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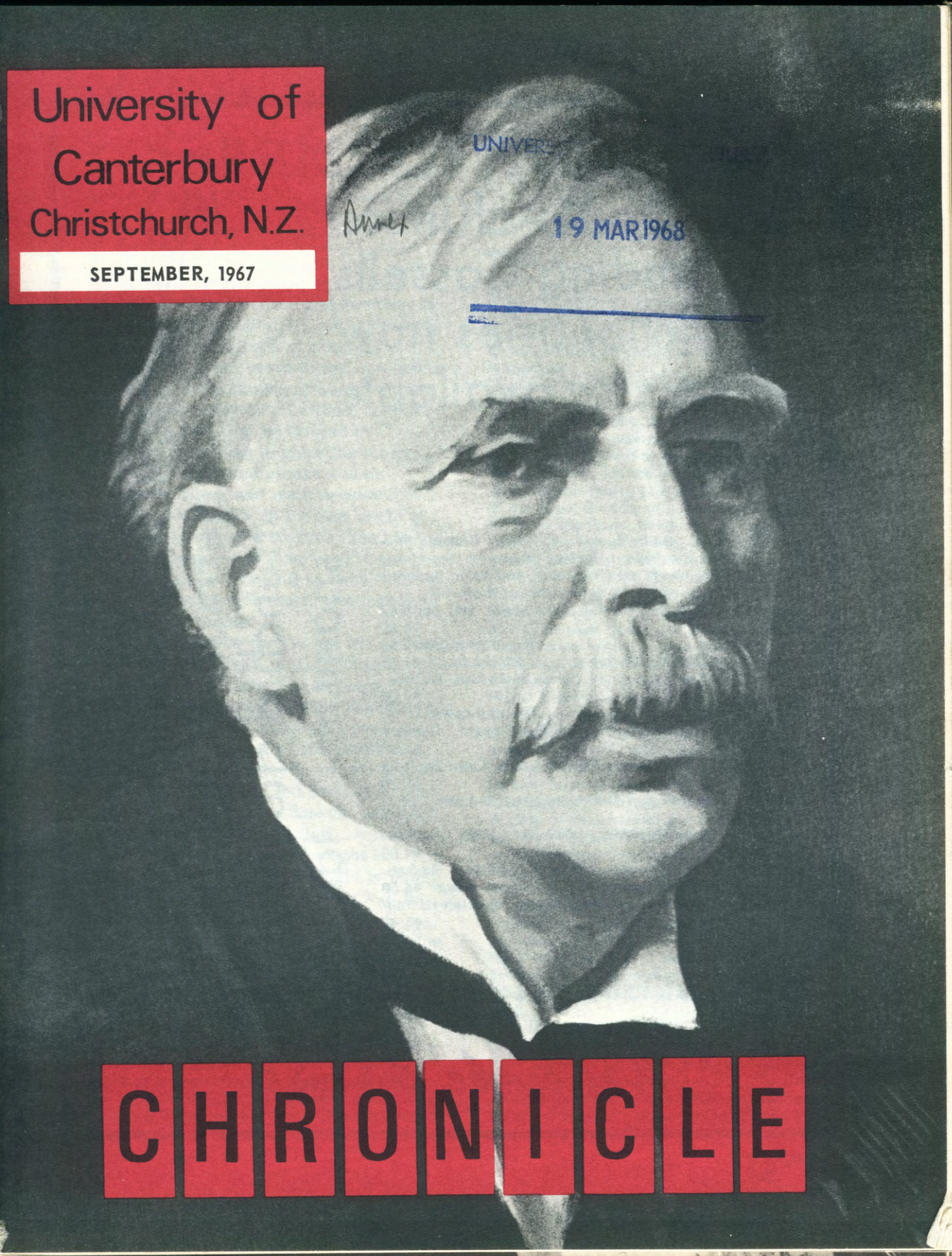

CHRONICLE

Rutherford Remembered

RELICS OF FAMOUS GRADUATE

Lord Rutherford of Nelson, who left Canterbury to carve a name in science alongside those of Newton and Faraday, is specially remembered at his old University this month. The Rutherford memorial lecture is being delivered in the University Hall by Sir Harrie Massey, Quain Professor of Physics at University College, London.

Rutherford's life after he arrived in Cambridge and began to show the vision, experimental resourcefulness and intellectual courage that were to make him the recognised leader in the new world of atomic and sub-atomic physics, has been well documented by biographers. Less is perhaps known of him as a student, but the University has many historic mementoes of its greatest graduate.

The den in which he carried out his earliest scientific experiments in the old quadrangle is preserved and marked by a plaque with these lines from Horace: Exegit Monumentum Aere Perennius — he created a memorial more lasting than bronze. His portrait, a copy of Sir Oswald Birley's portrait in the Royal Society, London, and painted by Mrs J. Aris, of Sedlescombe, Sussex, has pride of place in the University Hall. A table which Rutherford's parents brought to Nelson in one of the first vessels bringing settlers to the province now stands in the foyer of the Registry.

A lasting memorial to Rutherford will be built at Ilam. Methodist and Presbyterian Churches in the University's district are now appealing for funds to complete finance for a nine-storey hall of residence for 150 men and women students. It will be called Rutherford Hall.

On Rutherford's death in 1937 plans were made to establish Rutherford scholarships and the University's greatest benefactor, Sir Arthur Sims, provided $20,000 to establish a Rutherford research fellowship. The Royal Society awards a Rutherford Scholarship similar to the 1851 scholarship.

There are also more intimate mementoes. The University has some 23 medals, including the Nobel Prize for Natural Science (1908) and the Order of Merit, which were awarded to Rutherford.

They are: the Franklin Medal to commemorate the 200th Anniversary of the birth of Benjamin Franklin (1906); the Elliott Cresson Gold Medal of the Franklin Institute of the State of Pennsylvania: for distinguished leading and directive work for the advancement of knowledge of electrical theory (1910); the Rumford Medal of the Royal Society of London; the Echegary Medal of the Royal Academy of Sciences, Madrid; the Barnard Medal for meritorious service to science, awarded by Columbia College, New York, 1910; the Silvanus Thompson Medal (awarded 1918) of the Rongten Society; the Franklin Medal of the Franklin Institute for signal eminent service in science; the Emile Picard Medal of the French Academy of Sciences; the Medal of the University of Paris; the Medal of the Institute of France, 1927; the Henry Shaw Medal of the Trustees of the Missouri Botanical Garden; the Faraday Medal of the Institution of Electrical Engineers: for notable scientific or industrial achievement (1930); the Albert Prince Consort Medal of the Society of Arts, Manufactures and Commerce; the Medal of the Literary and Philosophical Society of Manchester; the Medal of the Royal Society of Arts, Manufactures and Commerce; the Commemorative Medal of the Louisiana Purchase Exposition, St. Louis; the Harvey Medal of St. Bartholomew's Hospital, the 800th Anniversary; the Medal of the Italian Society of Science; the Copley Medal of the Royal Society of London; the Gold Medal and Chains of the Pontifical Academy of Sciences of the Vatican; and a Bronze Plaque recording admission as a Fellow of the Royal Academy Dei Lincei, Rome, 1918.

Held in the University Library are three books by Rutherford and a number of scientific papers, including the first paper to be published (Transactions N.Z. Institute, Vol. 27, 1894) and his last published article (Nature, January 8, 1938). There are papers and books about

Rutherford and a collection of his diplomas — D.Sc. (London), D.Sc. (Melbourne); Hon.D.Sc. (New Zealand), Sc.D. (Yale), M.A. (New Zealand), U.J.D. (Pennsylvania), M.Sc. (McGill), Hon. D.Phil. (Gottingen) and D.Phil. (Giessen) as well as his membership of many learned societies. In addition there is an early borrowing ledger which contains Rutherford's name when he was a young graduate.

The Last Potato

Rutherford's parents were not wealthy and it was only the award of a scholarship that enabled him to go to Nelson College. He came to Canterbury only as the result of winning another scholarship and the opportunity to go to Cambridge came only by chance. He had shown a close interest in mathematics at Nelson College and in 1888 he sat for a Junior University Scholarship. It is said that he was digging new potatoes in his parents' garden when news that he had won a scholarship was brought to him. "That," he said, flinging down his fork, "is the last potato I shall ever dig." He might well have remained a farmer had he not been successful and the world would have lost a great scientist — though New Zealand would undoubtedly have retained a wonderful farmer.

Similarly, after graduating Rutherford was recommended for an 1851 Exhibition Scholarship, derived from the profit of the first great international exhibition held in London in 1851.

In 1895 it was New Zealand's turn for the first of these scholarships but a Dr McLaurin was selected ahead of Rutherford to become New Zealand's first 1851 scholar. It was only when Dr McLaurin was unable, for family reasons, to take up the scholarship that Rutherford was able to go.

The University was small — 150 students and seven professors — when Rutherford matriculated in 1889 and the corrugated iron shed — the "tin hut" housing the Chemistry and Physics Departments on the site of the present Library — was in sharp contrast with the massive well-equipped buildings at Ilam that house the science departments today. With the enthusiasm of the eccentric Professor A.W. Bickerton (physics) and the quietly scholastic Professor C.H.H. Cook (mathematics) Rutherford made steady if not spectacular progress. He graduated B.A. and won a senior scholarship in mathematics in 1892 and after another year he graduated M.A. with the unusual distinction of double first-class honours in mathematics and physical science. In his fifth year he began his first experimental researches, working largely on his own initiative and feeling the first thrill of success as an original discover.

Radio Waves

It was the experiments of Heinrich Hertz at Karlsruhe into electric discharges in gases and electro-magnetic or radio waves that first stimulated Rutherford's enthusiasm. Knowledge of radio waves was rudimentary then and although they had been generated there was no satisfactory method of detecting them. With the help of Professor Bickerton and the demonstrator, Mr S Page, Rutherford set up a Hertz oscillator in his den, actuating the instrument with an induction coil or with an electrical machine of a type then in use. He found that if the alternating current impulses which he generated and transmitted to a receiver as waves were made to pass through a little coil of fine wire, they would magnetise steel needles or iron wires inserted in the coil or change the strength of their magnetisation if they were already magnets. The little coil with its core was made to change its position if it had been suspended in a magnetic field. Rutherford investigated this phenomenon completely and his findings involved him in measurements of time as short as the 100,000th part of a second — a really remarkable technical achievement for a beginner in pre-electronic days.

Ahead of Marconi

In another early experiment, Rutherford transmitted wireless waves down the full length of the "tin hut", which was 60ft long, and through the walls and was able to detect them with equipment outside. The experiments were published in two papers, one read to the College Scientific Society in 1894 and the other in the "Transactions of the New Zealand Institute". This work must have been in advance of that of Marconi and was certainly the first occasion on which wireless telegraphy was demonstrated in New Zealand. Sir Henry Dale, a colleague of Rutherford's at Cambridge, believed the first experiments at Canterbury were noteworthy not only for the bright promise they gave of Rutherford's later supremacy among experimenters but also as providing in essence the methods and ideas for his first research at Cambridge, which was an extension of them.
If Rutherford's early experiments showed signs of genius, his contemporaries did not find him precocious. Mr J.R. Wilkinson, one of the University's original students, who died in Rangiora some 15 years ago, once recalled that Rutherford took a close interest in all University activities — in Rugby, boating, which was a

popular student pastime in the nineties, and tennis. He drew the line at dancing, because, he said, he had no dress suit, but he recognised from the start of his studies that physical fitness was necessary for the concentration of mind he needed.
Rutherford was a keen member of the Debating Society and further opportunity came to him with the establishment of the Scientific Society in 1891. In his biography, Ivor Evans says the first subject chosen was "The Evolution of the Elements," indicating that Rutherford, even at that time, was already considering the possibility of sub atomic structure; but he jibbed at the word "evolution". In those days, Evans said, "evolution was not considered a respectable belief and though it was discussed the University community felt shocked and Rutherford himself thought that things were going too far. On this account, it was with some difficulty that he was persuaded by his friends to take the secretaryship of the Society in 1893".

Port Hills Hikes

Other students have recalled that Rutherford was conservative in manner but extremely fond of talking, not so much about his own work as the impact of science in general; but he was prepared to debate each and any of the subjects that students talk about. On moonlight hikes around the Port Hills, another popular student pastime, Rutherford's voice could often be heard above the others on such matters as the writings and personality of George Sand, the "in" writer of the time.
Sir Henry Dale says that Rutherford seemed a boyish, frank, simple and very likeable youth with no precocious genius but when he saw his goal he went straight to the central point. Mr Wilkinson, who served in the Library, recalled seeing Rutherford dashing in and out of his den day and night, in term and vacation improvising the equipment he needed for his experiments from every possible source. "He was a wonderful experimenter and a big mathematician," Mr Wilkinson said.
But Rutherford did not have much early facility for passing on his knowledge. While preparing his M.A. thesis he taught at Boys' High School, then situated in Worcester Street in the building now occupied by the Psychology Department. It is said that for long after his departure he remained a delightful memory to the boys. He was, says one biographer, ahead of his time in allowing pupils to have the answer book for mathematical problems he set but with infinite trust he rarely inspected the way the problems were worked out.
Much has been written about Rutherford's work after his departure for Cambridge. The work was probably best summed up by Rutherford when he agreed to accept the Faraday Medal of the Institution of Electrical Engineers in London. A short film, a copy of which was presented to the University, was made at this function and in it Rutherford said:
"In our laboratories today, we live in an atmosphere dim with the flying fragments of exploding atoms, and on this occasion I wish to say a few words on the methods and ideas employed to break up atoms and to realize, if even on a small scale, the old dream of the alchemists of transmutation of one element into another. This is a problem in which I have been personally engaged during the greater part of my scientific life, and during this time I have witnessed an astonishing increase of our knowledge.
"At the close of the nineteenth century, the labours of the chemist had resolved the matter of our material world into 80 or more distinct elements, and the atoms of these elements appeared to be permanent and indestructible by the forces then at our command. A great change in our ideas resulted from the discovery of the electron and of the spontaneous radioactivity observed in the heavy elements, uranium and thorium. Soddy and I were able to show in 1903 that radioactivity was a sign and a measure of the instability of atoms, and that the atoms of uranium and thorium were undergoing a series of spontaneous transformations, giving rise to thirty or more new radioactive elements. These elements were ephemeral and broke up according to a definite law and either a massive α- particle or a light β- particle was hurled out during the explosion of an atom. It soon became clear that this property of radioactivity was confined to only a few elements, while the great majority of the ordinary elements seemed to be permanently stable over periods of time measured by geological epochs.
"The next problem was to examine whether means could be found to break up the stable elements by artificial methods. Before this could be attempted with any chance of success, it was necessary to have a clearer conception of the structure of atoms. The idea of the nuclear structure of all atoms, which I suggested in 1911, has proved very useful for this purpose. It became clear that to effect a veritable transformation of an atom, it was necessary to change the charge or mass of a nucleus, or both together. Now the minute nuclei of atoms are held together by powerful forces, and to effect their disintegration, it seemed likely that a very concentrated source of energy must be applied to the individual atom. The bombardment of the nuclei by the energetic alpha particles from

radium appeared to be the most promising method for such a purpose. Acting on these views, I found in 1919 that nitrogen nuclei could be transformed by bombarding them with swift α particles, hydrogen nuclei — or protons as we now term them — being ejected with high speed as a result of the transformation. Later we were able to show that a number of light elements could be transformed in a similar way.

"To progress in our knowledge a more copious supply of bombarding particles of different kinds was necessary. Charged atoms of various sorts can be produced in vast numbers by the electric discharge through gasses and then accelerated by the use of high voltages. In this way, we have been able to obtain for our experiments in transmutation intense beams of protons and α particles, while the discovery of heavy hydrogen has given us a new projectile of remarkable efficiency in transmuting atoms.

"By these and other new methods, we are able to break up atoms in a great variety of ways, and produce a number of new elements, or rather isotopes of known elements not observed before. Some of these are found to be unstable and break up according to a definite law like a radioactive element. The discovery in these experiments of neutrons — uncharged atoms of mass 1 — has proved of great significance and importance, and has given us a much clearer understanding of the actual structure of nuclei.

This new field of work is now attracting much' attention throughout the scientific world, and the progress of our knowledge is very rapid. We are witnessing today the rise of a new department of fundamental knowledge — Nuclear Chemistry which is concerned with reactions and changes which may be brought about in the minute world of the atomic nucleus."

PERSONAL

Dr Leslie Symons, a senior lecturer in geography, has been awarded a Simon Senior Research Fellowship by the University of Manchester for 1967-8. He will study land use in Russia.

A gift made by Lord Simon of Wythenshawe in 1944 permits the University of Manchester to make available these fellowships, which are intended to set free for research and writing scholars of mature years who are considered by the university to be capable of doing work likely to prove of practical importance in the social sciences.

Dr Symons has left to take up the Fellowship in October of this year and continuing through 1968.

He will be engaged at Manchester in research into contemporary development in agriculture and associated land use problems in the U.S.S.R. He aims to study the evolution of state and collective farms, the changes in the allocation of land held by these forms of farming, and the progress towards more efficient use of resources under this organisation.

Dr Symons has already published several articles on agricultural and land use planning in the Soviet Union. He is author of 'Agricultural Geography', various geographical publications, and editor of 'Land Use in Northern Ireland'.

Dr Symons, a graduate of the London School of and Queen's University, Belfast, was a lecturer in geography in Northern Ireland from 1953 to 1963. During this period he spent a year as visiting lecturer at Canterbury. He returned in 1963 as a member of the staff.

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Mr J.E. Cookson, a graduate of the University who is at present studying for a Ph.D. at St. Andrews University has been appointed a lecturer in History. While he was preparing his M.A. thesis Mr Cookson was a temporary assistant lecturer in the History Department and was awarded a Commonwealth Fellowship to study overseas in 1965.

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Mr W.D.J. Cotton has been appointed a lecturer in Accountancy. Mr Cotton a Canterbury graduate and former tutor in the Accountancy Department, spent a year in London with a leading international firm of chartered accountants and specialised in the statistical techniques applied to accounting and auditing. Earlier this year he was appointed by the N.Z. Government to assist in the newly developed degree programme in accountancy in Singapore, a joint programme between the University of Singapore and the Singapore Polytechnic.

The Geographic Board has approved names suggested by the Naming Committee for two of the streams which run through the University at Ilam. The tributary of the Avon behind the Engineering School is to be called Okeover Stream and the tributary running between the Registrar's house and Christchurch College will be known as Ilam Stream.

5387 Students

UNIVERSITY'S ROLL GROWS FAST

With 22% of the student role in New Zealand, the University of Canterbury appeared to be growing faster than other universities, the Vice-Chancellor, Professor N.C. Phillips, told Council when commenting on the official enrolment figures presented to the University Grants Committee.

The figures showed a total enrolment at Canterbury on July 1 of 5,387 compared with 4,897 at the same time last year, an increase of 10%. The number of first year students was 1,502 compared with 1,345 last year, an increase of 11.7%.

The Department of Education projections for 1967, as published in 1959, suggested a minimum of 23,600 students in all universities, which was only 400 fewer than the maximum predicted for this year in the 1967 projections.

For the universities of New Zealand as a whole this year's roll was very much nearer to the minimum predicted in 1959 than to the maximum.

In Canterbury, however, the figure this year of 5387 compared with the 1959 minimum projection of 5100 and the maximum of 5740; i.e., it was 5.6 per cent above the minimum and 6.2 per cent below the maximum.

Canterbury was nearer the middle of the predictions made in 1959 than the university system as a whole, the Vice-Chancellor said. This was not the same as saying that Canterbury had grown in numbers more rapidly than the Universities as a whole but this seemed likely.

Canterbury had enrolled 22% of the total student population in the country in 1967. There was a substantial increase in the Faculties of Arts and Science, 15% this year, in Arts, and 16.4% in Science. Law, Commerce, Music, Engineering and Fine Arts, were relatively stable. Music was exactly the same, Engineering showed a slight temporary drop of 2.4% and the others showed a slight increase. Arts remained the largest faculty, with nearly 2200 students.

One interesting feature was the rapid rise in first-year students in Mathematics classes. It had been expected that with the introduction this year of General Maths.I, which was being taught on the City site, the numbers in Pure and Applied Maths.I would fall or remain steady.

However, the roll in Pure Maths.I was up by 100, and in Applied Maths.I by 120, and the enrolment in General Maths. was 170, i.e. there were 390 more enrolments in Stage I Maths. classes this year. The highest Stage I enrolment continued to be English I, with 681 students.

Of the new units introduced this year, Asian History attracted 39 students and N.Z. History 138. The roll in Constitutional History and Law was 122.

Other matters of interest were the above-average rise in the number of graduate students for Master's degrees from 234 last year to 282, and for Ph.D. from 102 to 138. There was a slight increase in the number of overseas students to 239.

Between 1963 and 1967 the total student enrolment had increased by 42.2%. During the same period, the staff establishment had increased by 43.6%. The number of staff was only just keeping pace with the rise in student numbers; but the proportion of graduate students was higher; student load was increasing more rapidly than student numbers; and the academic staff was less efficiently deployed than in 1963 because the division of the University between the two sites was more serious now. The numbers of technical staff were considerably greater — an important contribution to improving the staff-student ratio.

In the quinquennial submissions about four years ago, the University aimed at improving the staff-student ratio by the end of the Quinquennium to 1 to 9.9. It was now 1 to 13.89. In the block grants provision was made only for what the University Grants Committee called a modest improvement in the ratio, and the improvement to date was very modest.

In the year ended 31 May, 1967, the University had awarded 823 degrees and diplomas.

TWO GRADUATION CEREMONIES

Two graduation ceremonies are to be held by the University in the future, one in the morning and one in the afternoon. They will be identical except that the full graduation procession will be held only before the afternoon ceremony.

The Vice-Chancellor, Professor N.C. Phillips, said the University Council regretted the necessity for two graduation ceremonies but it was one of the prices to be paid for becoming a large university.

The first ceremony at 10 a.m. next year will be for the Faculties of Arts, Law and Commerce and the second at 2.30 p.m. for the Faculties of Science, Engineering, Music and Fine Arts. The order of the ceremonies will be reversed each year.

It is hoped to arrange a short entrance procession before the morning ceremony. Light refreshments will be served at the University after both ceremonies.

The Vice-Chancellor said Council believed the University had reached the limit of its efficiency without loss of dignity at the last graduation ceremony, at which 668 graduands were capped. Although speeches were very short the ceremony lasted from 2.30 p.m. to 4.30 p.m. Next year 725 graduands were expected and 780 in 1969.

''Canterbury is the last major university in New Zealand to divide its graduation ceremony'' said Professor Phillips. ''Pressure of numbers is the only reason''.

Canterbury had probably the highest proportion of graduands receiving degrees in person, because Council discouraged conferments in absentia. The change would have some benefits besides saving of time, Professor Phillips said. The demand for gowns and trenchers would be spread, the number of guest tickets for each graduand would probably be increased from two to three, and the tea parties would be more easily managed.

Professor Phillips said that he regretted that the division by faculties tended to perpetuate the present division between the city and Ilam campuses, but the communities of interest seemed to Council more satisfactory than division by alphabet or other means which had been considered.

Mr John Allnut, aged 22, who has been blind since he was six months old, has obtained a first class honours degree in physics at Nottingham University. He plans to study for a Ph.D. at Sussex University.

Planting at Ilam

Good use has been made of this spring to plant trees at Ilam. As the result of the adoption of a landscaping plan described in the last issue of the ''Chronicle'', limes have been planted around the Science buildings. Yunan poplars have been planted to the east of the Students' Union and along the western Creyke Road entrance of the Engineering School tulip trees have been planted.

The Vice-Chancellor told Council that the Ministry of Works was making the best use of the remainder of the planting season.

Renovations on City Site

Departments accommodated for many years in outlying houses around the University's city site have appreciated the work the maintenance section has done to transform laboratories in the old science buildings into new offices, seminar and lecture rooms. Chemists, physicists, zoologists and botanists in their new buildings at Ilam would scarcely recognise the interiors of the buildings they occupied on the city site.

The Department of Education has now taken over the converted Chemistry block and the Music Department has moved to the house at 34 Gloucester Street vacated by the Education Department. The Philosophy Department is to go into the old Botany Department and the Political Science Department will move into the Cambridge Terrace house to be vacated by the Philosophy Department.

How Sweden's Students Mix

Establishment of student ''nations'' named after districts in Sweden with a student joining a ''nation'' corresponding to his own home area interested Dr Vida Stout (Zoology) during refresher leave spent in Uppsala University last year. In a report to Council, Dr Stout said each ''nation'' had its own building, usually specially designed, and acted as a students' union for its members. There were common rooms, cafeterias, sporting and cultural clubs, and celebrations arranged for all the traditional festivities and ceremonies.

''The nations act very much as a focal point in a student's life and there is much friendly rivalry between them. I found my nation, Varmlands nation, an excellent place in which to meet and talk to students and staff. In a relatively large university they are a good mixing ground for staff and students of all levels,'' she said.

Uppsala, one of the world's oldest universities, had approximately 15,000 students. Rather than expand departments, there had been subdivision to give new departments. Thus in Biology there were departments of Systematic Botany, Ecological Botany, Entomology, Genetics, Limnology, Microbiology, Zoophysiology and Zoology. There was a certain amount of overlap in the research interests of members of various departments and during her stay Dr Stout consulted, in connection with research, members of all these departments except genetics.

The Head of each department was the Prefekt, usually a professor, and there might be several professors in any department. Then there was the positon of Docent, an appointment usually for five or six years, for which the holder must have the docent degree. These were intended as primarily research positions with little or no obligation to teach. Many, however, were also appointed as extra university lecturers and did a normal teaching load.

There were also a few lecturers and several assistants, the latter reappointed from year to year and often working for a higher degree. Most of the assistants were 30 years of age of more,

married with young families, and the insecurity of their positions imposed a great strain and a good deal of tension. This insecurity and short tenure of most university positions led to many highly qualified Docent graduates taking positions school teaching, for which they were not trained. In the Department of Limnology the only member of staff with a permanent position was the professor.
The academic standard, certainly in science, was high and the students worked extremely hard. The standard of teaching seemed to be very variable and in some departments a great deal depended on the students themselves. The students were more mature than their New Zealand counterparts and usually took their work very seriously.

Dr Stout also remarked on the tradition and ceremonial of many university activities. Most of the Docent graduation ceremony was conducted in Latin. Each graduand was presented with a draped top hat or ring of laurel leaves according to the faculty, a gold ring, and a diploma. The hat signified liberty, the gold ring fidelity and the diploma the seal of excellence and privilege. At the time of each presentation a salute was fired from gunds outside the building – the number of shots depending on the kind of doctorate degree. First were the jubilee doctors, who gained their docent degree fifty years previously, then the honorary doctorates and finally the new docents.

Gifts Made to University

"It is a big task to build up library resources in a new subject and we are extremely grateful for this flying start" said the Vice-Chancellor when reporting several gifts to the library for the use of the new School of Forestry. The gifts, runs of forestry journals, were from Mr J.L. Harrison-Smith of Tauranga, Dr J.V. Hinds of Rotorua and Mrs M.M. Turnbull of Wellington. Mrs Turnbull and Mrs L.R. Butcher had also completed a basic list for Forestry.
Other gifts to the University included an offer by the N.Z. Refrigerating Company of $200 a year for five years for research in the Department of Chemical Engineering and a collection of recordings for the School of Music from Mrs P.J. Humphries.

Acclaim for Rowers

The University, and the Department of Mechanical Engineering in particular, has shared in the public acclaim which followed an outstanding New Zealand achievement in international rowing.

A squad of thirteen rowers was chosen to undergo intensive training and coaching in preparation for the World and American championships. Three of the rowers – Tom Just, John Hunter and Dick Joyce – are Third Professional mechanical engineering students at the School of Engineering. Just and Hunter were in the now famous final crews and Joyce, though selected for the tour, decided to remain in Christchurch.

The crew left New Zealand prepared for an all-out effort for the North American champtionship eights at St. Catherines, Canada. They won, defeating the world champion West German team, Australia and England (Oxford University). They then competed in the American championships and won both the American championship eights with Harvard University second, and the coxed fours. This was the first time the event had been won by a four from outside the United States of America.

In Mexico they also won the eights (against the Mexican national eight which is being prepared for the Olympics) and the coxed fours. The crews, both eights and fours, won every event in which they competed overseas.
All three students won their "red coats" (the emblem of success in a New Zealand championship event) at Waihola in 1967 – Just and Hunter in the eights and Joyce in the fours. Strangely enough Joyce had trained for the eights and Just and Hunter for the fours up to the date of the championships. They are all University Blues in rowing.

The rowers left New Zealand in top physical condition due no doubt in large measure to a training programme prepared by the University's Physical Education Officer, Mr A.S. Lewis, and supervised by a local gym specialist, Mr A. Pickering.

Facing picture: Lines and curves – a night study at Ilam by Mr Frank McGregor (Botany Department).

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