

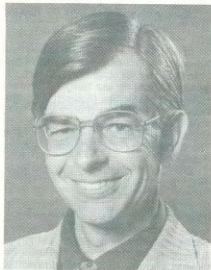
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UNIVERSITY OF CANTERBURY

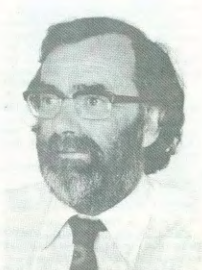
Chronicle



Dr Konraad Kuiper (English) who succeeds Mr Charles Manning (Classics) as Dean of the Faculty of Arts for a three-year term.



Professor A. M. Kennedy (Chemical and Process Engineering) who has been reappointed Deputy Vice-Chancellor by the University Council.



The University Council has accepted the resignation of Professor A. G. McLellan (above) from the headship of the Physics Department as from 30 November.

What e'er Is Best Administered Is Best

Professor J. A. Ritchie (Music) ended a close, ten-year association with the administration of the University last month when his terms of office on the Academic Administration Committee and the Educational Research and Advisory Committee came to an end.

On 1 July 10 years ago, Professor Ritchie began three-year terms as Deputy Chairman of the Professional Board, Deputy Chairman of Standing Committee, a Professional Board representative on the University Council and a member of the Academic Committee.

During this period he was Acting Vice-Chancellor in July and August, 1973, May and June 1974, August 1974 and August-September 1975.

At the beginning of July 1976, Professor Ritchie was re-elected Deputy Chairman of the Professional Board for a three-year term and Deputy Chairman of Standing Commit-

tee. Two years later Standing Committee became the Academic Administration Committee and the Deputy Chairman of the Professional Board became its chairman.

Professor Ritchie again served as Acting Vice-Chancellor in December 1976 and January 1977 and from March to November in 1977.

On 1 July 1979, Professor Ritchie was re-elected Deputy Chairman of the Professional Board and chairman of the Academic Administration Committee, this time for one-year terms. On their expiry he was appointed a Vice-Chancellor's nominee on the Academic Administration Committee for a three-year term. He was its deputy chairman and a member of its executive.

On the retirement of Professor P. J. Lawrence (Education) in 1980, Professor Ritchie was appointed chairman of the Educational Research and Advisory Committee. These latter terms expired on 30 June.

Council Meetings To Change

From time (almost) immemorial the University Council has met on the last Monday of the month. The vagaries of the calendar mean that sometimes its meeting follows the meeting of the Professional Board on the last Wednesday of the month; recommendations to the Council thus have to wait another month before they are considered by the Council.

As a result, the meeting day will change next year. The Council has decided to meet on the first Wednesday of each month March-December inclusive.

'Ware, Bulldogs

Dr Robin Bond (Classics) has been appointed University Proctor for a three-year term. His deputy will be Mr J. P. Walsh (Accountancy).

Professorial Board Committees

The following persons have been elected or appointed to Professorial Board committees and Boards of Studies. Where no year is shown the appointment is not for a fixed period.

The Vice-Chancellor is *ex officio* a member of all Professorial Board committees and Boards of Studies.

Academic Administration

Deputy Chairman of the Professorial Board, Professor A. M. Kennedy (Chemical & Process Eng.) Chairman, 1986; Vice-Chancellor's Nominee, Professor D. Davy (English), deputy chairman 1986. Deans of all Faculties: Dr K. Kuiper (Arts) 1986; Professor W. L. Jones (Science) 1984; Professor D. C. Stevenson (Engineering) 1986; Professor J. F. Burrows (Law) 1986; Dr J. A. George (Commerce) 1985; Mr T. J. Taylor (Music and Fine Arts) 1985; Dr A. G. D. Whyte (Forestry) 1984.

Executive Committee: The chairman and the deputy chairman: Secretarial enquiries: Mr D. M. Towns, Telephone Registry 871.

Timetable

Dr J. Austin (Chemistry), chairman; Deans of all Faculties, or their nominees (*ex officio*); Mr M. Sykes (Registry). Secretarial enquiries: Mr Sykes, Telephone Registry 705.

Drafting

Dean of the Faculty of Law (Chairman); Deputy chairman of the Professorial Board. Secretarial enquiries: Dr D. M. Towns, Telephone Registry 871.

Educational Research and Advisory Committee

Head of the Department of Education or his deputy; Director, Educational Research and Advisory Unit; Educational Research Officer; Educational Advisory Officer; Mr I. D. Johnston (Law) 1984. Dr R. W. Fisher (German) 1985.

A chairman and one other member are yet to be elected.

Academic Policy

The Vice-Chancellor (chairman); the deputy chairman of the Professorial Board, deputy chairman, Professor A. M. Kennedy (Chemical & Process Engineering) 1986; Four members elected by the Professorial Board; Professor R. Park (Civil Engineering) 1984; Professor J. M. Soons (Geography) 1984; Professor D. Davy (English) 1985; Professor W. D. McIntyre (History) 1986; Two members, elected by the lecturers, from among the Board members elected by the lecturers; Dr P. J. Bryant (Mathematics) 1984; (to be appointed) 1986; Vice-Chancellor's Nominee, Mr F. G. Tay (Economics) 1984.

Secretarial enquiries: Mr A. C. Wildbore, Telephone Registry 864.

Academic Staffing

The Vice-Chancellor (chairman); five members elected by the Professorial Board: Professor R. Bargh (Electrical & Electronic Engineering), 1984; Professor B. A. Woods (Mathematics), 1984; Professor K. T. Strongman (Psychology) 1985; Professor W. K. Jackson (Political Science) 1986; Professor G. F. Orchard (Law) 1986; Two members elected by the lecturers: Miss H. B. Debenham (English) 1984 and Dr P. J. Tremewan (French) 1985; Vice-Chancellor's nominee, Professor J. Vaughan (Chemistry), 1984.

Secretarial enquiries: Mr C. S. Kernahan, Telephone Registry 813.

Audio-Visual Aids

Elected Representatives: Arts Faculty, Mr N. M. Blampied (Psychology) 1986; Science Faculty, Dr J. R. L. Walker, (Botany) 1986; Engineering Faculty, Dr A. J. Nicholson (Civil Engineering) 1986; Music and Fine Arts Faculty, Mr R. H. McIlroy (Fine Arts) 1986; Vice-Chancellor's nominee: Professor J. M. Soons (Geography) chairman 1986; the Librarian (*ex officio*) or his representative); The Educational Advisory Officer (*ex officio*), deputy chairman, the Buildings Registrar (*ex officio*).

Secretarial enquiries: Mr J. K. Moir, Telephone Registry 857.

Computer Facilities

Four members elected by the Professorial Board; Professor B. J. Clarke (Accountancy) deputy chairman, 1984; Mr K. W. Duncan (Zoology) 1984; Professor J. J. Deely (Mathematics) 1985; Dr J. A. George (Economics) 1986; Vice-Chancellor's nominee, Dr R. M. Allen (Chemical & Process Engineering) 1984; The Director, Computer Centre (*ex officio*); The Registrar (or his deputy) (*ex officio*); Head of the Department of Computer Science (*ex officio*); Two members of the Computer Facilities Committee at Lincoln College; (Professor J. B. Dent and Mr N. S. Moutier); The chairman of the Computer Users' Group (*ex officio*).

Secretarial enquiries: Director, Computer Centre, Telephone 92-87.

Discipline

Dr C. G. Brown (Philosophy & Religious Studies), Deputy; Dr A. W. S. Baird (French), 1985; Mr J. A. Daverson (English) Deputy; Dr E. McCann (Economics), 1986; Vice-Chancellor's Nominee, Professor G. F. Orchard, (Law) Deputy; Professor J. F. Bur-

rows (Law), chairman, 1984; President of the Students' Association (1983; Mr A. Gray), Deputy, being a member of the Students' Association (1983; Mr G. Patterson): One student, with a deputy, nominated by the Students' Association (1983; Ms J. Morrell), Deputy; Mr G. Harvey).

Secretarial enquiries: Mrs F. Barnes, Telephone: Registry 866.

Library

Dr J. D. Bradshaw (Geology) 1984; Professor G. W. O. Woodward (History) 1984; Miss M. E. Belcher (English) 1985; Mr C. G. Brown (Philosophy and Religious Studies) 1985; Dr J. A. McWha (Botany) 1986; Professor K. T. Strongman (Psychology) 1986; Vice-Chancellor's Nominee, Professor H. McCallan (Mechanical Engineering) 1984; The Librarian (*ex officio*); student member (1983; Mr A. Gray).

Secretarial enquiries: The Librarian, Telephone 8738

Publications

Professor R. M. Blampied (Economics) 1984; Dr R. M. Kirk (Geography) 1985; Professor R. B. Key (Chemical & Process Engineering) chairman 1986; Dr G. W. Spence (English) 1986; the Information Officer (*ex officio*); the Librarian (*ex officio*); Mr A. N. Brooks (Editor) (German); Co-opted member Mr M. J. Halstone (Fine Arts).

Secretarial enquiries: Mr J. G. Puddle, Telephone Engineering 300. The students on the Professorial Board for 1983 are: Student President, Mr A. Gray; Education Officers, Mr S. Ferguson and one to be appointed; Four students nominated by the Executive Committee of the Students' Association: Mr P. Chyeme, Mr T. Muhlolland, Ms C. Syme and Mr W. Townsend.

Joint Board in Education

University Members: Head of Department of Education, Professor G. A. Nutall; Vice-Chancellor's nominee: Mr J. M. Jennings (Music) 1985; three members elected by the Professorial Board from its membership: Professor W. C. Clark (Zoology) 1984; Professor D. Davy (English) 1984; Professor W. E. Willmott (Sociology) 1985; two lecturers elected by the lecturers: Mr C. F. Cair (Mathematics) 1984; Mr C. M. McGeorge (Education) 1985.

Teachers' College Members: Principal (*ex officio*), Dr J. F. Mann; Principal's nominee, Mr B. Bradshaw; Deputy-Principal, Mr I. D. Stewart: One member of staff elected by the Board of Studies of the Primary Division; Mr E. R. Hundley 1984: One member of staff elected by the Board of Studies of the Secondary Division; Mr B. A. Vincent 1984: One member elected by the Academic Board; Dr D. H. Campbell 1982;

(Continued on next page)

People

Dr J. E. Fergusson (Chemistry) has been awarded an Erskine Fellowship to visit universities and research institutions in the United States, Canada and England for two months next year.

Dr S. Kemp (Psychology) has also been awarded an Erskine Fellowship to visit universities in Australia in connection with his teaching and research interests from 16 August to 16 September.

Professorial Board Committees

Two staff members elected by the staff: Mr C. A. Wright, 1984; Mr A. D. McBride 1985; **B.Ed. Students:** One student to be appointed by the University Students' Association (1983; Miss B. A. Power) and one by the Teachers' College Students' Association (1983; Mr J. R. Young).

Secretarial enquiries: Mr A. C. Wildbore, Telephone Registry 864.

Joint Board in Resource Management Canterbury Representatives: Dr J. Abrahamson (Chemical & Process Engineering) 1984; Dr J. A. McWha (Botany) 1984; Mr C. G. Goodrich (Sociology) 1986; Mr R. N. Kennaway (Political Science) 1986; Vice-Chancellor's nominee: Dr R. D. Bedford (Geography) chairman 1984.

Lincoln Representatives: Mr J. O. Taylor; Dr J. P. A. McArthur 1984; Professor R. S. Swift 1984; Professor G. R. Williams; Principal's nominee: Professor R. H. M. Langer.

Secretarial enquiries: Mr J. G. Puddle, Telephone Engineering 300.

Journalism

Head of the Department of Law or his nominee, chairman; Head of the Department of English or his nominee; Head of the Department of Public Science or his nominee; Head of the Department of History or his nominee; Two full-time members of staff engaged in the teaching of Journalism (*ex officio*); a professional journalist nominated by the Professorial Board from the Broadcasting Corporation of New Zealand; the Editor of *The Star*; the Editor of *The Press*.

Secretarial enquiries: Mr A. C. Wildbore, Telephone Registry 864.

Board of Liberal Studies

Mr R. M. Tobias (Extension Studies) 1984; Professor W. E. Willmott (Sociology) 1984; Professor R. B. Key (Chemical & Process Engineering), deputy chairman 1985; Dr C. M. McGeorge (Education) 1985; Dr J. R. Barnett (Geography) 1986;

Miss Helen Debenham and Mr J. H. Acheson, both of the English Department, and Dr E. D. Jones (French) have been granted leave to attend the XXII Congress of the Australasian Universities Languages and Literature Association in Canberra at the end of August.

Dr L. J. Cole (Botany) will be attending the Third International Mycological Conference in Tokyo while on leave 20 August-4 September.

Professorial Board Committees

Professor K. T. Strongman (Psychology) 1986; Vice-Chancellor's nominee, Professor D. Davy (English) 1984; The Director of Extension Studies (*ex officio*), chairman.

Secretarial enquiries: Mr D. M. Towns, Telephone Registry 871.

Lecturers On Board

Dr P. J. Bryant (Mathematics), Mr R. G. A. Didow (Sociology), Dr C. L. R. Gley (Zoology), Dr D. Novitz (Philosophy & Religious Studies), Dr P. J. Perry (Geography) and Dr D. F. Robinson (Mathematics), all 1984; Dr J. D. Bradshaw (Geology), Dr R. K. Green (Mechanical Engineering), Mr L. F. Hampton (Accountancy), Miss J. K. Maston (Law) and Dr I. F. Owens (Geography), all 1986: (Two additional appointments have yet to be made among this group); Dr J. G. Wilson (Philosophy & Religious Studies) 1986.

Dr Wilson is elected by the lecturers to the University Council.

Professorial Board nominees or representatives on other committees are:

On Chaplaincy Committee: Professor W. E. Willmott (Sociology) 1986.

On University Council: Professor W. E. Willmott (Sociology), 1984; Professor M. P. Hartsorn (Chemistry), 1985; Professor I. R. Wood (Civil Engineering) 1986.

Electoral College for New Zealand College of Educational Research: Professor G. W. O. Woodward (History) 1985.

On Joint Committee on Honorary Degrees: Professor R. B. Key (Chemical and Process Engineering); Professor R. Park (Civil Engineering); and Professor B. R. Penfold (Chemistry), all 1986.

On Lincoln College Professorial Board; Dr J. A. McWha (Botany) and Professor A. C. Rayner (Economics) 1986 with one appointment yet to be made.



Professor I. R. Wood (Civil Engineering) who succeeds Professor A. G. Williamson (Chemical and Process Engineering) as a professorial member of the University Council.

Mr K. R. Daniels (Sociology) will attend the Australasian Association for Social Work Education Conference in Sydney 19-21 August.

Dr R. R. Macintyre (Political Science) will present a paper at the Australasian Middle East Studies Association conference in Melbourne 26 August-4 September.

Dr N. Swainson (Political Science) will present a paper at the Development Studies Association Conference at the University of Sussex and visit the School of Urban Planning, University of California, Los Angeles, while on leave from 20 August to 20 September.

Dr P. A. Simpson (English) will attend the triennial conference of the Association for Commonwealth Literature and Language Studies in Guelph while on leave 8-21 August.

Dr D. C. Thorns (Sociology) will be presenting a paper at the Sociological Association of Australia and New Zealand annual conference in Melbourne while on leave 20 August-3 September.

N.Z. Astronomer To Be Remembered

The name of a distinguished graduate of the Physics Department will be perpetuated by the decision of the American Astronomical Society to endow a medal in her honour as its premier award. It will be the Beatrice M. Tinsley Medal, open to astronomers from all countries, in memory of Dr Tinsley.

The Royal Society of New Zealand, Private Bag, Wellington, has offered to collect contributions from New Zealand organisations wishing to add to the \$29,000 already raised by the American Astronomical Society. Contributions should be marked "Tinsley Memorial Fund" and sent to the Royal Society preferably by 1 September.

Beatrice Tinsley (nee Hill), who died two years ago at the age of 40 after a long illness with melanoma, made significant contributions in the field of galactic evolution and was one of the most widely known and respected theorists in modern astronomy.

Born in Chester in 1941, Beatrice Hill came to New Zealand in 1946. Her father was an Anglican minister who later became Mayor of New Plymouth. She went to New Plymouth Girls' High School and then came to Canterbury, gaining her B.Sc. and M.Sc. degrees in 1962 and 1963 respectively. She had a special talent for mathematics and considerable industry and ambition and was determined to pursue her studies to the highest possible level.

In an obituary in the journal *Physics Today* in 1981, Sandra Faber said of Dr Tinsley that she earned her Ph.D. at the University of Texas in 1967 in record-setting time. For her thesis research, Dr Tinsley studied the evolution of stellar populations in galaxies and devised a model to describe the complex interplay between star formation, stellar evolution, and the recycling of the interstellar medium with a degree of realism never before achieved. She was able to demonstrate that evolutionary changes in the properties of galaxies are large enough to be clearly observable over the range of lookback times of 5 to 10 billion years accessible with present telescopes. As Dr Tinsley emphasised, the expected evolutionary trends are so great a magnitude as to completely overshadow the small differences in galaxy brightness predicted in open and closed cosmological models of the universe.

This work, together with the many increasingly detailed papers Dr Tinsley wrote on related subjects over the next 14 years, changed the course of cosmological

Beatrice Tinsley Medal

studies. The redshift-magnitude diagram and other similar observations of distant galaxies, formerly favoured as cosmological tools, came to be viewed as even more effective methods for studying galactic evolution. Dr Tinsley's work thus helped to open up a new field of research, in which many groups are now planning extensive observations and in which preliminary, positive results have been reported. Dr Tinsley in her early career encountered several of the practical difficulties which have often beset women scientists, in particular, that of finding a permanent appointment consistent with her personal commitments. From 1969 to 1975 she held a variety of temporary and visiting appointments at the University of Texas, Hale Observatories, University of Maryland and Lick Observatory. It was not until eight years after completing her Ph.D. work that Dr Tinsley finally found a permanent home, first as an associate, then as a full professor at Yale University. This rewarding and fruitful association continued until her death.

Dr Tinsley, more than any other individual over the last decade, succeeded in illuminating and unifying the complex processes that constitute galactic evolution. Concepts which she either originated or played a significant role in developing included the chemical and isotopic evolution

of matter via nucleosynthetic processes, the importance of the stellar luminosity function and the physics of highly evolved stars in understanding the integrated properties of galaxies, and several new approaches to the problem of how stars die and return mass to the interstellar medium.

Dr Tinsley's activities at Yale were central to its present eminence in the fields of stellar and galactic evolution. The breadth of her interests unified the Yale department scientifically and helped to create an atmosphere in which a wide variety of research projects flourished. In his role as Director of Graduate Studies, Dr Tinsley was warmly appreciated by the Yale students, for whose needs she showed special concern. Women graduate students received much encouragement. Perhaps as a result of her attention, Yale produced several talented women Ph.D.s during her tenure.

"No tribute to Beatrice Tinsley would be complete without emphasising her strongly positive, even inspirational, impact on colleagues and students," Sandra Faber added. "Those around her were enlivened by Beatrice's obvious zest for her own scientific endeavours, a joy she never relinquished even during her long illness. Equally stimulating was her enthusiasm for research going on around her".

\$345,867 In Research Grants This Year

Research grants totalling more than a third of a million dollars from Government departments, commerce and industry and local authorities have been made to the University in the first half of this year.

The latest research grants, reported to the June meeting of the University Council, were \$16,800 from Boston College, United States, to Professor Leslie Kay (Electrical & Electronic Engineering) to develop the use of sensory aids by blind children; \$15,000 from Steel & Tube N.Z. Ltd., to Professor L. A. Erasmus (Mechanical Engineering) for the development of a dual phase splicing system; and \$2000 to Mr J. A. Webb (Electrical & Electronic Engineering) from the Electricity Division for research on a data plus-voice transmission on a standard voice band.

Also reported were gifts to the Computer Science Department of a Data General mini-computer, valued at \$20,000 from N.Z. Farmers Co-op Assn. of Canterbury, and of Data General New Zealand Ltd., computer equipment valued at \$46,000.

The donors and amounts of research grants for the first six months of the year were:

Alcoholic Liquor Advisory Council, \$30,762; A. R. Turner & Co. (N.Z.) Ltd, \$1,200; Boston College, \$16,800; Canterbury Frozen Meat Co. Ltd, \$5,258; Christchurch Drainage Board, \$2,900; Dairy Research Institute, \$2,300; Department of Education, \$9,150; Department of Lands and Survey, \$15,580; Department of Scientific and Industrial Research, \$106,992; Forestry Council, \$9,900; Gough & Hamer Ltd, \$5,500; Lyttelton Harbour Board, \$16,433.

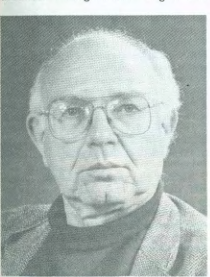
Ministry of Agriculture and Fisheries, \$2,000; Ministry of Works and Development, \$55,860; National Health Foundation, \$9,874; National Roads Board, \$28,600; N.Z. Electricity, \$2,000; N.Z. Energy Research and Development Committee, \$10,000; Petrochemical Corp. of N.Z. Ltd, \$5,978; Steel and Tube N.Z. Ltd, \$15,000; The Vernon Willing Trust, \$2,500; Youth Hostel Association, \$300.

Total, \$345,867.

Old Professors Honoured

Public lectures honouring the work of three former professors of the University will take place this month—the Macmillan Brown, Hopkins and Garrett Lectures.

The Macmillan Brown lectures, honouring a founding professor John Macmillan Brown, will be given this year by Dr Margaret Orbell (Maori) who will explore the meaning of the concept of Hawaki in Maori tradition—the theories relating to their origins and



Martin Esslin

Photograph by Marilyn Hooper, Audio-Visual Aids
aspects of the history and religion of the Maori people.

These lectures will be given in Room A1 at 12.30 p.m. on Wednesday 20 and 27 July and 3 August. Staff, students and public are cordially invited. The first lecture is entitled *The Homeland*, the second *The Voyages* and the third *The New Land*.

One of this year's notable Canterbury Visiting Fellows will give the Garrett Lecture, honouring a former Head of the English Department, Professor John Garrett, who retired in 1978 after being appointed to the position in 1947. The visitor is Professor Martin Esslin, head of radio drama at the B.B.C. for 14 years, who will speak on *Television in Britain, the United States and New Zealand*—a Comparison.

Three Public Lectures

Professor Esslin's lecture will be given in Room A1 on Wednesday 27 July at 8.00 p.m.

The third notable lecture is the Hopkins Lecture, honouring Professor Harry Hopkins, Head of the Civil Engineering Department from 1951 until his retirement in 1978. It will be given in the Conference Room, Town Hall, on Wednesday 20 July at 8.00 p.m. by Mr John Ingram, managing director of New Zealand Steel Ltd., and Pro-Chancellor of the University of Auckland.

In this lecture Mr Ingram will trace the progress of New Zealand Steel since its inception, the justification for its development and some of the problems it meets in ensuring its international competitiveness.

21 Years On University Council

Twenty-one years of service to the University were given by Mr T. D. J. Holderness, formerly of Gebbies Valley and now of Akaroa, who has retired from the University Council.

Mr Holderness was elected to the Lincoln College Council in 1949 and in 1962 he was appointed Lincoln's representative on the University Council. This came about, he said, because of his geographical location. Lincoln College drew its council members from distant parts of the South Island and it needed someone nearby to represent it on the University Council. He had, he said, enjoyed his time and had gained much from it. The Chancellor, Miss Jean Herbison, said Mr Holderness was one of a dwindling band of academics and laymen who had actually sat on the late and, by all accounts, unlamented Senate of the University of New Zealand. His farming background had made him a particularly valuable member of the Finance and Property Committee.

Miss Herbison also paid a tribute to others retiring from the Council. They included Mr W. T. Royal, who completed two terms as a co-opted member, Mrs Vi Cottrell and Mr Peter Yeoman, neither of whom sought election in the recent Council of Convocations election.

Replying, Mr Royal thanked the University for establishing and maintaining Maori Studies. Many young Maori people, as well

as others, had benefited from the course and now looked on the University as place for "us" and not for "them". Mrs Cottrell said that with her departure the numerical domination of men on the Council would be greater. She hoped this would be borne in mind when further appointments were made.

Mr Ingram is a Canterbury engineering graduate and he spent the first 12 years of his career in hydro-electric and pulp and paper machinery industries in Australia, Britain and Scandinavia. He was managing director of Cable Price Corporation Ltd before joining N.Z. Steel as chief executive in 1969. He is a past president of the Institution of Professional Engineers of New Zealand, a council member of the New Zealand Manufacturers' Federation and a director of Feltex New Zealand Ltd. He was also a member of the U.G.C.'s University Review (Brownlie) Committee which reported last year on its investigations into aspects of university development since the Hughes Parry investigation in 1959.

Merger Demands Scrapped

Forced amalgamations of two Australian universities with neighbouring colleges of advanced education have been stopped by the Federal Minister for Education, Senator Susan Ryan. Higher education institutions at Armidale and Newcastle in New South Wales will not now be obliged to merge, as the Fraser Government had demanded, under threat of withdrawing their funding.

During the election campaign in March, the Labour Party promised to stop the amalgamations. Senator Ryan said the Government rejected policies of coercion and contraction which had been the "hallmark of the previous government's approach to higher education".

Astronomers Again Frustrated

Fifteen years ago a research student at the Mount John University Observatory at Tekapo possibly detected a ring, or rings, round the giant planet Neptune; but a chapter of accidents prevented him from claiming an important astronomical discovery.

As a cloudy sky began to clear just after two o'clock one morning late last month, observers at Mount John had every hope that they might be able to confirm the finding. About 17 minutes later, Neptune, at present the most distant from the sun of the nine known planets, was due to pass in front of, or occult, a faint, distant star. The planet's shadow was predicted to sweep across the southern hemisphere of the Earth, including Australia and New Zealand. With a clear night sky observers would have had a splendid opportunity of probing Neptune's upper atmosphere.

The unexpected discovery of rings round Uranus during an occultation in 1977 sharpened interest in planetary rings and that interest was heightened three years later when a ring system round Jupiter was discovered by the Voyager 1 space probe. The rings round Saturn have long been known — they are readily visible through a binocular — though Voyager 1 photographs showed they were a multitude of narrow rings rather than the broad rings observed from Earth.

Astronomers reasoned that if three of the giant planets possess rings, Neptune might also have them. But Neptune is not much like its sister planets. The other three have regular satellite systems. Neptune has two moons. One of them, Triton, has an inclined retrograde orbit which will cause it eventually to break up, perhaps into a spectacular ring system. The other moon, Nereid, has a highly eccentric orbit.

Voyager 2 is due to explore the Neptune system in 1989. Until its shutters open there is six years, the best way of detecting planetary rings is during stellar occultations, with observers recording the intensity of starlight as the star passes behind the region round Neptune that could accommodate rings.

Occultation by Neptune of a star bright enough to be observed is comparatively rare. Neptune, in any case, is not easy to observe — it was not even discovered until 1846 — and only incomplete data have been recorded round the world during occultations. Two years ago, Dr James Elliot, of the Massachusetts Institute of Technology, who discovered the Uranian rings, arranged wide coverage of an

Elusive Neptune Rings

occultation and found no evidence for rings round the planet. But in the same year University of Arizona astronomers noted a significant gap in the signal they received during an occultation and interpreted it as being caused by the passage of a third invisible satellite of Neptune in front of the star.

The occultation last month was therefore awaited with unusual interest, especially in view of the announcement last year by Dr Edward Guinan, of Villanova University, in the United States, that he had evidence for a ring system round Neptune. The evidence was the data he had obtained at Mount John when he was a student there in 1968.

When he had finished lectures at Iam for the day, Dr John Leahshaw, a senior lecturer in astronomy, drove to Mount John for an all-night vigil. With him were Dr Denis Sullivan, of Victoria University, and a P.M. student, Mr Duncan Steel. Not best conditions prevailed in the Mackenzie country and the only clouds in the sky lay low over the alps.

But by 8.00 p.m. there was a southerly change and an hour later the sky was totally obscured. The astronomers thought the journey was in vain. But they checked predictions and calculations about the occultation and readied their recording equipment.

By midnight the clouds were very thick — the mountains were covered in snow next morning — and the technicians went to bed. But at 2.00 a.m. the cloud cover broke and the technicians, hurriedly awoken, opened the domes housing the two 24-inch telescopes to be used and fixed them on Neptune. Photometers to measure the light were switched on. These measurements would be recorded on a fast-moving strip chart.

When the occultation began, promising results appeared on the strip chart almost immediately — a wide gap in light intensity for which a planetary ring was a possible explanation. But the variations in the strip chart continued, even when the star was totally eclipsed and the observers could only conclude that the cloud, invisible in the black sky, was giving them bogus results.

Disappointments like that are familiar to astronomers, but occasionally they have good fortune too. The story of why it took Dr Guinan so long to come to the conclusion that he had probably observed a ring round Neptune at Mount John in 1968 was told in the journal *Science* last year. It was a cautionary tale about taking care of scientific observations, but it also revealed

Dr Guinan had a lucky streak. He was not even looking for rings at the time.

In April 1968, Ed Guinan asked a Canterbury astronomer, Dr Noel Dougherty, if he could interrupt the latter's observations of eclipsing binary stars on the 16-inch telescope at Mount John so he could observe an occultation of Neptune. He wanted profiles of Neptune's atmosphere from the photometric light curve of a star first as it disappeared behind the planet and later as it reappeared. It was a specially good occultation for that purpose because the star was as bright as the planet.

Dr Dougherty gave up the telescope and the high-resolution data were recorded on a strip chart while one second and 10-second averages went on to punched cards.

But there are sometimes slips 'twixt cup and lip. Ed Guinan went home by ship to Europe and by plane through Russia. He pored over the strip chart during the flight and placed it in a *Time* magazine, which he left in the plane during a stopover. When he returned, the magazine and the chart had gone.

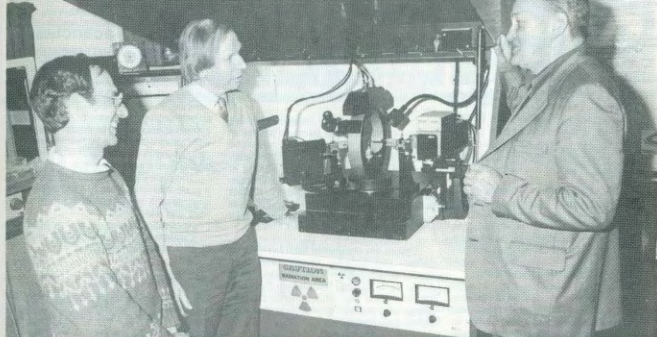
He still had the low-resolution punch card data, but they were useless for deriving any information about the atmosphere of Neptune. In any case the cards had been soaked during his sea voyage and were so badly warped they would be hard to read.

Ed Guinan thought the whole exercise was something of a washout, but if three of the cards away — and forgot about them until the N.A.S.A. probe discovered the Jovian rings and Dr Elliot found Uranian rings, using a similar occultation observation.

But the cards were in bad shape when Dr Guinan, now a professor at Villanova, rechecked them. He was able to get a student, Craig Harris, to duplicate them one by one by hand, a task which was not completed until last year. The result, though, was quite spectacular: a light curve showing a sharp occultation by Neptune and then, three minutes later, a 30 per cent dip lasting about two minutes.

Dr Guinan and a colleague, Frank MacIntyre, interpreted the dip as evidence for a ring about 5000 km above the Neptune cloud tops. They announced their tentative findings to the annual meeting of the American Astronomical Society last year and claimed to have evidence from the Mount John data for at least two rings round Neptune. They were probably composed of ice and debris from a satellite shattered by Neptune's gravitational forces. Others possibly missed observations there because

(Continued on next page)



Daily Travel Allowance

The rate of daily travel allowance for staff travelling on official business in New Zealand is \$40 per 24 hour day with effect from 1 July 1983. This supersedes the rate of \$35 per day paid from 1 July 1982.) Where overnight absence is not involved, the rate becomes \$6.00 per meal partaken, or \$18.00 per day.

In either case all inclusive grant-in-aid, up to the level of the standard rate, may be paid towards travel and daily allowance, in lieu of scale rate of reimbursement.

It is recognised that in some instances (for example travel financed out of research funds) travel rates may differ from those outlined above. The above rates should be applied in the absence of any particular alternative travel allowance rate.

Neptune's Rings

(From previous page)

they are so close to the planet and relatively translucent.

Dr Elliot may be able to resolve the question. About a dozen southern hemisphere observatories planned to record the occultation last month. If they too suffered from cloud, Dr Elliot rose to the occasion. He observed the occultation from an airborne N.A.S.A. observatory flying out of Melbourne. His results will be awaited with interest.

Notable Visitor to Chemistry Department, Dr Fred Basolo (right) president of the American Chemical Society, inspects the single crystal X-ray diffractometer, the central part of a system recently installed in the Chemistry Department for investigating molecular structure in crystalline solids, during a visit last week. With him is the Head of the Department, Professor Bruce Penfold, and Dr Colin Kennard, University of Queensland, who is visiting Canterbury to use the equipment. Dr Basolo, who remarked that his own university, North Western, Illinois, has no such equipment, is the joint author of *Mechanisms of Inorganic Reactions*, and has published numerous research papers. He joined the Chemistry Department at North Western University in 1946, became a full professor in 1959 and was appointed chairman of the department in 1969. He has won a number of awards, including the Guggenheim Fellowship and a National Science Foundation senior fellowship.

Photograph by Duncan Shaw-Brown, Audio-Visual Aids.

MacGibbon Painting Exhibition Soon

On her death in 1976, Mrs Alison MacGibbon left to the University a number of paintings to establish a collection to be known as the W.S. and Alison MacGibbon collection.

A total of 46 paintings was selected for the University collection. They include works by early New Zealand artists and some characteristic examples of the work of well-known Canterbury painters of the twenties and thirties as well as paintings from Britain and Europe.

Some of the paintings from the collection will be exhibited in the University Library shortly.

W. S. (Bill) MacGibbon was a well-known Christchurch public accountant and

a director of numerous companies. Educated at Rangiora and Canterbury College, he was very active in local body affairs in Christchurch, being president of the Citizens' Association and a member of most local authorities at various times. He was also president of the Canterbury Chamber of Commerce and of the Associated Chambers of Commerce.

Mr MacGibbon made a bequest, augmented by his widow, which enabled the sign to be erected at the main (Clyde Road) entrance to the University. The reinforced concrete beam, 36 ft long, is faced with grey Canaan marble from the Takaka Hills, on which the words "University of Canterbury" are incised.

Notices

University Entrance In Britain

The twenty-first edition of *The Compendium of University Entrance Requirements*, published this month in Britain, lists in 356 pages the first degree courses to be offered in British universities, with the exception of the Open University, in 1984-85 and the minimum entrance requirements for each course.

Compiled from material provided by the universities, the book is designed to help intending applicants and schools and colleges advising them. It is edited and published by the secretary of the Association of Commonwealth Universities (A.C.U.) on behalf of the Committee of Vice-Chancellors and Principals (C.V.C.P.).

The entrance requirements of most universities consist of a General Requirement and a Course Requirement prescribed for entry to a particular degree course. In the *Compendium* the alternative patterns of General Requirement are presented in tabular form for ease of reference. The 103 tables of courses and course requirements are arranged in three groups according to whether the courses concerned lead to graduation in one, two or three (or more) principal subjects. The detailed course requirements appear against each course title to facilitate comparison between different

universities for broadly similar degree courses. UCFA codes are quoted to aid identification of entries. Lists of courses on offer for the first time are provided separately.

General and course requirements are generally expressed in terms of passes at Ordinary (grade A, B or C) and Advanced level of the General Certificate of Education examination; guidance on the attitude of universities towards candidates with non-GCE qualifications (SCE, ONC/D, HNC/D and CSE) and to "mature" candidates unable to qualify in the normal way is given in separate appendices.

Copies are obtainable from Lund Humphries, The Country Press, Drummond Road, Bradford BD8 8DH (and not from A.C.U. or C.V.C.P.). The price is 7 pounds 50p in Britain but an additional postage charge of 1 pound 14p will be made on all copies going overseas.

Research Projects In Antarctic

The Ross Dependency Research Committee (RDRC) invites proposals for research projects to be considered for inclusion in the 1984/5 New Zealand Antarctic Research Programme. Research proposals may cover any of the earth, life or atmospheric sciences and be directed to a better understanding of the unique environment of Antarctica, its geological and geophysical structure, or those natural phenomena most suited to research conducted from southern latitudes.

Research proposals may be either short or long term, and based at New Zealand's Antarctic stations or in the field, depending on the logistic support required. Proposals should include a detailed outline of past research in the topic, biographical notes on team members, an outline of anticipated work, and details of required logistic support.

Applications are reviewed by the biological, physical or earth sciences working groups of the R.D.R.C., and applicants will be informed of the status of their proposals in late December 1983. Information on research directions, available facilities and how to prepare a proposal is available along with a support information form from the Secretary, R.D.R.C., c/o D.S.I.R. Head Office, Private Bag, Wellington.

Applications close on 31 August.

Staff Vacancies

PROGRAMMER-TECHNICIAN (COMPUTER SCIENCE)

Applications are invited for the above position in the Department of Computer Science. Applicants should have a degree or part degree in a relevant field, including some experience in computer programming. Duties will include technical (especially programming) work support of the teaching and research activities of the Department.

The salary for Technician Grade 1 is on a scale from \$11,351 to \$14,537 per annum; commencing salary according to qualifications and experience.

Applications close on 18 July 1983.

Conditions of appointment may be obtained from the Registrar.

PROGRAMMER-ANALYST COMPUTER CENTRE

Applications are invited for the above position in the University's Computer Centre. Applicants should possess at least a good Honours degree in Computing or a related discipline. Experience with any of Burroughs Large Systems, PRIME computers and applications packages would be an added advantage. The duties will involve maintenance of applications packages on B6930 and P750 equipment and P750 systems software work. A large part of the job will involve interaction with users. There will be some participation in a variety of development projects. The salary for Assistant Programmer-Analysts is on a scale from \$16,123 to \$18,732 and for Programmer-Analysts is on a scale from \$21,660 to \$25,684 per annum.

Applications close on 26 August 1983. Further particulars and Conditions of Appointment may be obtained from the Registrar or from registrars of all other universities in New Zealand.

Research Into Accidents

The Accident Compensation Corporation invites applications from individuals or organisations for grants to support research into general, domestic, workplace, road and recreational accident prevention, industrial health and accident victim rehabilitation.

Applications will be considered only if submitted on a special form, copies of which are available from J. R. DAVIES, Finance section, Registry.

Walter Burfitt Prize

The Walter Burfitt Prize, established by the Royal Society of New South Wales is awarded every three years to the worker in pure or applied science, resident in Australia or New Zealand, whose papers and other contributions published during the last six years are deemed of the highest scientific merit.

It was decided that the Royal Societies and the universities of the various States and of New Zealand, and other scientific bodies in Australia and New Zealand, should be invited to submit the names and publications of workers they deem worthy of consideration, and that scientific workers generally should be invited to submit their publications directly, while the Royal Society of New South Wales might award the prize to a worker whose name had not actually been submitted to it.

The nineteenth award will be made for work published during the six years ended 31 December, 1982. Nominations and publications should be submitted to the Royal Society of New South Wales not later than Friday 30 September.