. M. Godfrey</td>
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<tr>
<td>1932</td>
<td>P. Thoms</td>
<td>A. Henderson</td>
<td>P. Thoms</td>
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<tr>
<td>1933</td>
<td>D. T. Herrick</td>
<td>A. Henderson</td>
<td>D. T. Herrick</td>
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<tr>
<td>1934</td>
<td>D. A. K. Shand</td>
<td>A. A. Blakely</td>
<td>D. A. K. Shand</td>
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<tr>
<td>1935</td>
<td>A. C. Wright</td>
<td>W. Murray</td>
<td>S. K. Carswell</td>
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<tr>
<td>1936</td>
<td>L. R. Morris</td>
<td>W. S. Emmett</td>
<td>G. H. Nelson</td>
</tr>
<tr>
<td>1937</td>
<td>C. N. Watts</td>
<td>R. D. Hudson</td>
<td>A. M. Lee and G. S. Moore</td>
</tr>
<tr>
<td>1938</td>
<td>R. D. Dick</td>
<td>H. A. Duff</td>
<td>G. S. Moore</td>
</tr>
<tr>
<td>1939</td>
<td>G. B. McLeod</td>
<td>A. S. Trotter</td>
<td>P. G. Young</td>
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</table>

<table>
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<tr>
<th>Year</th>
<th>President</th>
<th>Secretary</th>
<th>Treasurer</th>
<th>Magazine Editor</th>
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</thead>
<tbody>
<tr>
<td>1940</td>
<td>J. H. Reeves</td>
<td>N. Shillito</td>
<td>J. Porteous</td>
<td>K. Orchiston</td>
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<tr>
<td>1942</td>
<td>W. Hessey and J. M. Hoy</td>
<td>W. B. Brandford and D. C. Oliver</td>
<td>A. E. Scott</td>
<td>M. G. Holland</td>
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<tr>
<td>1943</td>
<td>G. Paton</td>
<td>A. G. Logan</td>
<td>Mrs E. Farmer</td>
<td>M. G. Holland</td>
</tr>
<tr>
<td>1944</td>
<td>J. H. Ford</td>
<td>A. M. Carter</td>
<td>Mrs E. Farmer</td>
<td>W. I. Laing</td>
</tr>
<tr>
<td>1945</td>
<td>W. I. Laing</td>
<td>F. M. Read</td>
<td>P. H. McGloin</td>
<td>C. B. Mead</td>
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<tr>
<td>1946</td>
<td>J. J. A. McLaughlin</td>
<td>R. H. Thornton</td>
<td>S. D. Reeves</td>
<td>H. C. Smith</td>
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<td>1948</td>
<td>D. J. Hulston</td>
<td>J. A. Burton</td>
<td>J. R. Bannerman</td>
<td>D. G. Telford</td>
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<tr>
<td>1949</td>
<td>N. A. Coster</td>
<td>V. Vial</td>
<td>M. Anderson</td>
<td>K. H. C. Lewis</td>
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<tr>
<td>1952</td>
<td>D. S. McKenzie</td>
<td>M. G. Boyer</td>
<td>J. E. Coates</td>
<td>A. E. Esler</td>
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<tr>
<td>1953</td>
<td>D. J. Dobson</td>
<td>R. H. Ferguson</td>
<td>P. M. Falconer</td>
<td>J. G. White</td>
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<tr>
<td>1955</td>
<td>B. K. Cameron</td>
<td>G. M. Neutze</td>
<td>D. Mayne</td>
<td>M. J. Wraight</td>
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<td>1956</td>
<td>G. M. Neutze</td>
<td>T. E. Ludecke</td>
<td>R. C. Stockdill</td>
<td>D. J. Botting</td>
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<tr>
<td>1957</td>
<td>B. W. Such</td>
<td>G. T. Daly</td>
<td>N. Thompson</td>
<td>E. Sherrard</td>
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<td>1958</td>
<td>G. T. Daly</td>
<td>P. H. S. Cox</td>
<td>L. R. Kingsbury</td>
<td>J. C. Butel</td>
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<tr>
<td>1959</td>
<td>P. H. S. Cox</td>
<td>A. H. Nordmeyer</td>
<td>L. R. Kingsbury</td>
<td>P. R. Stevens</td>
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<tr>
<td>1960</td>
<td>A. H. Nordmeyer</td>
<td>L. R. Kingsbury</td>
<td>J. M. Hayman</td>
<td>L. D. Woods</td>
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<tr>
<td>1961</td>
<td>C. J. McKenzie</td>
<td>R. C. Speight</td>
<td>J. M. Hayman</td>
<td></td>
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<tr>
<td>1962</td>
<td>J. B. Milne</td>
<td>J. E. Wolff</td>
<td>A. H. Hayman</td>
<td></td>
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<tr>
<td>1963</td>
<td>J. W. Henderson</td>
<td>N. S. MacKenzie</td>
<td>L. R. Evans</td>
<td></td>
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<tr>
<td>1964</td>
<td>D. B. Lawson</td>
<td>R. A. Bonifant</td>
<td>B. N. Hamilton</td>
<td>M. W. Dunbier and M. J. Walsh</td>
</tr>
</tbody>
</table>
THE SEED THEY SOWED

President  Secretary  Treasurer  Magazine Editor
1968 W. A. N. Brown  P. Topp  R. J. Payne  Student participation ceased
1969 R. Topp  B. A. Bell  P. O. Oppenheimer

1970 J. Hayes  Miss M. Palmer  S. Robinson

The first year in which a woman student, Miss M. I. Palmer was elected to the Student’s Executive.

1971 I. R. Gunn  H. Bezar  K. Bryan
1972 W. K. Burge  Miss J. Kane  T. Kite
1973 S. D. Hight  B. P. Duncan  R. D. Harrison
1974 J. B. Burns and T. McIntyre  Miss D. Tawse  K. Taylor
1975 D. Rockell  M. Gelling  R. Judge
1976 R. M. Bucknall  I. R. Lawrence  G. W. Bulmer
1977 R. G. Eastoe  Miss W. Stewart  G. W. Bulmer
1978 G. Macindoe

Lincoln College Old Students’ Association

Presidents
W. Lowrie, 1904-08
R. E. Alexander, 1910-35
G. W. R. Osborne, Leeston, 1936-7, farmer
L. B. Scott, Christchurch, 1938-9, company director
J. B. Bowker, Amberley, 1940, farmer
E. J. Jekyll, Banks Peninsula, 1941-2, farmer
L. W. McCaskill, Christchurch, 1943-4, Teachers College and Lincoln College
E. H. Beamish, O.B.E., Hastings, 1945-6, farmer
C. C. Leitch, 1947-8, Department of Agriculture, Timaru
C. P. Tebb, 1949-50, Farm Supt. Lincoln College and Econ. Service Wool Board
L. C. Fincham, 1951-2, farmer, Rangiora
R. H. Bevin, 1953-4, Lincoln College and Econ. Service N.Z. Wool Board
F. M. Henderson, 1955-6, farmer, Lumsden
T. D. J. Holderness, 1957-8, Gebbies Valley, farmer
J. B. Brown, 1959-60, Valuer-General, Wellington
I. L. Elliott, 1963-4, Director, Soil Res. Stn. Rukuhia, Waikato
I. D. Blair, 1965-6, Lincoln College
M. H. Rogers, 1967-8, State Advances Corporation, Christchurch
K. H. Shirtcliff, 1969-70, farmer, Killinchy
R. S. Newton, 1973-4, company director, Christchurch
G. M. Niederer, 1975-6, company director, Invercargill
P. J. Fleming, 1977-8, farmer, Irwell

Secretary  Treasurer
G. Rennie, 1904-06  C. L. Hart, 1912-15
B. Seth Smith, 1910-15  R. A. Fougere, 1929-36
G. H. Holford, 1935  A. H. Flay, 1941-4
J. W. Calder, 1929-34  H. E. Garrett, 1945-6
## Secretary

<table>
<thead>
<tr>
<th>Name</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. P. Tebb</td>
<td>1935–6</td>
</tr>
<tr>
<td>I. D. Blair</td>
<td>1936–9</td>
</tr>
<tr>
<td>R. D. Dick</td>
<td>1939–40</td>
</tr>
<tr>
<td>H. E. Garrett</td>
<td>1941</td>
</tr>
<tr>
<td>S. A. La Roche</td>
<td>1942</td>
</tr>
<tr>
<td>P. G. Stevens</td>
<td>1943–6</td>
</tr>
<tr>
<td>M. G. Hollard</td>
<td>1947–55*</td>
</tr>
<tr>
<td>M. B. Cooke</td>
<td>1955–68*</td>
</tr>
<tr>
<td>B. J. P. Ryde</td>
<td>1969–71</td>
</tr>
<tr>
<td>G. B. MLeod</td>
<td>1972–6</td>
</tr>
<tr>
<td>A. I. Bilbrough</td>
<td>1976–7</td>
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## Treasurer

<table>
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<tr>
<th>Name</th>
<th>Years</th>
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</thead>
<tbody>
<tr>
<td>P. H. McGloin</td>
<td>1947–8</td>
</tr>
<tr>
<td>H. Chaplin</td>
<td>1969–70</td>
</tr>
<tr>
<td>R. H. B. Tonkin</td>
<td>1971–2</td>
</tr>
<tr>
<td>P. W. Cosgriff</td>
<td>1973–</td>
</tr>
</tbody>
</table>

* Hon. Secretary Treasurer
## APPENDIX 7

### Schedule of Main Buildings

<table>
<thead>
<tr>
<th>Completion</th>
<th>Architect</th>
<th>Main Contractors</th>
<th>Approx. Area</th>
<th>Approx. cost funding source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880 Ivey Hall</td>
<td>F. Strouts</td>
<td>D. Reese</td>
<td>30,000 sq ft</td>
<td>£30,507</td>
<td>£5,954 from general account plus loan £28,000</td>
</tr>
<tr>
<td>and 3 cottages</td>
<td>F. Strouts</td>
<td>D. Reese</td>
<td></td>
<td>£1,083</td>
<td>Ref. A.J.H.R. E.7A 1889 p.20</td>
</tr>
<tr>
<td>1881 West Wing</td>
<td>F. Strouts</td>
<td>D. Reese</td>
<td></td>
<td>£1,097</td>
<td>Kitchens demolished 1957</td>
</tr>
<tr>
<td>1896 Addition</td>
<td>F. Strouts</td>
<td>D. Reese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(servants' quarters)</td>
<td>Guthrie</td>
<td>H. Hinkey</td>
<td></td>
<td>£3,887</td>
<td></td>
</tr>
<tr>
<td>1918 East Wing Ext.</td>
<td>Guthrie</td>
<td>H. Hinkey</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ivey Hall was first renovated in 1941 through Govt. grant of £17,000 (S/Agr. Act 1937) and again 1954-5 with government grant £45,000. The original public rooms (dining-room, board room, director's residence) were used as the Administration (Registry) Centre 1930-76, and then as Rural Education Centre.

<table>
<thead>
<tr>
<th>Completion</th>
<th>Architect</th>
<th>Main Contractors</th>
<th>Approx. Area</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1879 Original central farm buildings — dairy stables, wool shed</td>
<td></td>
<td></td>
<td>£3,536</td>
<td>Demolished 1953, except for remnant of original dairy</td>
</tr>
<tr>
<td>1881 Chemistry Lab.</td>
<td>F. Strouts</td>
<td></td>
<td></td>
<td>Converted to Dining room 1930, later incorporated in Lecture theatre A</td>
</tr>
<tr>
<td>1909 Swimming bath</td>
<td>Staff and students</td>
<td>College</td>
<td></td>
<td>Later improved, including filtration plant</td>
</tr>
<tr>
<td>1910 Power House (Electric plant)</td>
<td></td>
<td></td>
<td></td>
<td>Converted into Biological lab: became Wheat Res. Inst. Lab. 1930 — then to Chemical Services/Soils</td>
</tr>
<tr>
<td>1914 Hilgendorf House</td>
<td></td>
<td></td>
<td>£1,158</td>
<td>Later occupants were Calders, Langers — now visitors' flats.</td>
</tr>
<tr>
<td>1917 Ashleydene homestead</td>
<td>J. A. Scarf</td>
<td></td>
<td>£940</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Description</td>
<td>Designer/Builder</td>
<td>Cost</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------</td>
<td>-----------------------------------------</td>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1924</td>
<td>Memorial Hall</td>
<td>Cecil Wood, England Bros. Ltd.</td>
<td>£3,700</td>
<td>Old Student subscriptions (H.A. Knight £1,000) and College.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rennell Bros. Ltd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1929</td>
<td>Farm staff and Degree cottages</td>
<td>College</td>
<td></td>
<td>On South side, entrance to back access drive.</td>
</tr>
<tr>
<td>1929</td>
<td>Second Laboratory</td>
<td>F. Shaw Ltd.</td>
<td>15660 sq ft</td>
<td>£12,000 The first Government grant. Academic centre until 1968; Soils Dept. until 1976, then Tussock Grasslands Institute.</td>
</tr>
<tr>
<td>1936</td>
<td>Demonstration Theatre</td>
<td>College staff (Fougere and students)</td>
<td>5300 sq ft</td>
<td>Approx. £1,000 Public appeal by A. Leslie, veterinarian and Government subsidy. Used as wool teaching room 1946-76, then staff recreation.</td>
</tr>
<tr>
<td>1937-44</td>
<td>Nine staff cottages</td>
<td>M.O.W. (Housing Div.), D.R.T. Hall, Christchurch.</td>
<td>Funded from farm surpluses. Average cost £1,700 each. Including one at Ashleydene (1942).</td>
<td></td>
</tr>
<tr>
<td>1941</td>
<td>Short course building</td>
<td>M.O.W., J. Calder</td>
<td>4400 sq ft</td>
<td>Govt. grant through Sch./Agr. £6,895 Supplementary student accommodation</td>
</tr>
<tr>
<td>1940</td>
<td>Wheat Res. Building</td>
<td>M.O.W.</td>
<td>2144 sq ft</td>
<td>Erected by DSIR Tussock Grassl. Inst. until 1976, then NZAEI.</td>
</tr>
<tr>
<td>1945</td>
<td>Principal's Lodge</td>
<td>M.O.W.</td>
<td>£4,300 Sch./Agr.</td>
<td></td>
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<tr>
<td>1948-52</td>
<td>Twenty-one staff houses</td>
<td>Pascoe &amp; Hall, P. Graham &amp; Son Ltd.</td>
<td>Approx. 25,000 sq ft</td>
<td>£54,640 Local Govt. Loans Bd. 35 year term (interest free).</td>
</tr>
<tr>
<td>1949</td>
<td>Water tower and reticulation</td>
<td>M.O.W., D.R.T. Hall</td>
<td>4&quot; well bore 50,000 gall. tank</td>
<td>£7,223 Sch./Agr.</td>
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<tr>
<td>1952</td>
<td>Engineering building</td>
<td>A. W. Riddolls and M.O.W., P. Graham &amp; Son Ltd.</td>
<td>13,500 sq ft</td>
<td>£17,000 Sch./Agr.</td>
</tr>
<tr>
<td>Completion</td>
<td>Architect</td>
<td>Main Contractors</td>
<td>Approx. Area</td>
<td>Approx. cost funding source</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------</td>
<td>------------------------------</td>
<td>--------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>1953 YFC Memorial Hall</td>
<td>Govt. Architect (D/A P.E. Cornish)</td>
<td>P. Graham &amp; Son Ltd.</td>
<td>1680 sq ft</td>
<td>£8,895</td>
</tr>
<tr>
<td>1954 Boiler House and Laundry block</td>
<td>M.O.W.</td>
<td>Fletcher Constr. Co.</td>
<td>3250 sq ft</td>
<td>£125,000</td>
</tr>
<tr>
<td>1953 Hudson Hall</td>
<td>P. C. Cornish Dis. Arch. M.O.W.</td>
<td>C. Luney Ltd.</td>
<td>49,180 sq ft</td>
<td>£175,000</td>
</tr>
<tr>
<td>1954 Refectory and Kitchens</td>
<td>Blake-Kelly &amp; Wilson (Govt. Arch.)</td>
<td>Fletcher Constr. Co.</td>
<td>14,220 sq ft</td>
<td>£82,577</td>
</tr>
<tr>
<td>1954 Farm stores</td>
<td>College staff and students (G. Gibbs)</td>
<td></td>
<td></td>
<td>£6,000</td>
</tr>
<tr>
<td>1955 Ashleydene Woolshed and yards</td>
<td>College staff and students (G. Gibbs)</td>
<td></td>
<td></td>
<td>College</td>
</tr>
<tr>
<td>1955 Students' Shop and canteen</td>
<td>College staff and students (G. Gibbs)</td>
<td></td>
<td>900 sq ft</td>
<td>£1,100</td>
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<tr>
<td>1955 Matron's Wing and Women Students</td>
<td>M.O.W.</td>
<td>Fletcher Constr. Co.</td>
<td>5885 sq ft</td>
<td>£12,423 Govt. grant incl. in Refectory contract</td>
</tr>
<tr>
<td>1956 Horticulture Centre</td>
<td>College staff and students (G. Gibbs)</td>
<td></td>
<td>5958 sq ft</td>
<td>£8,000 Grant-in-aid</td>
</tr>
<tr>
<td>1960 Alexander Memorial Entrance</td>
<td>Hollis &amp; Leonard</td>
<td>L. F. King</td>
<td>£1,205</td>
<td>Donations £900 and College</td>
</tr>
<tr>
<td>Year</td>
<td>Project Name</td>
<td>Contractor</td>
<td>Area (sq ft)</td>
<td>Cost (£)</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>1960</td>
<td>Geo. Forbes Library</td>
<td>Jones, Adams, Kingston Reynolds</td>
<td>Fletcher Constr. Co.</td>
<td>7400 sq ft</td>
</tr>
<tr>
<td>1962</td>
<td>Johnstone Memorial Laboratory</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>T. H. Alexander Bldg. Ltd.</td>
<td>3564 sq ft</td>
</tr>
<tr>
<td>1968</td>
<td>Hilgendorf Wing</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>M. L. Paynter Ltd.</td>
<td>109,000 sq ft</td>
</tr>
<tr>
<td>1970</td>
<td>Colombo and Lowrie Halls</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>Fletcher Constr. Ltd.</td>
<td>40,272 sq ft</td>
</tr>
<tr>
<td>1970</td>
<td>Lecture theatres</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>Rea Enterprises Ltd.</td>
<td>16,972 sq ft</td>
</tr>
<tr>
<td>1970</td>
<td>Meat Inspectors Hall</td>
<td>Dist. Architect M.O.W. Hamilton</td>
<td>J. &amp; W. Jamieson Ltd.</td>
<td>13,000 sq ft</td>
</tr>
<tr>
<td>1971</td>
<td>Garrett House</td>
<td>&quot;Lockwood&quot; pre-construction</td>
<td>Hallmark Builders Ltd.</td>
<td>1962 sq ft</td>
</tr>
<tr>
<td>1972</td>
<td>Squash Courts</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>M. J. Harnett</td>
<td>1638 sq ft</td>
</tr>
<tr>
<td>1972</td>
<td>Flats</td>
<td>&quot;Lockwood&quot;</td>
<td>Hallmark Builders Ltd.</td>
<td>17,448 sq ft</td>
</tr>
<tr>
<td>Completion</td>
<td>Architect</td>
<td>Main Contractors</td>
<td>Approx. Area</td>
<td>Approx. cost funding source</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>--------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1975 Sims Flats</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>College carpenters and services</td>
<td>2312 sq ft</td>
<td>$56,530 plus $7,915 equip</td>
</tr>
<tr>
<td>1975 Library Extension</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>Paynter &amp; Hamilton Ltd.</td>
<td>Library 17,750 sq ft</td>
<td>(see Registry below)</td>
</tr>
<tr>
<td>1975 West-end flats</td>
<td>&quot;Lockwood&quot;</td>
<td>Hallmark Builders Ltd.</td>
<td>19,620 sq ft</td>
<td>$115,200</td>
</tr>
<tr>
<td>1976 Boiler House</td>
<td>M.O.W.</td>
<td>Williamson Construction Co.</td>
<td></td>
<td>$445,075</td>
</tr>
<tr>
<td>1976 Registry</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>Paynter &amp; Hamilton Ltd.</td>
<td>9965 sq ft</td>
<td>See Library Extension</td>
</tr>
<tr>
<td>1976 Burns Wing</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>M. L. Paynter Ltd.</td>
<td>99,829 sq ft</td>
<td>$2,470,000</td>
</tr>
<tr>
<td>1976 Field Service Centre</td>
<td>Trengrove, Trengrove and Marshall</td>
<td>Fletcher Construction Ltd.</td>
<td>11,000 sq ft</td>
<td>$120,000 grant-in-aid U.G.C.</td>
</tr>
<tr>
<td>1977 Additional Student Residences</td>
<td>Trengrove and Blunt</td>
<td>Fletcher Construction Ltd.</td>
<td>856 sq m</td>
<td>$27,000</td>
</tr>
<tr>
<td>1977 Recreation Centre</td>
<td>Trengrove and Blunt</td>
<td>Paynter and Hamilton</td>
<td></td>
<td>$500,000</td>
</tr>
</tbody>
</table>
APPENDIX 8

Land Transactions

The account of the acquisition and sale of college land and endowments was prepared by M. B. Cooke (p. 163) and D. K. Ower.* The appendix has been reduced to two tables giving details of transactions before and after 1955. The full appendix appears in Blair's manuscript lodged in the Lincoln College library and is recommended to any who would be particularly interested in the evolution of the college's substantial land holdings.

SCHEDULE OF TRANSACTIONS TO 1955

<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
<th>Vendor</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1875</td>
<td>101,000 acres</td>
<td>Grant</td>
<td>-</td>
</tr>
<tr>
<td>28/9/1877</td>
<td>42</td>
<td>R. McDowall</td>
<td>464</td>
</tr>
<tr>
<td>1/11/1877</td>
<td>50</td>
<td>H. Pannett</td>
<td>1,500</td>
</tr>
<tr>
<td>30/11/1877</td>
<td>97½</td>
<td>H. Pannett</td>
<td>2,076</td>
</tr>
<tr>
<td>8/12/1877</td>
<td>41</td>
<td>G. Dalton</td>
<td>779</td>
</tr>
<tr>
<td>4/4/1878</td>
<td>132</td>
<td>R. Wright</td>
<td>3,967.10.0</td>
</tr>
<tr>
<td>24/7/1878</td>
<td>39</td>
<td>R. Wright</td>
<td>1,777</td>
</tr>
<tr>
<td>24/8/1879</td>
<td>100</td>
<td>Rev. O'Callaghan</td>
<td>3,000</td>
</tr>
<tr>
<td>20/7/1881</td>
<td>160</td>
<td>James Todd</td>
<td>4,000</td>
</tr>
<tr>
<td>23/1/1896</td>
<td>50</td>
<td>H. Pannett</td>
<td>1,100</td>
</tr>
<tr>
<td>2/9/1902</td>
<td>75</td>
<td>E. Smith</td>
<td>2,174</td>
</tr>
<tr>
<td>29/11/1914</td>
<td>1</td>
<td>R. W. Lockhead</td>
<td>66</td>
</tr>
<tr>
<td>5/7/1917</td>
<td>140</td>
<td>J. Henley</td>
<td>7,000</td>
</tr>
<tr>
<td>22/8/1918</td>
<td>8</td>
<td>Est. N. Johnston</td>
<td>550</td>
</tr>
<tr>
<td>24/4/1927</td>
<td>49</td>
<td>H. E. Cook</td>
<td>1,750</td>
</tr>
<tr>
<td>20/4/1939</td>
<td>294</td>
<td>Est. E. Smith</td>
<td>8,232</td>
</tr>
<tr>
<td></td>
<td>1,279</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31/3/1909</td>
<td>590</td>
<td>H. McLean</td>
<td>3,544</td>
</tr>
<tr>
<td>1/5/1909</td>
<td>870</td>
<td>J. McCrostie</td>
<td>8,267</td>
</tr>
<tr>
<td>23/12/1909</td>
<td>13</td>
<td>Church Trustees</td>
<td>100</td>
</tr>
<tr>
<td>4/9/1913</td>
<td>5</td>
<td>C.A.C. sold to E. Downey</td>
<td>125</td>
</tr>
<tr>
<td>1/4/1920</td>
<td>590</td>
<td>C.A.C. sold to J. W. Kine</td>
<td>4,134</td>
</tr>
<tr>
<td>1955</td>
<td>193</td>
<td>A. Leslie</td>
<td>15,404</td>
</tr>
<tr>
<td>(approx.)</td>
<td>137</td>
<td>Sold to D.S.I.R. (approx.)</td>
<td>13,700</td>
</tr>
</tbody>
</table>

## SCHEDULE OF TRANSACTIONS FROM 1955

<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
<th>Vendor or Purchaser</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/59</td>
<td>7-2-00</td>
<td>D.S.I.R.</td>
<td>£1,115</td>
</tr>
<tr>
<td>6/61</td>
<td>28-0-00</td>
<td>T. H. &amp; B.M. Jones exchanged for</td>
<td></td>
</tr>
<tr>
<td>6/61</td>
<td>62-3-02</td>
<td>C. J. Woods</td>
<td>£11,340</td>
</tr>
<tr>
<td>1/63</td>
<td>5-2-33.9</td>
<td>W.R.O. of N.Z.</td>
<td>£1,855</td>
</tr>
<tr>
<td>8/65</td>
<td>2282-0-00</td>
<td>(Leasehold) J. W. Courtier</td>
<td>£19,500</td>
</tr>
<tr>
<td>1/65</td>
<td>110-0-00</td>
<td>P. Kavanagh</td>
<td>£19,000</td>
</tr>
<tr>
<td>7/65</td>
<td>127-0-36</td>
<td>D. G. Robinson</td>
<td>£23,750</td>
</tr>
<tr>
<td>7/65</td>
<td>157-0-00</td>
<td>D. M. Moore</td>
<td>£45,000</td>
</tr>
<tr>
<td>4/66</td>
<td>174-2-29.4</td>
<td>D.S.I.R.</td>
<td>£52,500</td>
</tr>
<tr>
<td>3/66</td>
<td>27-3-11.3</td>
<td>Paparua County Council</td>
<td>£6,250</td>
</tr>
<tr>
<td>3/66</td>
<td>5-0-00.7</td>
<td>Dept. of Agriculture</td>
<td>£2,500</td>
</tr>
<tr>
<td>4/66</td>
<td>27-0-00</td>
<td>R. H. &amp; B. B. Moir</td>
<td>£6,000</td>
</tr>
<tr>
<td>9/67</td>
<td>28-0-00</td>
<td>T. H. &amp; B. M. Jones</td>
<td>£9,905</td>
</tr>
<tr>
<td>9/67</td>
<td>8-2-21</td>
<td>Crown (N.Z.R.)</td>
<td>£700</td>
</tr>
<tr>
<td>5/69</td>
<td>0-2-19.2</td>
<td>Crown (N.Z.R.)</td>
<td>£104</td>
</tr>
<tr>
<td>10/71</td>
<td>2282-0-00</td>
<td>(Freeholding) Crown</td>
<td>$21,672</td>
</tr>
<tr>
<td>3/72</td>
<td>3-0-00</td>
<td>Ellesmere County Council</td>
<td>No Charge</td>
</tr>
<tr>
<td>11/73</td>
<td>0-0-25</td>
<td>Crown (N.Z.R.)</td>
<td>$200</td>
</tr>
<tr>
<td>74</td>
<td>34900</td>
<td>Mesopotamia to Proutings Ltd and Lands &amp; Survey Dept.</td>
<td>$219,000</td>
</tr>
<tr>
<td>2/75</td>
<td>24.6039ha</td>
<td>K. M. Henley</td>
<td>$81,795</td>
</tr>
<tr>
<td>5/75</td>
<td>142.0000ha</td>
<td>W. J. Symes</td>
<td>$146,970</td>
</tr>
</tbody>
</table>

(Refer to endpaper maps).
APPENDIX 9
Meteorology at Lincoln College

N. J. Cherry* - Lect. Agric. Meteorology

Since January, 1881, when the instruments from the Christchurch Domain (Botanic Gardens) were transferred to the College, daily climatological observations have been recorded at Lincoln. Even though there have been times when a day or two have been missed, it provides one of the longest consistent climatological records in New Zealand.

A member of the college staff has always been responsible for the climate station and its records. This was initiated by Ivey, who it appears would rather have taken the readings himself for he "would not even trust the students to feed the horses". The first staff members to take this responsibility were Barkas (1881-82), the first chemistry teacher, and George Gray (1883-84 and 1903-15), the lecturer in chemistry and physics. In 1884 Buckley was appointed to the college staff to teach book-keeping and meteorology. Naturally he assumed the responsibility for the climate station (1884-90) as well as being the book-keeper for the college. During the 1890s the observers included P. Marshall (1893-95), C. E. Adams (1895-96) and J. W. Mellor (1898-99). Mr Mellor became very well known as a chief potteries chemist in the United Kingdom and as the author of a large work on inorganic chemistry. At the turn of the century the observer was Dr. F. W. Hilgendorf. Other people who became well known in other activities who have shared this task in their time include L. J. Wild, M. J. Scott, M. C. Franklin, M. M. Burns, A. F. R. Adams and B. L. Elphick.

D. J. Sidey was associated with the climate station between 1927 and 1935. In 1929 he recorded the Murchison earthquake. At the start of the Second World War the records were being kept by D. R. Muff, the librarian. On October 2, 1940, we find his simple but poignant note: "gone to war". Before Muff left, V. R. Clark, of the animal husbandry department, had taken over but in 1941 he too left to serve in the Forces. He trained as a meteorologist and served as such in the Pacific. Returning to the college at the end of the war he again assumed the responsibility for the climate station, which had been taken meanwhile by Dr. Burns. After the war the task of making the daily observations on weekdays was shared by technicians from all departments. Each served for a period of three months in turn. Clark continued the duties for another 22 years until in 1967 R. A. Crowder, lecturer in horticulture, took over. In 1971, Lees, a

THE SEED THEY SOWED

A technician in the Agricultural Engineering Institute, assumed responsibility for the observations, but in 1974, when Dr. Cherry was appointed lecturer in agricultural meteorology, he became responsible for the climate station and its records. In 1975 the job of taking readings passed to Paul Garvin, agricultural meteorology technician.

Throughout the last two decades at least, most of the weekend and holiday observations have been recorded by the teen-age children of college staff who have provided a conscientious and extremely valuable service. However, every now and then the holidays or weekends cause some difficulties. The problem is as old as the college itself. For example, we have the following extracts from an exchange of letters between Dr. Kidson, director of the Meteorological Service, and R. E. Alexander, director of the college in 1933. Observations had not been recorded on the first three days of that year. This prompted Kidson to write saying, “apart from the fact that such breaks seriously detract from the value of the records and cause considerable additional work in this office the published record affords a very bad example to our other observers. This one does not expect from an institution such as Lincoln College. I am at a loss to understand why more importance is not attached to the observations by members of the college staff”.

An indignant Alexander retorted that the College staff were not paid for the task of taking observations and they got very few holidays. He explained that the particular occurrence mentioned was caused by the sickness of the relieving observer and “surely this was just as unfortunate for the individual as for the records”. He concluded, “I think it is hardly fair to compare us with stations where the officers are paid”. Kidson had the last word in this exchange, replying that about one-third of the stations in New Zealand had unpaid observers “and these are amongst our best”.

A similar problem, but for different reasons, was experienced by Burns in March, 1943, when he wrote to the Meteorological Service explaining “re February weather returns, please note that owing to the unfortunate omissions by our weather observer the records for February are incomplete” . . . “We regret these gaps which were occasioned by the absence of regular observers and the pressure of harvesting operations”.

The climate station was originally intended to record the climate of the Canterbury Plains in the region of Lincoln. Thus when it was established in 1881 it was in a small but well exposed enclosure at the side of the stock paddock some 200m to the south of the main College buildings. The original instruments included a raingauge, windgauge, barometer, barograph, grass minimum thermometer, solar radiation thermometer, maximum, minimum and ordinary dry-bulb thermometers and maximum, minimum and ordinary wet-bulb thermometers.

A Jordan sunshine recorder was added in May, 1900, to be replaced by a Campbell-Stokes recorder in May, 1915. The first earth thermometers were installed at the end of 1913, having depths of 1”, 9” and 18”. These consistently caused trouble and, as with the grass minimum thermometer, had to be replaced regularly because of breakages.

Of course, the land around the college buildings was developed and shelter belts were planted to protect the vegetable gardens to the south of the college buildings. An aerial photograph taken in 1930 confirms the
Meteorological Service report that the shelter belts had in fact been planted right up to the climate station, touching the enclosure at each side of its northern boundary. Because of the effect of local environment, such as shelter belts, on the records a new site was chosen for the station in 1943 and a new set of instruments installed. The site was changed again in 1963, and again in 1975, at the instance of Cherry.

On the new site, in an open field 200m north of the previous site, Cherry set about upgrading the instrumentation and recording facilities on the climate station. The first addition was a 20m high guyed mast installed in 1976. This supported sensors to measure the mean wind speed, temperature and humidity profiles from the ground level up to 20m above ground level. In 1977 solar radiation sensors were installed to record the radiation balance over pasture. Also, every other parameter was provided with an electronic sensor so that in all, 36 channels of data were being recorded automatically on magnetic tape which could be read straight into a computer. These new facilities meant that not only could the station continue to supply daily climatological readings but the data collected were also very useful for advanced teaching and research applications. The data have been used to monitor the energy transferred by radiation, the movement of heat, momentum and moisture through the surface layer, the performance of wind turbines and spray irrigation systems, and it has been used to relate more closely than ever before, the influence of the weather and its variables to crop and pasture growth.

The fundamental part that the weather plays in agriculture was recognised from the very beginning of the college's life. The first course set up by Ivey in 1879 included basic meteorology. The winter term examination paper of 1880 had a question on dew formation. Mr Buckley taught meteorology to first year students for one hour a week, covering topics such as wind, dew, mist and cloud; meteorological instruments and observing methods; laws of storms and the influence of the mountains and oceans. A few years later meteorology was included as part of the natural science paper. As the courses expanded and other subjects were included the meteorological content was diminished. Aspects of weather and climate have been taught as minor parts of other subjects. During the 1950's and '60's V. R. Clark was often called on to teach various aspects of meteorology. Since his appointment in 1967, R. A. Crowder has regularly given lectures on the weather. In 1976, apart from meteorological examples in the first year introductory physics course taught by R. W. Heine, the only formal lectures on meteorology in the professional agriculture degree were 20 lectures to the science stream of students in the third year. In addition, Cherry taught a half-paper on weather to the first-year diploma of parks and recreation course, a full-paper entitled environmental physics to the second professional agricultural engineering students and offered a post-graduate course in advanced agricultural meteorology.

One of the major tasks of the College academic staff is to advance knowledge and understanding through research. The field of meteorology has been no exception. Most out-door research projects involve the weather in some way. However, it is a common experience that agricultural and biological scientists do not usually possess the physical or mathematical expertise required to apply meteorological concepts. De-
spite this, a number of college staff have been engaged in measuring weather variables in association with their experiments and field work. In many cases this has led to valuable conclusions. The level of applied meteorological research at the college increased, until late in 1969 Burns set up the bioclimate co-ordinating committee under the chairmanship of T. M. Morrison, head of the department of horticulture. This committee was successful in obtaining a good deal of funding for climatological equipment and recording instruments, but the practical co-ordination between departments was found to be rather more difficult. It was this committee that saw the need for a meteorologist to be appointed to the staff and was instrumental in the establishment of the lectureship in agricultural meteorology and Cherry’s appointment in 1974.

The lecturer in agricultural meteorology was made responsible for the climate station and its records, to develop courses and research in agricultural meteorology and to assist other college staff whose projects involved some aspect of the weather. It is interesting that this should happen at a time of economic stringency, almost a century after a similar situation led to the establishment of the Lincoln College climate station. It may not be very surprising that the college became involved with wind energy research in 1974 when it is recorded that almost 100 years ago, in July, 1880, Mr Ivey recommended that a windmill, costing £42.10.2, should be installed to pump water for the school and farm. He assured the committee of the School of Agriculture that “the windmill will pay for itself in one dry year”. In 1974 Cherry became the executive officer of the Wind Energy Resource Survey of New Zealand, an extensively co-operative project funded by the New Zealand Energy Research and Development Committee. The project is co-ordinated through the New Zealand Wind Energy Task Force, chaired by the head of the department of agricultural engineering G. T. Ward. The results of this project have greatly increased the awareness of the potential that New Zealand has to generate a significant amount of its electricity using this indigenous renewable energy resource. It is commonly thought that the wind is too variable to be relied on for electricity. However, studies show that during each day the wind’s energy varies on the average in a similar way to national electricity demand. It was also found that the output from a network of large wind generators distributed in groups throughout the whole country was far more consistent than generally thought.

Meteorology has played an important part in the College over its first 100 years and will play an even more important part in the future. The climate station is a valuable asset with its long record and its new capabilities. Research in agricultural meteorology is essentially aimed at increasing food production by making the best use of our climate for growing crops and animals.
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BOUNDARIES OF CENTRAL FARMS 1977
LINCOLN COLLEGE
UNIVERSITY COLLEGE OF AGRICULTURE

A — MIXED CROPPING FARM 186.6 hectares
S — STUD SHEEP FARM 128.6 hectares
R, H — RESEARCH FARM 181.0 hectares
TS, D, SF — DAIRY FARM 143.5 hectares

AREA: 658.5 HECTARES
200 0 200 400 600 800 1,000 METRES