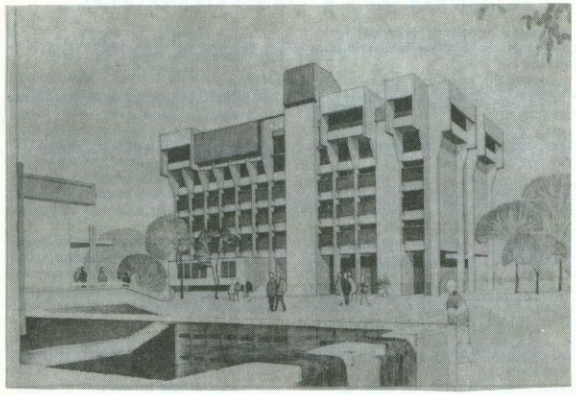
THE ILAM REGISTRY



Tenders are expected to be called late this year or early next year for the construction of the new Registry at Ilam, an impression of which is shown above. Construction, expected to begin in March, will take two years and the new building, accommodating about 225 persons, is due to be occupied in 1974.

The six-storey building, south-east of the School of Fine Arts and north-west of the James Hight Library now under construction, will be built under the "cash constraint" scheme used for the School of Forestry. Under this arrangement the University has been granted about $1 million to plan, build, furnish and equip the building. Since the money was granted building costs have increased and the area has been reduced to compensate.

The Council room will be on the top floor and will have tiered seating for about 100 persons.

The architects, Hall and McKenzie, are now undertaking working drawings and obtaining quantity surveyors' estimates.

The Registry is designed to serve a University of 10,000 students and there is provision for expansion in future.

Printery Moves

The University printery has moved from the former Geography block to the metal prefabricated building adjoining the Registry data processing section in Worcester Street. Mr W.E. Boyle has been appointed printer to succeed Mr E. Thompson, who has resigned to join the Wellington Publishing Company as general manager of its commercial division.

New Chairs For 1972

Establishment of three chairs has been approved by Council for next year subject to finance being available. There will be a third chair in Physics, a second chair in Education and a fourth chair (Statistics) in Mathematics.

A second officer has also been approved for the Educational Research and Advisory Unit. The Vice-Chancellor (Professor N.C. Phillips) told Council that that Dr Sally Hunter, the first full-time officer in the unit, the only one of its kind in a New Zealand university, was concerned with the research activities of the unit's work. The role of the second officer would be in the advisory field. "I hope the result of the appointment will be an attack on the problems of teaching and examining," he said.

Additional lecturers were approved for Economics, English, Maori, Political Science, Psychology and Sociology, Zoology (physiology), Electrical Engineering and Mechanical Engineering. The appointment of a school teacher fellow for education in 1972 was also approved.

Harvard Post For Classicist

Professor Ernst Badian, of the State University of New York in Buffalo, who is a graduate of the University, will take up an appointment as Professor of History at Harard University on July 1.

At 34, he has an international reputation as an historian of ancient Greece and Rome. His special interest is the public affairs of Rome in the period before the Empire, and he has also written on Greek history, on Alexander, and on political theory.

Professor Badian, who was born in Vienna, took his B.A. and M.A., with French and Latin as his main subjects, at Canterbury. Later, at Oxford, he took B.A. (1950), M.A. (1954) and D. Phil. (1956).

He taught at British universities before joining the Buffalo faculty in 1969, and has lectured in Canada, Australia, Rhodesia, South Africa, Germany, Holland the United States.

He is a fellow of the British Academy and of the Royal Numismatic Society, and has served on the Councils of both the Society for Promotion of Hellenic Studies and the Society for promotion of Roman Studies.

He also belongs to the British School at Rome, the Classical Association of Canada, and the American Philological Association.

UNIVERSITY OF CANTERBURY

chronicle

Vol. 6 No. 4
June 18, 1971

(Printed and Published by the Information Office, University of Canterbury)

CENTENNIAL DATES IN MAY, 1973

May 3 to May 7, 1973 – these are the dates on which the centennial of the University of Canterbury will be celebrated.

The principal ceremonial functions will be held in the Town Hall, the University being the first organisation to make bookings for the new buildings.

Several hundred visitors are expected to attend the celebrations. New halls of residence at Ilam are expected to accommodate 500 visitors and hotel bookings have been made for a further 300.

The Centennial Executive Committee, of which Professor H.J. Hopkins is chairman, will seek the support of all departments in making the centennial both a historic and academic occasion by arranging reunions of staff and graduates, academic discussions, symposia and meetings of professional organisations.

The community will also be invited to celebrate the centennial. Plans for public participation include displays in art galleries, which have already been booked, concerts, plays, and other cultural activities. An application has been made to the Post Office for a centennial stamp issue and a history of the university's first 100 years will be published.

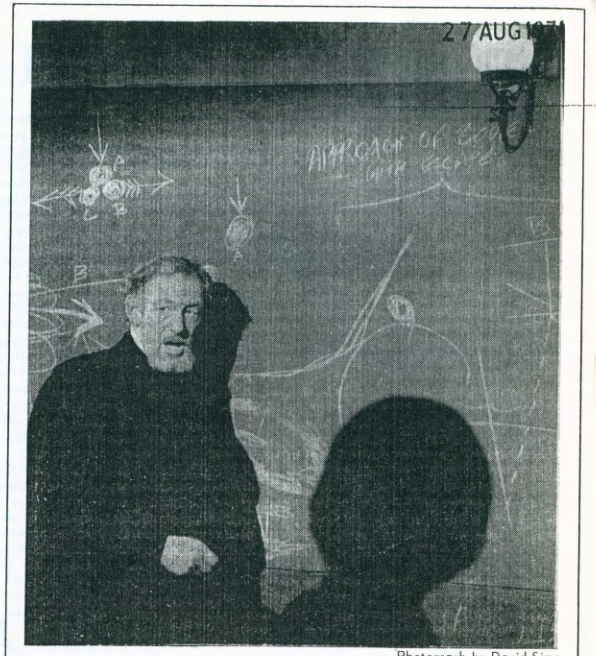
Professor Hopkins will be responsible for organising the programme. Members of the committee, each of whom is chairman of a sub-committee, are: Dr J.F. Burrows (accommodation), Dr M.P. Hartshorn (banquet), Mr M.V. Askew (printing and publications), Mr D.W. Bain (liaison with graduates), Mr W.D.J. Cotton (finance), Mr W. R. Hawkey (functions and entertainment), Mr D.S. Johns (catering), Mr D. A. Prater (ceremonies), and Mr M.G. Smith (liaison with student clubs).

Club Functions

'That opiates are the religion of the masses' is the title of a debate to be held in the University Club on Wednesday, 15 September.

The president of the Students' Association, Mr David Caygill, is to be invited to address Club members in October on his return from a visit to China.

The Club's Christmas Party has been fixed for Saturday 4, December.



– Photograph by David Sims.

The Christchurch actor, Bernard Kearns, as Professor A.W. Bickerton, in a sequence from the film on Rutherford being produced by the National Film Unit.

Noted Architect is 1971 Kennedy Fellow

Mr Hugh Jacobsen, a Fellow of the American Institute of Architects, will visit the University next month as the 1971 John F. Kennedy Fellow. He will give an address in the University Hall.

Graduating from Yale in 1955, Mr Jacobsen did a two-year tour as a lieutenant, Headquarters, Tactical Air Command, before beginning a practice in Washington in 1958. Since that time the buildings his firm has designed have won 46 national awards, among them the honour award of the American Institute of Architects for his project of 37 row houses in Baltimore. This award is the highest given for design in the United States.

Each year the *Architectural Record* selects 20 of the best houses in the United States and presents awards to the architects. Mr Jacobsen has won this award for eight consecutive years.

A member of the President's Commission of Alumni Affairs at Yale University and the Washington Planning and Housing Association, Mr Jacobsen is also a member of the executive committee of the Board of Governors of the Corcoran Gallery of Art, a trustee of the Gallery of Modern Art and a trustee of the Washington Theatre Club. He is also a member of the institute's honour awards jury in 1970.

Mr Jacobsen, who will be accompanied by his wife, was a visiting professor at the University of Cairo last year.

Open Entry to University

'Change Not Imminent or Likely'

The chairman of the University Grants Committee (Sir Alan Danks) has no reason to believe that any change in the policy of open entry to the University is imminent or likely. He made this statement in reply to a resolution passed by Council expressing concern about university accommodation shortages.

The resolution was: 'That this Council notes with concern that the possibility of Victoria University restricting student enrolment because of its shortage of accommodation, and the apparent delays in the building of Auckland's second university at Albany may bring pressure through increased student enrolment on this University, and that this Council calls on the University Grants Committee to assure us that the principle of open entry to university will not be sacrificed by present or future restrictions on university building programmes.'

In his reply, Sir Alan Danks said it had been the policy of successive Governments to ensure that facilities were made available to enable young people who had the entrance qualification and who wished to undertake university study to do so. 'I have no reason to believe that any change in this policy is imminent or likely,' he said.

'As I stated in answer to press inquiries this policy of open entry does not guarantee that every university and every faculty and school will remain permanently open to accept enrolments by unlimited numbers of students. A number of the university faculties are principally engaged in training people for specific professions and occupations and, in these cases, the accommodation and facilities are consciously planned to produce graduates in numbers assessed to be needed. Estimates of manpower needs and appropriate means of training are periodically reviewed and it is possible that, in the future, decisions may be made that further faculties or schools have reached a sufficient size.

'On the other hand, the size of some faculties at present restricted may have to be revised and investigations are at present taking place on your Council's request last year for a statement on the need for expansion of professional engineering education.

'Again, the University of Auckland will shortly find it necessary to apply general restrictions on enrolments and as a result some students, who would have preferred to attend a university in Auckland, will have to seek admission elsewhere in the system until the new university opens in about five years' time. I do not believe it likely that other universities will find themselves similarly placed.'

Sir Alan Danks said he agreed with the reported remarks of the Vice-Chancellor (Professor N.C. Phillips) that while relatively open access ensures that large numbers of young people had the opportunity of embarking on university study, there was an obligation on students to show reasonable academic progress as a condition of their continuing at university. 'It was with this in mind that the University Grants Committee recently resolved to recommend to universities that they review their policies on the re-enrolment of full-time students who have failed to pass any of the subjects of their courses at the end of their first year. (This restriction already applies at Canterbury).

'Continuation of the policy of open entry to the university system depends in part, as your Council's resolution implies, on the provision of funds for capital works – land purchase, buildings and equipment. In this connection it should be noted that the value of capital work under way at April 1971 was at the very high level of over $30,000,000, a figure which is expected to increase still further during the next year or two. The University Grants Committee accepts the responsibility of ensuring a reasonable balance according to needs of the allocation of money for capital development among the universities. However, over the next decade, the needs of the university system are likely to be such that it will be necessary for each university to use to the full all the accommodation which is available to it,' Sir Alan Danks said.

Professor L. Kay (Electrical Engineering) has been elected a Fellow of the Royal Society of New Zealand.

Chancellor Re-Elected

Mr T.H. McCombs, who was elected Chancellor of the University in December, 1968, was re-elected Chancellor for the next three years at the July meeting of Council.

Mr J.N. Matson was re-elected Pro-Chancellor.

Mr McCombs welcomed three new members of Council to the meeting. They were Dr R.T.E. Baker, Professor G.W.O. Woodward and Dr J.C. Scrivener.

The election of committee members resulted as follows:

Academic Committee: The Chancellor, Pro-Chancellor and Vice-Chancellow, Mr B.F. Anderson, Dr R.T.E. Baker, Mr R.H. Bowron, Mr F.D. Caygill, Professor A. Crowther, Mr A.R. Guthrey, Miss J.M. Herbison, Professor A. M. Kennedy, Mr D.B. Rich, Dr J.C. Scrivener, Bishop A.K. Warren, the Rev. D.R. Wilson and Professor G.W.O. Woodward. Chairman: Mr Anderson.

Finance and Property Committee: The Chancellor, Pro-Chancellor, and Vice-Chancellor, Mr Anderson, Mr D.W. Bain, Mr T.D.J. Holderness, Mr C.H. Perkins and Mr N.B. Ullrich, Chairman: Mr J.N. Matson.

Dismissals Advisory Committee: Mr J.N. Matson (deputy Mr D.W. Bain), Mr C.H. Perkins (Mr B.F. Anderson); Professorial Board nominees: Professor J.L. Ryan (Mr L.F. Hampton), Professor P.J. Lawrence (Dr R.W. Hopkins); A.U.T. nominees: Professor W.D. McIntyre (Dr J.J. Small), Professor B.A. Woods (Dr M.P. Hartshorn).

Common Fund Management Committee: Mr B.F. Anderson, Mr E.C. Robinson, the Vice-Chancellor and Mr C.H. Perkins (chairman).

Erskine Trust Management Committee: Mr B.F. Anderson, Mr E.C. Robinson, the Vice-Chancellor and Mr C.H. Perkins (chairman).

Tutorial Classes Committee: Council nominees: Sir George Manning and Miss J.M. Herbison. Professorial Board nominees: Professor W.B. Johnston and Professor A.A. Conway.

Honorary Degrees Committee: Chancellor, Vice-Chancellor, Mr D.W. Bain, Mr J.N. Matson and Bishop A.K. Warren.

A Canterbury College in Medieval Times

The existence of a Canterbury College in medieval times was referred to by the Chancellor (Mr T.H. McCombs) when he introduced the Dean of Christ Church, Oxford (the Very Rev. Dr Henry Chadwick) at a public lecture in the University Hall last month.

Referring to the associations between Christ Church and Canterbury, the Chancellor said the plans of John Robert Godley for a Church of England colony in New Zealand won considerable university support and 17 members of the Canterbury Association were Christ Church men. The name they chose for the province appealed to Anglicans and the name of the new city was a tribute to Christ Church.

'These associations, however, may be classified as no more than recent for there is a much older link, going back to medieval times, between Oxford and the Canterbury College founded here in 1873,' Mr McCombs said. 'The original Canterbury College was founded by Archbishop Islip in 1363, five centuries before this one and two centuries before Christ Church was founded. All that remains of that earlier Canterbury College are two names, Canterbury Quad and Canterbury Gate, marking the spot where the college stood, within Christ Church.

'Though it was a monastic college dependent on the Cathedral priory of Christ Church, Canterbury, this first Canterbury College, was a genuine college with a common seal and its own endowments. At first it was a mixed body of monk fellows from Canterbury and secular fellows, but two years after its establishment it was made a wholly secular body with John Wyclif as warden. The monks regained control after a law suit in 1370 and it consisted of a monk warden, from two to eight monk fellows and five secular undergraduate fellows. It is said that Sir Thomas More was for a time at the college. It resisted absorption by Wolsey, but came to an end with the dissolution of the monasteries in 1540 and the buildings were taken over by Christ Church, which was founded six years later. The buildings remained almost intact until the 18th century. Though entirely rebuilt by James Wyatt between 1773 and 1778, Canterbury Quad and Canterbury Gate still reproduce the place and the shape as well as the name of the medieval quadrangle of Canterbury College.

'These are the direct links between Christ Church and what is now the University of Canterbury, already preparing for its centennial. There are others. Before – and even after – this Canterbury College was established, it was the practice of Canterbury's men of means to send their sons to Oxford. And since there was such a direct link, what could be more natural than to send them to Christ Church. Twenty years ago the Rector of Canterbury asked the then Dean of Christ Church, the Very Reverend John Lowe, whether the House would be interested in designing and commissioning a mace for Canterbury. There was an enthusiastic response. The Rector asked three Christchurch men, Messrs M.H. Godby, J.H. Rhodes and G.R. Macdonald, who were all members of Christ Church, to assist in meeting the cost of the mace. Another contribution which also forged a link with this University, came from Mrs A.L. Poole, wife of the then President of St John's, Oxford. Mrs Poole was a daughter of Dr Arthur Dendy, Professor of Biology at Canterbury from 1894 to 1903.

'The oak from which the mace is fashioned was described as well seasoned in 1680 when it was used in the construction of Big Tom Tower, designed by Sir Christopher Wren. A beam was removed when the bell was rehung in 1953 and the mace was cut from it,' he said.

Plans for Computer Centre

Extensions to the Computer Centre at Ilam, totalling 4100 square feet net, have been taken a step further by the University Grants Committee. Authority has been given to prepare sketch plans and to make a preliminary assessment of costs.

The additions will comprise a duplication of the existing building linked by a walkway. The architects for the original building, Messrs Hall and McKenzie, will be the architects for the addition.

The Vice-Chancellor (Professor N.C. Phillips) told Council it was hoped to install a new computer in the building by the end of 1972.

Religious Studies Conference

Religious Studies is a relative newcomer to the New Zealand University scene; at Canterbury it was introduced in its present form in 1965, at Otago in 1966, at Massey in 1970 and Victoria will begin teaching Religious Studies next year. It is obviously important, in this as in other areas of study, to co-ordinate developments in New Zealand Universities and this was among the purposes of a Conference held at the University of Otago last month. Six members of the Philosophy Department from Canterbury attended as did representatives from Auckland, Massey, Victoria and Otago. An important contribution was made to the Conference by Professor Ninian Smart, Professor of Religious Studies at the University of Lancaster.

Topics discussed included developments in overseas universities (Britain and the United States) relationships with other disciplines, cross-crediting, possible lines of future development and co-operation in the purchase of expensive teaching and library materials.

A conference projected for 1972 will provide for further such discussions and the reading of scholarly papers.

Visit by Forestry Professor

Dr W.J. Libby, Associate Professor of Forestry and Genetics at the University of California, Berkeley, is spending July and August at the School of Forestry, where he will assist in courses in forest genetics. Dr Libby is visiting New Zealand as a Fullbright Research Scholar, and has already spent six months at the Forest Research Institute, Rotorua. At Berkeley, Dr Libby has worked chiefly on patterns of genetic variation in populations of forest trees, particularly those of Pinus radiata and the related pines of the offshore islands of California and Baja California. He is also active in the evaluation of breeding programmes for the improvement of forest trees, and last year was in charge of a new interdisciplinary curriculum at Berkeley dealing with questions of population, resources and environment.

Dr R.B. Keey, a reader in Chemical Engineering, has been appointed to the Board of the New Zealand Dairy Research Institute by the Minister of Science for a three-year term.

Wide Interest in Centennial of

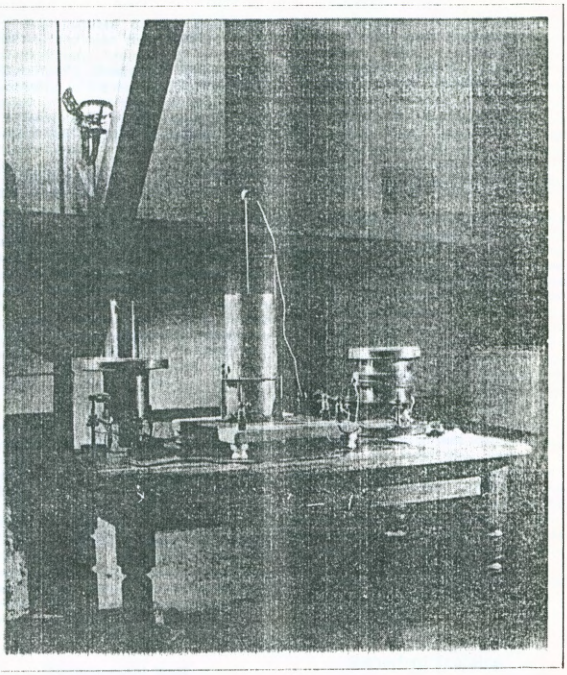
World-wide interest in the University's most distinguished graduate is being taken this month, the centennial of his birth. A documentary on Lord Rutherford's life is being made by B.B.C. television, the National Film Unit has just completed shooting sequences around the city site for a colour film on Rutherford and a television documentary is planned by the NZBC.

Next month a grandson of Rutherford, Professor P.H. Fowler, F.R.S., Royal Society Research Professor at the University of Bristol, will deliver the Rutherford memorial lecture in the University Hall on 'The Evolution of Elements'.

Rutherford's medals, including the O.M. and the Nobel Prize for Natural Science, will be on display at the lecture and will go on public display in the Canterbury Museum later.

Ernest Rutherford won a Junior National Scholarship at Nelson College in 1890 and came to Canterbury College in the following year when there were 150 students on the roll and seven professors to teach them. With the enthusiasm of the eccentric Professor A.W. Bickerton, whose ashes are inurned in the University Hall, Rutherford became a keen physics student and made steady if not spectacular progress in mathematics under Professor C.H.H. Cook, another of the foundation professors. He graduated B.A. and won a senior scholarship in 1893 and M.A. with first-class honours in mathematics and physical science in the following year.

Recommended for the 1851 Exhibition Scholarship, derived from the profits of the first great international exhibition held in London in 1851, Rutherford missed first selection. Ahead of him was a chemist, J.C. Maclaurin, who subsequently became Chief Government Chemist of New Zealand. His brother, R.C. Maclaurin, was later one of Rutherford's companions at Cambridge and eventually became President of M.I.T. But J.C. Maclaurin, for family reasons, was unable to accept the scholarship and Rutherford went to Cambridge to begin the research that was to give him a name in science alongside those of Newton and Faraday.



Apparatus similar to that shown above was used by Rutherford in his early experiments at Canterbury College. The photograph, by David Sims, was taken in the Rutherford "den" in the quadrangle during the making of a film by the National Film Unit of Rutherford's life.

Student Life

His life after his arrival in Britain, where he displayed 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 known of him as a student, but the University has many historic mementoes of its famed graduate.

The den in which he carried out his earliest scientific experiments in the western corner of the old quadrangle is preserved and marked by a plaque bearing an adaptation of some famous lines from Horace: *Exegit Monumentum Aere Perennius* (He created a monument 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 Sussex, has pride of place in the University Hall. A table which Rutherford's parents brought to Nelson in one of the first ships bringing settlers to the province stands in the foyer of the Registry.

On Rutherford's death in 1937 plans were made to establish Rutherford scholarships and Sir Arthur Sims, a considerable benefactor of the University, gave $20,000 to establish a Rutherford research fellowship.

Lord Rutherford's Birth

The University has many other mementoes. Lady Rutherford presented to the University the many medals won by her husband during his life and the Library has a fine collection of his books, papers, correspondence and diplomas awarded in New Zealand, the United States, Canada, Britain and Germany. All have been in considerable demand from scientific organisations in this centennial year of his birth.

Bickerton's Influence

Several biographers have speculated whether Professor Bickerton's strongly-held belief — it became almost an obsession — on stellar collisions and novae unconsciously influenced Rutherford's later work on collisions of alpha particles with atomic nuclei. Certainly Rutherford retained a deep respect for his old professor, often interceded on his behalf after he quit the College, and paid a moving tribute to Bickerton on his death.

But if Rutherford's early experiments showed signs of genius, his contemporaries did not find him a precocious student. Mr James R. Wilkinson, one of the original students, who died in Rangiora some 20 years ago, once recalled that Rutherford took a close interest in all student 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 that 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.'

The minutes of the Scientific Society indicate consideration of an extraordinary breadth of subjects. Rutherford's directness occasionally shows up in the minutes. For instance, those of one of the meetings began: 'It being cold in the normal lecture room, the Society adjourned to Mr Page's room.'

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.

Experimental Work

The late Sir Ernest Marsden, in his Rutherford memorial lecture in 1948, said it was not until his fifth year that Rutherford began an original piece of research, and in this he could have had little assistance, other than stimulating enthusiasm, from his Professor. His subject of research related to the way in which a rapidly-changing electric current is distributed in passing through a conductor, particularly a magnetic material such as iron. The preliminary experiments, as so often happens, clarified his ideas on the subject and led him to realize as unknown to him Henry in America had realized, that a magnetized thin steel wire may be used as a detector of an oscillatory discharge and the possibility of detecting Hertzian waves presented itself and he found himself able to send and receive signals over the length of the laboratory in 1894. The laboratory was a large corrugated iron structure known as the 'old tin shed' where the Library now stands. Such an achievement was most creditable and the measurement of short periods of time and other experimental devices he evolved for his researches were most ingenious yet simple when considered against the background of the apparatus available and the isolation of having no peer with whom to discuss his work.

He used as a source of electricity a battery of Grove cells whose zinc electrodes needed to be freshly cleaned and amalgamated each morning and the acid renewed; these were housed in a wooden box constructed at his Pungarehu home in the holidays.

Rutherford used the account of this work in his application for the 1851 Scholarship. When it appeared his application would be unsuccessful he undertook teaching at Boys' High School, then housed in what is now the Psychology Department in Worcester Street. It is said that long after his departure his brief stay remained a delightful memory to the boys. He was, says one biographer, ahead of his time in allowing his pupils to have the answer book for mathematical problems he set, but with infinite trust he rarely inspected the way the problems worked out.

It was at the College that Rutherford met and formed a deep attachment for Mary Newton, who became his wife in 1900.

Rutherford Explains

Rutherford best summed up his work overseas 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.

(Continued next Page)

from page 5

Rutherford Centennial

'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 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 under-going 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 radio-activity 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 the 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.'

Hall Wardens Appointed

Messrs D.A. Prater (German), M.J. Mitchell (Psychology), and Dr D. Lindley (Mechanical Engineering) have been appointed wardens of the three new University halls of residence at Ilam which are expected to be completed by December.

One of the halls is being financed by the Ministry of Foreign Affairs for Colombo Plan and other Government-assisted overseas students, though it has long been University policy to distribute these students through other halls it administers. One hall will be for men and the third may be for both men and women depending on the number of women seeking accommodation in the new hall. If 100 women seek places in the new hall it will be a women's hall.

O.R. SOCIETY ESTABLISHED

The Operational Research Society of New Zealand held an inaugural meeting last month for its Canterbury Branch, attended by 28 people, the majority of whom are associated as faculty members or students of various university departments. The following officers were elected:

Professor A.D. Brownlie (Economics) Chairman; Dr H.G. Daellenbach (Economics) Secretary-Treasurer; Mr A.T.G. McArthur (Lincoln), Mr T.A. Lusk (Electrical Engineering), and Mr J.B.C. Taylor (Mechanical Engineering), Council Members.

The Faculty members of Agricultural Economics (Lincoln College); Economics; Chemical, Civil, Electrical and Mechanical Engineering; Forestry; and Mathematics, presented surveys on the extent of Operations Research taught in various courses within their departments. This was followed by a lively discussion on the objectives of O.R. teaching at a University level, and its integration into the various functional disciplines.

The branch plans to hold bi-monthly meetings, where members and guest speakers will present papers on practical application in O.R., as well as theoretical papers of general interest to members. The aim of the branch is to promote a dialogue between people interested in Operations Research and its applications to decision making, and optimization in agriculture, business, Government and industry.

Visitor from L.S.E.

Dr C.R. Wymer, a lecturer in Econometrics at the London School of Economics, is on a three-month visit to the Department of Economics. He has been giving a number of lectures on Econometrics to Stage III and Masters students, and is currently working on a model of the New Zealand monetary system. Dr Wymer, who is a graduate of Auckland University and the London School of Economics, has developed a set of computational programs to handle general linear econometric models, which facilitate the estimation and investigation of differential equation systems. His major research interest and publications lie in the development of econometric techniques, and their application to dynamic systems, especially continuous disequilibrium adjustment models.

Seminar on Educational Planning

Professor P.J. Lawrence (Education) and the Pro-Rector, Professor J. Vaughan (Chemistry) are members of a sub-committee assisting in planning a seminar on educational planning to be held in May next year. It is being organised by the Advisory Council on Educational Planning in conjunction with the National Commission for Unesco and the Department of Education.

The aim of the seminar is to provide a forum for informed discussion on new developments in educational planning. Its main audience will be New Zealand administrators, teachers, and other interested persons and organisations. Where possible, discussion will draw on New Zealand examples and experience and the opportunity will be afforded to examine aspects of educational planning now receiving particular attention and new developments which are taking place in New Zealand and in some overseas countries.

To enable effective discussions to be held numbers will be limited to about 50 participants. Provision will also be made for up to 25 observers to attend and a number of these observers could come from the South Pacific/Asian region. It is likely that up to three overseas contributors will be invited to take part in the seminar.

The seminar will begin on the evening of Sunday 14 May, 1972, and conclude on Friday 19 May. It is intended to provide on the one hand a broad context for the discussion of education planning and, on the other hand, the opportunity for individual members to consider a chosen theme to some depth. The preliminary timetable on which planning is proceeding allows for three plenary sessions, one for the three main themes of the seminar.

The object of these plenary sessions will be to outline the present position with particular reference to New Zealand and to establish the context for the group discussions. About ten hours will then be spent in small workshop groups when members will discuss and inform each other about topics within their own field of competence. Three concluding plenary sessions will provide opportunities for reports from the workshop groups and for discussion on points raised in these.

Three themes which are particularly relevant to the current New Zealand scene have been decided on by the seminar planning committee. The first is educational planning in the context of national economic planning. The second theme will be devoted to education and training after the fifth form. Professor Lawrence and Professor Vaughan are members of this sub-committee. Topics such as the nature of the new demands for education and training pupils of post-fifth form years, the assessment of educational achievement and the role of research in education will be considered. The third theme will take up the question of the measurement and evaluation of educational objectives and performance. The various techniques of educational planning such as enrolment projections, flow statistics, manpower planning and social demand planning will be examined with particular relevance to the New Zealand situation.

Work of Zoologists on Snares Island

A sectional hut used on Antipodes Island in 1969 was set up by the Zoology Department's Snares Island expedition during the summer below the existing castaway hut on the main island of the Snares.

Reporting to Council on the expedition, Mr J. Warham said the hut had been divided internally to provide one double-bunked room and a large laboratory. Existing paths round the huts and to the main track were improved with the use of concrete and duckboards. No evident changes in the condition of the island since the previous year's visit were noted.

Members of the party were Dr M.C. Crawley (leader), Dr D.S. Horning (deputy leader), Mrs V.J. Horning, and Messrs H.A. Best, O.R. Wilkes and G.J. Wilson.

Zoological research was undertaken into invertebrates, birds and mammals. Dr and Mrs Horning put considerable effort into the study of insects, including the southern hemisphere tardigrada. The results obtained will be combined with those resulting from collections made on Campbell and Auckland Islands to form the sub-Antarctic section of this study.

Aphids and their plant associates were studied, previous entomological surveys were extended by extensive examination of litter, Mrs Horning undertook an extensive lepidoptera rearing programme to identify larvae, food plants and imagoes and various minor investigations were made, including mite infestation and ectoparasites from birds and their nests.

Mr Best, an M.Sc student, undertook a study of the Snares Island fernbird and studies on the New Zealand muttonbird and mottled petrel were continued by Mr Wilson. Mrs Horning checked the banded Buller's mollymawk group to establish whether breeding is annual or biennial and Mr Wilson checked the study colony of Snares crested penguins and with other party members banded the year's production of chicks at one study colony. Relatively little banding was done except for another 500 adult shearwaters.

For the first time a landing was made on Broughton Island and a brief visit enabled the vegetation map to be checked and the main penguin colonies to be plotted and the chicks counted.

Dr Crawley made a survey and census of the fur seal population and the distribution of sea lions was determined by rigorous search. Detailed meteorological data were kept.

The expedition was supported by a Nuffield New Zealand research grant, by the University Grants Committee and by the Zoology Department. Assistance was given by the Marine Department and the Navy. The party was taken to the island from Bluff by the fisheries research vessel, James Cook, on 16 November, but bad weather prevented the landing of all the stores and these were taken down in the fishing boat South Seas at the end of the month. Bad weather again prevented a scheduled change of members before Christmas and the South Seas made the change on 9 January. The final group was taken off by HMNZS Endeavour.