February 1981 Volume 45 No. 1

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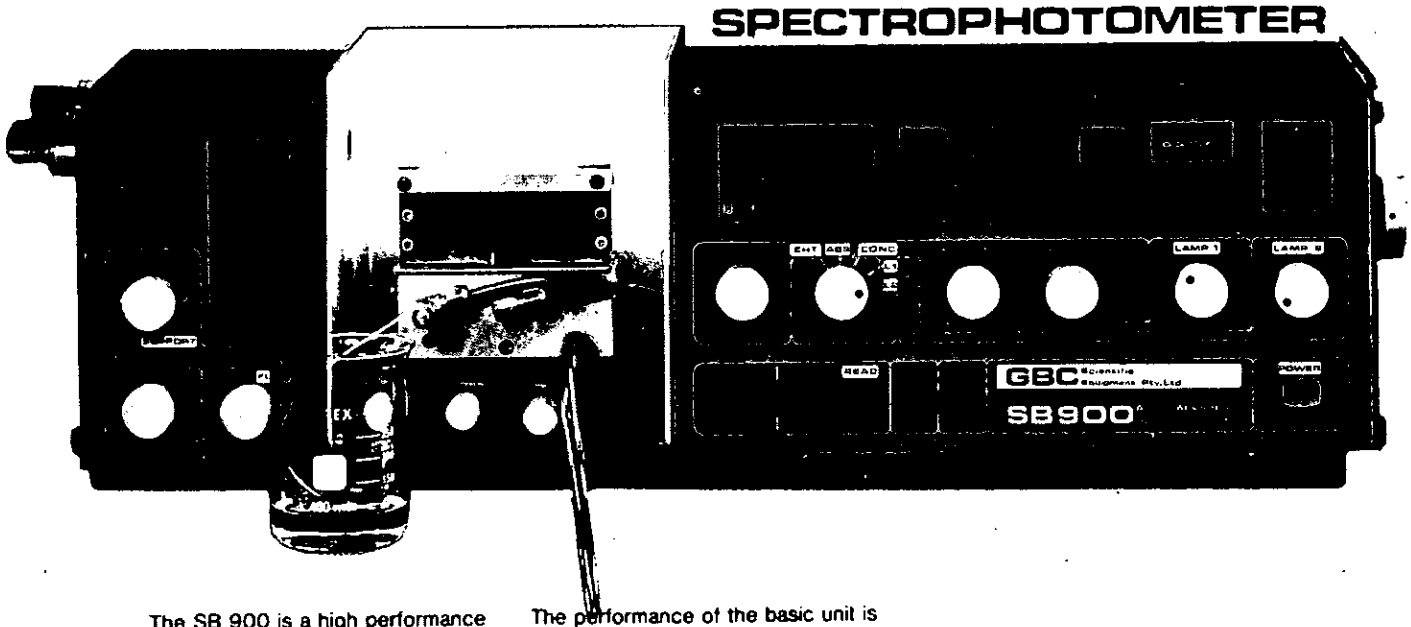

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CONTENTS

STOP PRESS

As we go to press we regret to advise the sudden death on January 9 at the age of 50 of Dr Bruce Cain, Director of the Auckland Cancer Research Laboratory, and one of our more distinguished chemists. An obituary will appear in a later issue.

A Golden Salute from

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Guest Editorial

The Institute: In Good Health For The Future

When I was asked to contribute to the editorial for this special number of the Journal, my thoughts went back to my own arrival in NZ in 1936 which coincided with the year of the first issue. The result has been some evocative reading of the early volumes, interrupted by the incompleteness of my personal series of the Institute's publications. This is probably a not unusual state of affairs when one is in close contact with an easily accessible University Chemistry Library which provides binding of the Journals. Of special interest was the Jubilee issue of 1955, commemorating the first 25 years of the activities of the Institute.

Alas, my own copy "has gone missing": that useful phrase incorporating the verb "to go" which suggests disappearance through independent locomotion. But so had the Chemistry Library's copy which had not been incorporated into the 1955 or even the 1956, volumes. The position became more serious when I found that the Jubilee issue was also missing from the bound volumes of the Journal in the Hocken Library. Fortunately however we have local members and one of them came to my rescue.

What a splendid account that Jubilee issue provides of the first 25 years of the Institute's activities: the history of its foundation written by **W.G. Hughson,** with its photographs of the first Presidents and the help each gave to its development, **Prof W.P. Evans,** Foundation President; **Prof Easterfield,** 1933; **Prof H.G. Denham,** 1934-35; **Prof F.P. Worley,** 1936-37. There are reviews by various authors dealing with the 25 years' activities; of chemical research and servicing in Government Departments and Research Institutes; of the Chemist and Chemistry in Industry, in the Teaching Profession and in the University. There are also valuable reviews of Chemistry Today and its Future and an absorbing article by Prof F.P. Worley entitled "Memories of Earlier Days of Chemistry in NZ". Now the NZIC can look back on 50 years of continued progress and influence. The hope of **Prof H.N. Parton** in one of his early editorials that members could get to know each other, if not by personal meeting, then through the columns of the Journal, has been largely achieved. Much credit must go to successive Councils and their diverse Committees which draw together members from different parts of the country; to the dedicated Editors of the Journal and particularly to our Conferences and the work of the respective Organising Committees. A landmark was the resumption of Conferences in 1945 in Palmerston North when **Dr J.C. Andrews** was President. This was attended by 130 members. For the first time it was possible, following approaches to employing bodies, for a number to attend Annual Conferences "on duty".

Activities are not all centralised. Branches also are active: meetings, lectures, reports on a variety of topics. The NZ Institute of Chemistry is obviously in a healthy state, thanks to the enthusiasm of its members.

F.G. Soper

Dr Soper is the longest surviving President (1946-47) of the NZIC. He came to Otago from Bangor, Wales, to head the Chemistry Dept., and in 1954 became Vice-Chancellor at Otago. He has a notable record of service both within and outside the University including being Deputy Director of Scientific Development (Chemical) DSIR during World War II and Director of the Woollen Mills' Research Association from 1937-1949, which services were recognised by the award of the CBE in 1950.

*He retired in 1963 with the title of Emeritus Professor and lives at Macandrew Bay, Dunedin. He is still active being a guest lecturer at the NZIC Conference in 1975 (Chem. In NZ **39**, 70, 97) [W.G. Hughson's history mentioned by Prof. Soper is reprinted in this issue.]*

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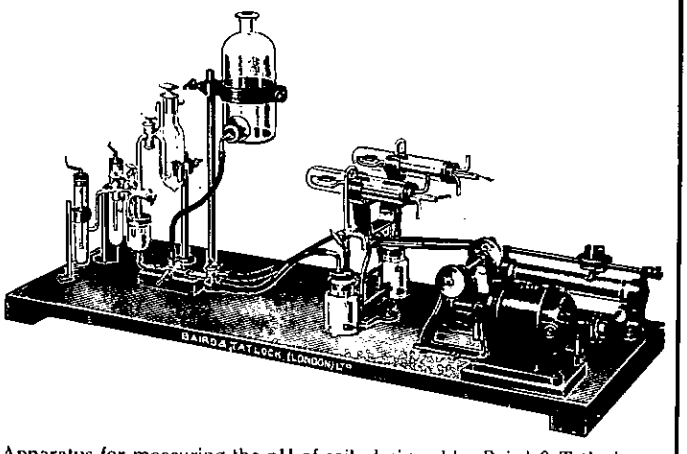
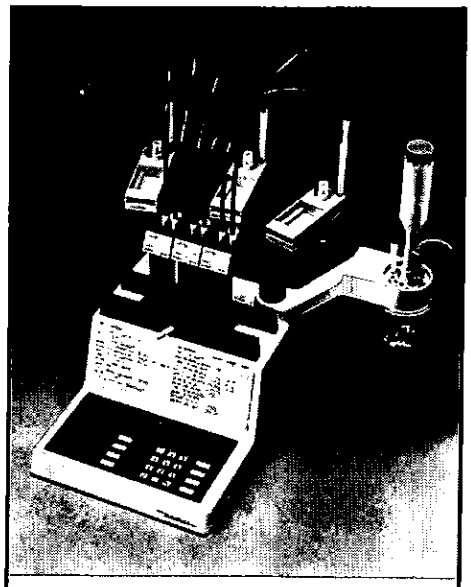


Apparatus for measuring the pH of soil, designed by Baird & Tatlock (London) Ltd, from Dr E. M. Cruthers' description in the 'Journal of Agricultural Science' Vol XV, p.201.

1981



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What's Happening

As mentioned elsewhere, **Gavin Fletcher** has resigned as Hon. General Secretary of the NZIC, consequent on his appointment as Director of the Heavy Engineering Research Association. He had previously been in charge of the Applied Research Office of the University of Auckland. The new Hon. Secretary of the NZIC is **Dr John Rogers;** we published an outline of his career in our issue for April, 1980, on the occasion of his retirement as Director of the Fertiliser Manufacturers' Research Association.

* * *

A chain of office has been prepared for Presidents of the Institute and it is expected to be used for the first time at the AGM in August.

* * *

Congratulations to sister bodies: the Royal Australian Chemical Institute has passed the 7000 mark in membership, and the Society of Chemical Industry, London, reaches its centenary this year. As a member for 44 years we still find its 'Blue Bits' a most interesting Journal and we are a little disappointed that the centenary could not have been related to our own Jubilee in the same year.

* * *

We are glad to note that the Government intends to introduce a 'Food' Bill into the House; this will separate legislation on Food from that of Drugs, a step which we have long advocated. The new bill will include restraints on misleading advertising and labelling of foods. Drugs will be covered under a Medicines Bill, where they belong.

* * *

A study conducted by the Wellington Clinical School with funds supplied by the Health Dept. has confirmed the findings of other scientists that 2,4,5-T has no significant effect on the rates of stillbirths, congenital defects or miscarriages.

A report in 'Chemistry and Industry' (London) deals with some exciting news from USA about the production of 'synthetic metals' — newly developed organic polymers which conduct electricity like a metal. A patent has been filed for a paper-thin battery made from a polyactylene film doped with traces of lithium iodide.

* * *

The Liquid Fuels Trust Board has rejected on economic grounds the idea of using methanol as a 15% blend with petrol since it feels that it would be better to export it. The Government has accepted the recommendation.

Conflicts of evidence between chemists have been much in the news in connection with the Arthur Allan Thomas case, which is referred to elsewhere in this issue, but the problem also came up when the English pharmaceutical company, the Wellcome Foundation, sued the American Parke Davis for a breach of their patent rights in the synthesis of an anti-bacterial compound, Trimethoprin (TMP) in the Auckland High Court. Wellcome gave evidence that chemists employed by them had found traces of an aniline derivative in the opposition product, which proved that the English process had been used. Parke, Davis produced evidence by **Prof Crank** of the Dept of Applied Organic Chemistry at the University of NSW that the conclusions drawn from the Wellcome analyses were not soundly based. **Mr Justice Prichard,** in refusing the application for an injunction against Parke, Davis, said that the conflict of scientific evidence could only be resolved should there be a later full hearing.

* * *

Dr Bruce Graham, Health Dept. Environmental Laboratories, Auckland, reports that **Dr Doug Wright** (Vice-President) has asked him to prepare an article on Atmospheric Pollution and Chemical Methods of Monitoring for the Central Propaganda Collecting Committee in Wellington.

He is to report by the end of February and it is intended that this material should be circulated to all Branches for use in publicity in relation to the NZIC's Golden Jubilee.

* * *

The 1981 NZ Quality Conference, organised by the NZ Organisation for Quality Assurance, will be held at the Central Institute of Technology, May 20-23. Theme is "Standards of Quality". Further details are available from **P. Morris** ICI Tasman Ltd., Private Bag, Upper Hutt.

* * *

Messrs P.E. Key and **D.F. O'Reilly** have been named managing director and secretary respectively of BASF NZ Ltd., the recently formed subsidiary of BASF AG, West Germany. The new company, based in Auckland, has been formed following last year's decision to separate the activities of BASF and Bayer AG, both of which traded under the name of their jointly owned subsidiary, Henry H. York & Co. Ltd.

Guest Speaker For Conference

A special guest speaker at the Golden Jubilee Conference in Auckland this year will be **Prof. A.J. (Jim) Parker,** FAA, FRACI, M. Aus. I.M.M., foundation Professor of Chemistry at Murdoch University, Perth, Western Australia, and Director of the University's Mineral Chemistry Research Unit. He is Vice-President of the Western Australian Branch of Royal Australian Chemical Institute and Immediate Past President of the Electrochemistry Division of the RACI. He has been awarded both the Rennie and H.G. Smith Medals of the RACI for his research and was elected FAA in 1979.

He has held academic appointments since 1955 at the University of Western Australia, the University of Southern California, University College of London, the University of Bergen, UCLA, the Research School of Chemistry at the Australian National University, and Murdoch University. He has worked with chemists such as Miller, Watts, Ingold, Hughes, Kharasch, Winstein, Bayliss, Foss and Birch.

Prof. Parker has published and researched in many areas of chemistry, held together by the theme of "Chemistry in Non-aqueous Polar Solvents". His papers deal with reaction kinetics, organic and inorganic reaction mechanisms, solution thermodynamics, electrochemistry, organic synthesis, sulfur chemistry, conductance, molar volumes, hydrometallurgy, pyrometallurgy, energy storage, semi-conductors for solar cells and refining of precious metals. He has assigned over 15 patents to Murdoch University and has published over 120 original papers, lectures and reviews. His current interests are in non-aqueous batteries, refining gold and silver, CdS/Cu_2S solar cells and copper processing.

He is married with 4 sons and prefers golf, cricket and hockey to chemistry.

Full information on the Conference, to be held August 23-28, will be featured in our April issue. Meantime enquiries should be directed to the secretary of the Conference Committee, **Assoc. Prof. Duncan McLennan,** Chemistry Dept., University of Auckland.

BRANCH NEWS

Manawatu

"Art in Science" was recently shown in the Manawatu Museum, Palmerston North. This most interesting display, being presented in many cities throughout NZ, consists of a collection of photographs provided by Divisions of the DSIR. It includes studies utilising photomicrography and the electron microscope as well as macrophotographic studies on life at the seashore.

Wellington

The Branch programme for 1980 was completed with a meeting in November on "The Pleasures of Sherry" and, later in the month, a visit to Taubman Paints. The former involved a session of wine tasting, prefaced by remarks from **Prof. John Tomlinson,** Chemistry Department, Victoria University about the viticulture and viniculture of sherry. Local and Australian examples were enjoyably compared with the genuine Spanish article.

Canterbury

The Annual General Meeting was held in October. After the election of officers for 1981 the meeting was addressed by the outgoing chairman, **Dr Bill Swallow** (DSIR Chemistry Division, Christchurch), who spoke on the occurrence of toxic honey in NZ.

In place of a regular evening meeting in November, the Canterbury branch held a successful one-day chromatography seminar which attracted over 40 participants, including many non-members.

Those contributing included **Dr Lewis Pannell** and Dr Bill Swallow (Chem. Div. DSIR) and **John Sharman** (Christchurch Public Hospital) who discussed developments in gas chromatography; and **Mrs Barbara Thomson** (Chem. Div. DSIR), **Dr Murray Munro** (Chemistry Dept., UC), and **Dr Campbell Page** (Wool Research Organisation), who dealt with aspects of hplc.

Otago

On November 7, a number of branch members attended an open field day in Southland to inspect and discuss at first hand with the Mines Division the proposed lignite resource and the various implications of mining, restoration and uses that this mineral will be put to. Visits were made to Croydon, Newvale, Goodwin and Mataura lignite deposits.

The AGM of the branch was held on November 13. The address was given by **Dr Joan McKenzie** of the Nutrition Department who spoke on "Nutritional Consequences of Trace Element Interactions".

The Branch committee has donated an annual prize for the Otago Schools' Science Fair. For 1980 the prize was awarded to Queen's High School Science Club for their entry — "Natural Dyes".

The NZIC Prize for the best Science Student doing Intermediate Chemistry was awarded to **Mr David Jensen** and the prize for the best Chemistry Student at Otago Polytechnic was awarded to **Mr Philip Jackson.**

The Rogers Report

Gavin Fletcher was the seventh General Secretary of this Institute. Members have reason to be grateful to him for his concern since 1976 to find ways of involving more of us in the Institute's activities and to proposing professional services the NZIC could offer us.

Thank you Gavin and best wishes for your work as Director of the Heavy Engineering Research Association.

Gavin in his final Fletcher Memorandum (p. 245, December, 1980) referred to services currently being considered and investigated. The writer wishes to hear from members about those and other possible services by letter to Box 1926, Christchurch, or telephone Auckland 278-8725.

* * *

Members are reminded to register their interest in attending the Institute's Golden Jubilee Conference in Auckland, August 23-28, with the Organising Committee Secretary, **Duncan McLennan.**

Alan Mackney and his committee, in the invitation issued at the end of 1980, summarise arrangements for the Conference as well as other activities planned for the Golden Jubilee year.

An important way to mark our Golden Jubilee will be to achieve a major increase in membership this year. The 1980 figure of 1406 is 408 more than in 1970.

Dr C. Hendy, (p. 231, December 1980) quotes a survey of the NZ Vicechancellor's Committee on Graduate Employment indicating just over 100 graduates in chemistry are now entering the work force each year.

The new student grade is one way Council hopes membership will rise more quickly. There is also potential for adding 500 more members in the next 3 to 5 years by recruiting from graduates of the Technical Institutes and Universities in the 1970's who have not yet joined the Institute.

Discuss membership with your colleagues. Application forms and information are available from your Branch Committee, the Registrar or me.

* * *

April 30 is the deadline for the Institute Prizes — the ICI Prize $500, the Shell Industrial Chemistry Prize $200 and the Student Essay Prize.

The current rules for these are published in the 1980 Year Book. Now is the time to complete your entry or make your nomination for these awards.

* * *

The President, **Dr A.J. Ellis,** in a press release at the end of December 1980 referred to the concern all members of this Institute have about personal criticism of **Dr D.F. Nelson,** Chemistry Division, DSIR, by the Thomas Commission of Inquiry.

Dr Ellis said the Commission had stated in writing after the hearing that it had been wrong in criticising Dr Nelson for refusing to change his opinion that the bullet from Jeanette Crewe's head could have been fired from the Thomas rifle. However, this admission was not contained in the Report of the Commission. The Report, unfortunately, claims Dr Nelson presented a false picture on this matter to the juries in early trials.

Dr Ellis points out that the Thomas Commission is a warning to technical witnesses because the normal rules of court behaviour apparently do not apply in Commission hearings.

The Council will be taking a long term look at the implications of these events in which another member, **Dr T.J. Sprott,** has played an important role.

Dr D. Kear, Director General of DSIR, has announced that DSIR is conducting a thorough investigation of the whole area of forensic work, administrative, scientific and legal procedures.

* * *

The brochure outlining the programme for the 4th International Symposium Trace Element Metabolism in Man and Animals to be held in Perth, May 11-15, 1981, refers to the death on August 19, 1980, of **Eric Underwood** OA, CBE, FRS, FAA, who was chairman of the Organising Committee.

Many members of the Institute will remember Emeritus Professor Underwood's attendance at ANZAAS in Auckland, January 1979, when he gave the keynote address "Trace elements and health — Technological and epidemiological aspects" to the second NZ Seminar on Trace Elements and Health.

Dr Underwood, working with **Dr J.F. Filmer** in Western Australia in the 1930s, showed that cobalt was essential for the nutrition of ruminants. Cobalt deficiency was the cause of "bush sickness" and "Morton Mains disease" here.

Eric Underwood enjoyed being a scientist. He had the gift of lucidity in speech and writing. His work has been of great economic value in Australia and NZ as well as in other parts of the world.

People

Dr Max Shepherd, has been appointed Professor of Experimental Oral Biology, a chair which is being funded by the Medical Research Council of NZ at the Otago University Dental School. Max has had close links with the School of Dentistry. After completing his B.Sc. (Hons) at Canterbury in 1965, he went to the University of Calgary, graduating Ph.D. in 1969, when he was appointed to the Biochemistry staff at Otago. From 1971-5, he was course co-ordinator for the Dental Biochemistry course, and in 1974 he was involved in the design of a completely new course which improved the academic standard and enabled candidates to integrate cellular biology with their physiology and anatomy courses. He was Chairman of the Otago Branch of the NZIC in 1979, and has agreed to chair the Committee for the 1982 NZIC Conference in Dunedin.

Assoc. Prof. M.G. Smith has been appointed Asst. Director (Part Time) of the Medical Research Council starting this year. He has responsibility for Dunedin liaison.

Dr Jim McQuillan of the Chemistry Dept., and **Dr Laurie Melton** of Nutrition, have been promoted to be Senior Lecturers.

Dr Ian Weatherall (Branch Editor) of the Textiles Dept at Otago has been appointed to the NZ Textile Industries Training Board. He is also the recipient of the F.R. Callighan Wool Award, enabling him to visit research units and Universities in Asia, Europe and North America.

Prof George Petersen, Head of Biochemistry at Otago, is on study leave this year, when he will be working at Cambridge in **Prof F. Sanger's** Laboratories. During his absence, **Dr Pat Sullivan** will be acting as Head of the Dept.

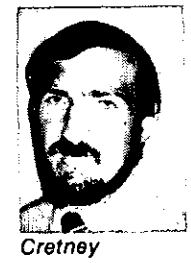
Mr B.D. McMath has returned to NZ after 2 years in the UK with British Oxygen Co., and now has the position of Manager, Gases Applications and Development with NZIG, Lower Hutt. In Britain he worked on cryogenic food freezing with liquid nitrogen, and the use of oxygen for effluent treatment. **Dr Carrick Devine,** the hard-working Secretary of the Waikato Branch, has been promoted to be Section Head at MIRINZ. **Mr M.T. Fisher** has left Greymouth High School and joined the Applied Biochemistry Division, DSIR, Palmerston North. **Mr S. Heng,** formerly of Lincoln College, is now with the CSIRO Fuel Geoscience Unit, North Ryde, Sydney. **Mr R.M. Weston** of Lockfast Chemicals, Papatoetoe, is now President of Bondtite Hawaii Inc., Honolulu. **Dr Selwyn Malster** of Christchurch Technical Institute is spending a year overseas. **Miss P.C. Mason** of the International Wool Secretariat, London now has the position of Corporate Planner. **Mr P.J. Bain** has left Ados Chemicals, Taita, and joined the Industrial Processing Division, DSIR, Gracefield. **Mr W.M. Hunter** has gone to NZ Farmers' Fertilizer Co., from NZ Starch Products. **Mr B.W. Schollum** of North Shore Teachers' College, Auckland, is now a teaching Research Fellow in the Faculty of Education at Waikato. **Miss D.O. Larsen** has gone from Auckland Secondary Teachers' College to Southland Girls' High School, Invercargill. **Mr D.M. Waddingham,** now of Tergo Industries, Ponsonby, was previously with Nylex Products, East Tamaki. **Dr P.R. Poole,** B.Sc. (Hons) (Otago), Ph.D. (Berkeley) has joined the staff at Ruakura ARC. **Mr B.E. Williamson,** Ph.D. student at Victoria has gone to ANU, Canberra. **Dr D.H. Taylor** has returned from Albany, NY, and is now living at Tauranga Road, Waihi.

We congratulate our good friend **Dr Keith Farrer** of Melbourne on the publication of his book, 'A Settlement Amply Supplied' (Melbourne University Press 1980, $A26) which is a history of the development of the food technology in Australia in which chemists played a lively part. The book is most interesting since Australians were pioneers in refrigeration, canning and pure food legislation. With regard to the last, adulteration of foods like milk was so bad that it is not surprising that the State of Victoria appointed the first Food Standards Committee in the world in 1906. It not only made regulations, but had the power to enforce them and to prescribe methods of analysis and standards of labelling. A photo of Dr Farrer, whose writing matches his subject, was published in our issue for April, 1979.

1981 BRANCH CHAIRMEN


Odell


Smedley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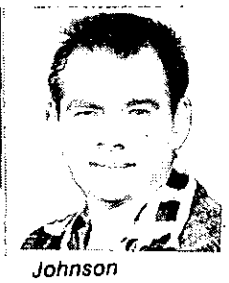
Johnson

AUCKLAND

Prof Allan Odell has been re-elected Chairman of the Branch, having held the post twice before, the first time in 1959. This must be a unique record in the history of the NZIC. Educated at Scots College, Wellington, and the University of Auckland, he holds the degrees of Ph.D. (London) and D.Sc. (Auckland), and in 1969 was appointed to a personal chair at Auckland, where he heads the Urey Laboratory of Radiochemistry, in which field he has an international reputation. Prof Odell is married and has one daughter who is studying engineering at Auckland.

MANAWATU

Cecil Johnson received his secondary education at New Plymouth Boys' High School and he attended Victoria University of Wellington. He graduated MSc in 1961 and PhD in 1965, his thesis supervisor being **Dr Alex T. Wilson.** In 1964 he joined the Fats Research Laboratory.

During the mid-1960s, while on post-doctoral study leave, Cecil investigated some aspects of the mass spectra of glycerides with **Prof. Ralph T. Holman** at the Hormel Institute in Austin, Minnesota. He then shifted to the Department of Food Science at Michigan State University in East Lansing, Michigan, to gain an appreciation of methodology in flavour research with **Prof. Albert M. Pearson.**

Soon after his return to NZ, the Food Chemistry Division (formerly the Fats Research Division) was closed on the retirement of **Dr F. Brian Shorland** and Cecil was transferred to the Applied Biochemistry Division, Palmerston North. In the early 1970s he was a member of a team, led by **Dr Edmon Wong,** who discovered that 4-methyloctanoic acid (hircinoic acid) is an important component of sheep and goat meat flavours. Cecil has a continuing interest in many aspects of the analysis of ruminant fats. This includes the gas and liquid chromatographic separation of medium and long chain fatty esters and the location of double bonds in unsaturated compounds. He is also interested in new and unusual methods for processing tallow by interesterfication of the fatty acid components and polymerisation of the acids.

Cecil was elected to the Manawatu Branch Committee of the NZIC in 1976 and since 1978 he has been Branch Editor. He was a Committee Member for the 1980 Institute Conference, taking care of publicity. As well as forwarding the Committee News, he organised an article "Chemistry's Role in Research, Industry in Manawatu Branch Area" for the Conference Issue of this Journal. His principal outside interests include his wife and four children, the local table tennis club and he is on the Committee (as Maintenance Officer) of his local (Riverdale) kindergarten.

WELLINGTON

Stuart Smedley obtained a B.Sc. degree from Victoria University in 1965 and spent a year at Auckland Teachers' Training College in 1966. This experience was only to send him back to university in 1967 to study for a M.Sc. (Hons) degree. On completing this he travelled to Southampton University to study transport properties of molten alkali halides at high temperatures and pressures for his Ph.D. under the guidance of **Dr B. Cleaver.** On completing his degree in 1971 he spent 8 months at Case Western Reserve University studing absorption of ultra sound in liquids at high temperatures with **Prof. E. Yeager** and took up his appointment as a lecturer at Victoria University in October 1971 and has remained there since. He takes up the position of Chairman of the Chemistry Department this month.

His interests have been in the field of ionic migration in liquids and glasses and has recently published a book on that subject. Stuart has been an active Branch Committee member for 5 years and one of his contributions has been to organise an annual "Careers in Chemistry" seminar for 6th and 7th form students. His outside interests include boating and ancient vehicles.

CANTERBURY

John Cretney graduated B.Sc. (Hons) from Canterbury University in 1969 and completed his Ph.D. in organic chemistry at Canterbury in 1973. Since 1972, he has tutored in chemistry at Christchurch Polytechnic. In 1979 he spent a year as a Visiting Lecturer in the Chemistry Department, University of Canterbury, combining teaching with a project related to air pollution monitoring. He returned to Christchurch Polytechnic in 1980 and is currently Course Supervisor in the Department of Applied Sciences.

John has been involved with the Canterbury Branch, NZIC for several years as Branch Treasurer. Outside interests include raising a small daughter, active involvement in politics, and playing squash.

OTAGO

Prof R. Laverty, Branch Chairman for 1981, has spent most of his life in Dunedin. After schooling at the Otago Boys' High School and study at the University of Otago, he gained an MSc in Chemistry in 1955. At that point his career took a sharp change of direction from an academic study of physical chemistry to a completely biological orientation, when he became Research Assistant to **Sir Horace Smirk,** Department of Medicine, Otago University, studying the underlying causes of experimental hypertension and the effects of drugs on rat blood vessels. This culminated in the award of a PhD in 1960, followed by 3 years as a post-doctoral fellow on a Beit Memorial Medical Research Fellowship. This was held at the ARC Institute of Animal Physiology, Babraham, Cambridge under **Dr M. Vogt, FRS.** At this stage some degree of chemistry crept back into his life as he became interested in the synthesis and metabolism of the catecholamine neurotransmitters in the body, with particular reference to their relationship to drug effects on behaviour.

Prof Laverty returned in 1964 to a research position in the Wellcome Institute, University of Otago, to carry on these studies. However in 1968 he decided to forgo the exciting but insecure life of a full-time research worker for the more stable existence of a University Lecturer in Pharmacology. (For this his wife and 3 children were probably very grateful.) Promotion with in the department followed, culminating in his appointment as Professor and Chairman of the department in 1980 on the retirement of **Prof Fastier.** Study leaves were taken during this time at the Pharmacology Departments of Cambridge and Yale Universities.

As well as having a continuing interest in the Institute of Chemistry, Prof Laverty is a member of the Assessing Sub-Committee of the MRC Standing Committee on Therapeutic Trials, responsible for quality control and initiation of drug trials in NZ. Another non-University interest is an apparently endless involvement in the RNZN Volunteer Reserve. From this has come an interest in "mucking about" in small boats, an absorbing if not very productive hobby.

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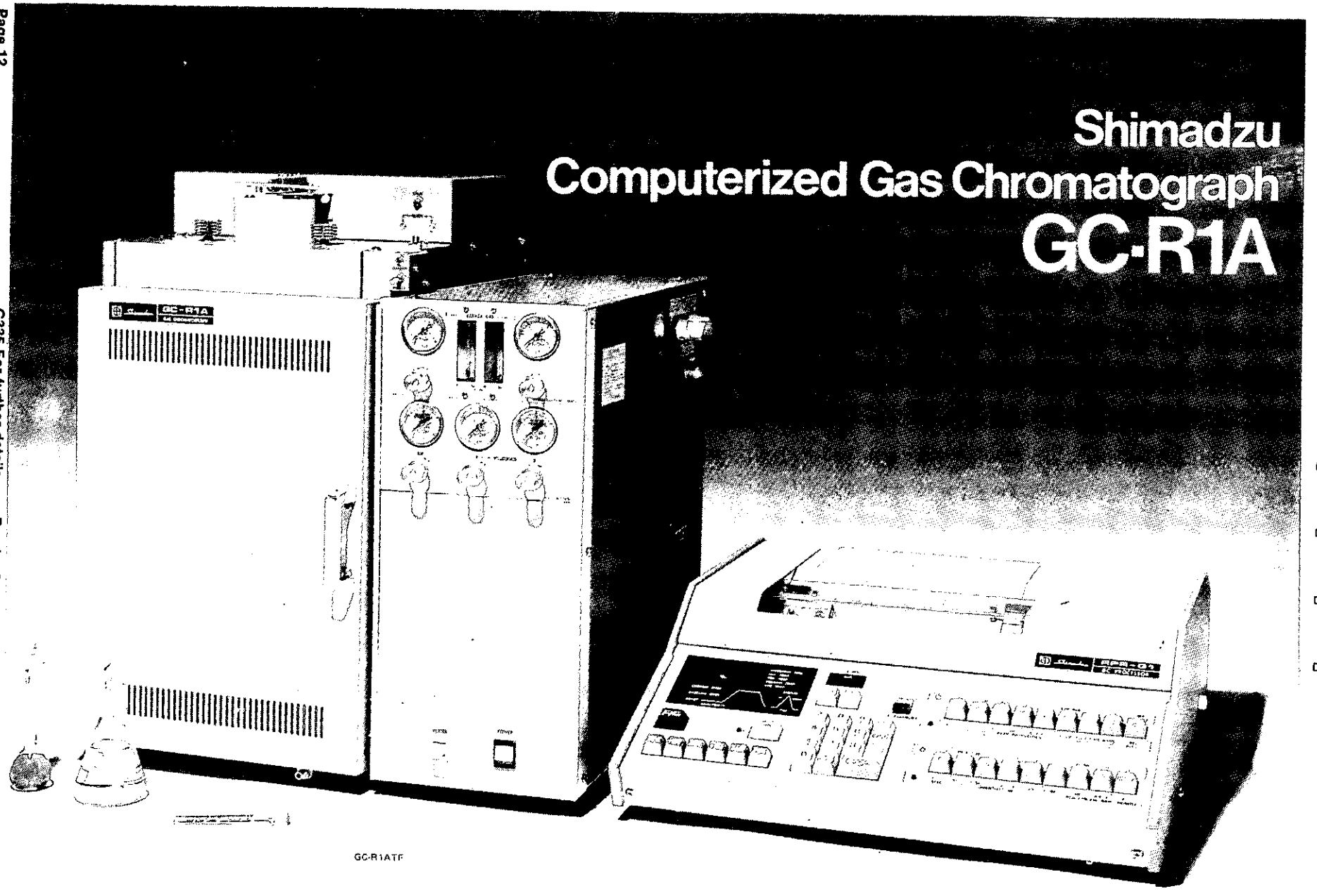

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University News

Massey

Deputy Prime Minister, **Brian Talboys** was honoured with a Doctor of Science (honoris causa) degree on November 19, 1980, for distinguished public service. In receiving the award, Mr Talboys became one of 18 to be so honoured since the first awards were made in 1964. After receiving the Honorary Doctorate, Mr Talboys delivered the Massey Memorial Lecture for 1980. This was the fifth in a series of occasional lectures sponsored by a Trust set up to commemorate the life and times of the late **William Massey,** NZ Prime Minister from 1912 to 1925. Mr Talboys spoke of "Dependence and Security — Independence and Opportunity" in which he outlined NZ's trading and economic history, particularly in relation to Britain and the EEC.

Victoria

Dr S.I. Smedley has been appointed Chairman of the Chemistry Department for a 3-year term from February 1, 1981.

Dr J.F. Griffiths (Department of Physical Chemistry, University of Leeds) recently visited the Department and gave a fascinating seminar on "Combustion Studies".

Canterbury

Prof Bruce Penfold has been appointed as Head of the Department of Chemistry for a term of 4 years from February 1, 1981 in succession to **Prof Jack Vaughan** who has stepped aside after being Head of Department since 1964.

Recent departures on study leave from the Chemistry Department include **Prof Leon Phillips** and **Dr Murray McEwan,** both of whom are spending the summer at Jet Propulsion Laboratory, Pasadena; **Dr Jack Fergusson,** who will split his leave between University Chemistry departments in Kingston, Jamaica and Halifax, Nova Scotia; and **Dr Rod Clarldge,** who will visit Zurich, Switzerland. **Dr Murray Munro** will depart in April for leave at the University of Hawaii where he will work on marine natural products with **Prof Richard Moore.**

Dr Kip Powell presented a paper on "The role of organic matter in the podzolisation process" at an international conference on soils with variable charge at Massey University in February.

A recent visiting Erskine Fellow in the department was **Prof Frederick Kaufman** of the University of Pittsburgh. While here Prof Kaufman gave a number of seminars and lectures on the atmospheric fluorocarbon problem and also on various topics relating to his research interests in the field of rapid gas phase kinetics of atoms and free radicals.

Other recent visitors who have given seminars include **Prof E. Conn,** University of California, Davis (Stereochemical aspects of cyanogenesis); **Dr Craig Trenerry,** Adelaide (Ion Cyclotron Resonance studies of Silanes); **Prof Ken Musker,** University of California, Davis (Redox chemistry of thioethers) and **Prof Boris Kamenar,** University of Zagreb, Yugoslavia (Oxo-bridged Mo and Fe complexes).

Otago

Chemistry Department

In November, **Prof B. Kamenar** of the University of Zagreb, Yugoslavia, gave a lecture on "Some Structural Studies of Oxo-bridged Molybdenum and Iron Complexes" and **Dr L.H. Princen** lectured on the topic "Recent Developments in New Crops. A Concept Whose Time Has Come."

A visitor to the Department from January-April will be **Prof H. Vahrenkamp** (and wife Carla) from the University of Freiburg. He will work with **Associate Prof B.H. Robinson**'s group.

News From Govt. Departments

NZ Dairy Research Institute

Mr Brett M. Ennis recently returned after spending 3 months with the English Milk Marketing Board studying lactose hydrolysis.

Mr Alan J. Baldwin has just concluded 6 months at the Danish Dairy Research Institute, Hillerød, on refresher leave.

Recent appointments to the staff of the Institute include **Ms Marion Ewen** (Whey Products Section) and **Mr Stephen A. Espie** (Casein and Related Products Section).

Dr Baruch Rosen from Israel, a visiting research officer on sabbatical leave, is currently working at the Institute in the field of dairy microbiology.

The Institute has recently obtained approval for the preparation of plans for the construction of a new laboratory wing to provide further space for research into the manufacture and properties of dairy products.

Wallaceville Animal Research Centre

Mr M. Webster gave a seminar on "Abnormalities in Wairarapa Sheep Teeth".

DSIR

Applied Biochemistry Division

Dr Daryl Rowan, a natural products chemist, joined the Organic Chemistry Group of Applied Biochemistry Division (ABD) in mid-November 1980. Dr Rowan is working on the chemistry of fungal-plant interactions. He completed his BSc (Hons) and PhD degrees in the Chemistry Department, Otago University, and then did post-doctoral studies at the Department of Chemistry, University of Sherbrooke, Quebec, Canada.

Miss Jan Thomas joined the Division's Biochemistry and Microbiology Group in November. She recently completed a BSc (Biochem.) from Massey University and is now working with **Dr John Robertson** on aspects of nitrogen fixation.

Drs Mike Boland, Barry Scott, Clive Pankhurst and **John Robertson** contributed to poster and paper sessions at the 4th International Symposium on Nitrogen Fixation held in Canberra, December 1-5, 1980. Dr Boland was also invited to participate in a discussion on "Ammonia Assimilation in Legume Nodules". He spoke on "Amide Biosynthesis".

Dr Dick Clarke, as well as attending this Symposium, organised the 1st OECD Nitrogen Fixation Germplasm Workshop in Canberra, December 6-8. The aim of this Workshop was to discuss the collection and evaluation of rhizobia and legumes, and particularly to identify problem areas where sponsored (short-term) research would be of value. Thirty people form 11 countries were invited to attend the Workshop. Our representatives were **Drs Barry Scott** (ABD) and **Brian Jarvis** (Department of Microbiology and Genetics, Massey University).

Dr Alfred Pühler, Professor of Genetics at the University of Bielefeld, West Germany, recently presented a Seminar on "Molecular Genetics of Biological Nitrogen Fixation".

In a Seminar on "Fish Research at ABD", **Messrs Peter Vlieg** and **Dennis Body** spoke on "Proximate Analysis of NZ's Commercially Important Fish" and "Marine Wax Esters of Deep Sea Fish and Their Controversial Properties" respectively. Mr Vlieg described the reasons for the importance of this type of work and the Division's involvement in it. About 500,000 tonnes of fish are caught annually around NZ and many unfamiliar species, in particular those from deep waters, are landed in large quantities. Mr Body described investigations on some deep sea fish species, the flesh of which contain relatively high levels of wax esters. Ingestion of these compounds can lead to gastric disorders in humans, similar to the effect of castor oil. However, these wax esters could possibly be used as a substitute for sperm oil in a similar manner to that of Jojoba seed oil.

DSIR — Chemistry Division

Mr K.W. Dalzell has returned after spending 10 months gaining experience in the paint and oils industry in Australia.

Prof. G. Liggins, National Women's Hospital, gave a seminar on "Hormone Control by the Unborn Baby".

DSIR — Soil Bureau

Symposia on the results of a visit to China by a member of Bureau staff were held recently. Various aspects of soil science in China were discussed.

Membership Elections

The following elections were confirmed by the NZIC Council at its November meeting:

Fellowship (FNZIC):
CLARK, Alan Geoffrey MSc. PhD. (Well) Victoria University.
CLARKE, John Graham MSc. (Otago) Wilton Scientific Ltd., Lower Hutt.
O'DONOVAN, Garry Michael MSc. (Auck) Central Inst. of Technology.
RANDS, David Barrett MSc. PhD. (Auck) Taubmans International, Wellington.
SHANKS, George Frederick BSc. (Hons) PhD. (Tas) Dip Chem Pharm. Central Inst. of Technology.
SUTTON, Harry Callender MSc. (Hons) (NZ) PhD. (Durham) FRSE Inst. of Nuclear Sciences, DSIR, Lower Hutt.

(MNZIC):
CHAPMAN, George Edward B.A.M.A. D.Phil. (Oxon) Dept. of Biochemistry, University of Auckland. (Biochemist)
CRUMP, Richard Thomas H.N.C. NZFMRA Auckland. (Technical Officer)
FISHER, Murray Thomas M. Phil. (Lond) C.O.P.M.L.T. Dip. Tch. Greymouth High School. (Teacher)
GROUT, Alan B.Sc. Chemistry Dept. University of Auckland. (Snr. Technical Officer)
LOMAX, Terence Douglas M.Sc. (Auck) Chemistry Dept. University of Auckland. (Ph.D. Student)
KAZAKEVICS, Arnis Arls Rolands M.Sc. (Auck) Chemistry Dept. University of Auckland. (Ph.D. Student)
PHANG, Pui Yoeng B.Sc. (Hons) (Singapore) MBA (NSW) MRIC C. Chem. T.J. Sprott & Associates, Auckland. (Analyst)
POOLE, Philip Raymond B.Sc. (Hons) (Otago) Ph.D. (Berkley) Ruakura Agric. Res. Centre. Hamilton. (Scientist)
QUAH, Keat Lee (David) M.Sc. (Cantuar) East Coast Fertiliser Co. Ltd. Napier. (Chemist)
ROWE, Terence Michael LRIC. Animal Science Group, Lincoln College, Canterbury. (Laboratory Manager)
SMITH, Derek William B.Sc. (Hons) (St. Andrews) D. Phil. (Oxon) School of Science, University of Waikato. (Snr Lecturer)
O'MAHONY, Richard Shane M.Sc. (Hons) (Auck) Dip. Tch. Waitakere College, Henderson. (Asst. Teacher)

BEISHUIZEN, Jan Willem B.Sc. NZ Starch Products NZ Ltd., Onehunga. (Technical Manager)

CHARLESTON, Alan Gordon NZCS COP (Minerology) NZFMRA Auckland. (Technical Officer)

Associate Membership (Asoc. NZIC):
SHAW, Douglas John NZCS. T.J. Sprott & Associates, Auckland. (Analytical Chemist)

Graduate Membership:
EVANS, Susan Mary B.Sc. Secondary Teachers' College, Christchurch. (Student Tchr.)
MORRIS, George Clement B.Sc. (Hons) (Otago) St. Paul's High School, Dunedin. (Teacher)
PHILLIPPS, Maurice Wayne M.Sc. (Hons) (Waikato) Flinders Cook Technical Services Ltd., Auckland. (Analytical Chemist)
SCHUYT, Helen Anne B.Sc. (Hons) (Cantuar) Chemistry Dept. University of Canterbury. (Ph.D. Student)
SEADON, Jeffrey Keith M.Sc. (Auck) Secondary Teachers' College Auckland. (Div. Teacher Trainee)
VIATOS, James B.Sc. Chemistry Dept. Victoria University, Wellington. (Grad. Student)

Technician Membership:
O'CONNELL, Therese Margaret NZCS. Waitaki NZ Refrigerating Ltd. Wairoa. (Snr. Technician)
O'DONNELL, Peter NZCS. Prepared Foods Ltd. Palmerston North. (Development Chemist)
SMITH, Ronald David NZCS. Philips Electrical Inds. of NZ Ltd., Auckland. (Sales Rep)

Life Membership: R.M. Greenwood, Manawatu.

Readers' Letters

The following letter from Dr Shorland was published in an abbreviated form in our issue for February, 1980, and we regret that we did not refer to his eminent qualifications to speak on the matter. In addition to holding the Royal Society's Hector Medal, he was on the Council of that body for 10 years, and for 6 years was convenor of the Chemical Sciences Panel of the Fellowship Selection Committee. He was President of the NZIC in 1962.

Industrial Chemistry: Its Importance And Lack Of Representation On The Fellowship Of The Royal Society Of NZ

The Editor,
Sir,

It is sad to note in the Institute's Golden Jubilee year that no chemists working in the industrial field have been considered worthy of being elected to the Fellowship of the Royal Society of NZ. The competition for the Fellowship is eagerly contested: first there is the ranking of the candidates within the framework of the 6 divisions of science — Animal Sciences, Chemical Sciences, Human Sciences, Mathematical, Physical and Engineering Sciences, Plant Sciences and Solid Earth Sciences by their respective advisory committees. At each Annual General Meeting of Fellows the number of Fellows to be elected for the ensuing year is determined. As the number seldom exceeds 5 the convenors of the advisory committees in presenting the case for their preferred candidates recognise that if two are selected this represents a major achievement.

In practice the criteria in recent years have included almost without exception as an overriding factor published work and little else is considered. The possibility of exceptional administrative ability as a worthy factor is usually settled by indicating that the person with the best publications record also has administrative ability.

In the past in NZ we have elected one or two Fellows for their obviously outstanding influence on science even though such persons may be without scientific papers except possibly in the context of scientific history and matters impinging on the organisation of science. In the beginning it was recognised in the Royal Society of London that it was appropriate to include influential persons such as Charles II and this trend has continued, albeit very sparingly. In addition there is a trend to include a few persons of exceptional achievement in fields related to science, especially technology. One such example would be the inventor of the jet engine. In NZ in recent times the gap in engineering was filled.

In this country we have the particular difficulty of the industrial chemist who is unlikely, because of the policy of local firms, to be able to publish for various reasons — including the fact that the work may not lend itself to publication, or perhaps for reasons of competition (the development of a new process should not be made known to the competitors).

The Journal's publishers claim that 65.7% of the readership is industrially employed — all such readers holding key positions involving decision making. The NZIC is the largest professional Member Body in the Royal Society and therefore the 65.7% industrial chemists in its membership constitutes a significant proportion of the scientists under the Royal Society umbrella. The fact that the RSNZ has no industrial chemist in its Fellowship savours of irrational behaviour.

It seems unlikely that those in industry could be exclusively lacking in the genetic material for Fellowship ability while the chemists who are not in industry have their fair share. I suggest that if the industrial chemists were to set up their own Royal Society and use as the criterion the development of industrial processes, the present Fellows would find it very difficult to become Fellows. What is needed therefore is for the RSNZ to seek from the industrial chemists a high standard of criteria that would parallel that used now for the Fellowship. This could mean, for example, that a candidate with some published work could cite, in addition, evidence of the development of industrial processes, the solving of manufacturing problems, the development of patents, the introduction of new products and the better utilisation of resources. These various aspects could be evaluated as with published work.

The above suggestions are not made with a view to increasing the number of RSNZ Fellows which some, including myself, consider already excessive in relation to population. The plea is that the replacements caused through deaths should be aimed at making our Fellowship more strictly representative of the scientific population by inclusion of industrial chemists.

The Society's President in a publication describing science in NZ since 1952[1], has stated "the direction of science is becoming more the concern of three bodies, the National Research Advisory Council for 'government' science, The University Grants Committee for 'University' science and the RSNZ for science outside these areas." I think it must be agreed that the residue of science outside of government and university must be largely industrial science. The analysis of the situation must surely mean that the aspect of science about which the RSNZ is most concerned, namely, industrial science, largely industrial chemistry, is the part in which it has the least capability. It has no industrial chemist Fellows to draw upon for advice.

I suggest that although the National Research Advisory Council may be charged with giving direction to government science, such a body cannot enforce its views because of its advisory nature. It would seem much more likely that its function is in reality to act as a channel of communication to transmit the ideas that are given to it by the scientists for the purpose of influencing government and Treasury to provide the means of carrying these ideas out. It could also act in resolving conflicting interests between government departments involved in science. I suspect that the University Grants Committee could hardly be the force behind the generation of ideas for research but it could nevertheless influence which aspects of science are to be supported. Whatever the controls, it seems inevitable that the generation of ideas is utterly dependent on those who are doing the scientific work.

It is of incidental interest that the RSNZ, set up under the 1965 Act providing it with wide powers and obligations, has played so little part in outlining how science should be organised in NZ. Its silence on the need for science in times of cut back is disturbing and out of line with the objects of the Act, e.g. Clause 8b states "To inform the Minister of fields which, in the opinion of Council, the scientific effort of NZ should be increased and to make suggestions as to how this may be done."

What is needed today is the recognition that ivory tower science can best be achieved through the whole-hearted collaboration with industry. This matter was referred to by the late Sir Thomas Easterfield who came to Wellington from Cambridge in 1899 to take up the position of first Professor of Chemistry and Physics at the newly-founded Victoria University College. In 1919 he became the first Director of the Cawthron Institute at Nelson and in 1933 was President of the fledgling NZIC. In his inaugural lecture at Victoria University College on "Research as the Prime Factor in Education" he attributed the scientific upsurge in Germany to the almost fanatic integration between university chemistry and the chemical industries.

The NZ chemical industries are much smaller than in Germany, nevertheless their expansion may well depend on having closer relations with the universities to the advantage of both. The inclusion of industrial chemists and of influential industrialists in the RSNZ may prove infinitely more important to us than the question of the overseas relationships of our national committees, including such matters as the simultaneous representation of Taiwan and Mainland China. These are more the questions for the great nations to solve.

Our destiny depends more on local issues, the greatest of which is the proper and respectable role of industry in our scientific framework, without which we cannot generate funds required for the development of our local science. It is up to the Institute to recognise that a large section of its members — the industrial chemists — are unable to make their contribution to the Fellowship of the Royal Society because of lack of representation and to seek a satisfactory solution to the problem.

F.B. Shorland

1. Thirteen Facets: Essays to Celebrate the Silver Jubilee of Queen Elizabeth II, 1952-1977. Editor Ian Wards. Government Printer, Wellington.

Letters (Cont)

Status Of Institute Members

The Editor,
Sir,

In thinking about the problems of status of members of our institute, particularly with regard to those who work in commercial organisations, I believe that there are two main weaknesses in our organisation:

1. Lack of money
2. Lack of commercial management attitudes

As far as the shortage of money is concerned, we seem to have no method except raising subscriptions to remedy this situation. At less than $30 our membership fee is remarkably low compared to say, my female staff, who pay the maximum allowed by law, viz 1% of the annual wage of the lowest grade of adult worker, now amounting to $68 per annum. Other unions have similar rules and I am sure if you surveyed other professional bodies, you would find that we are among the lowest.

There is obviously room for raising the subscription, especially if means can be found for charging a lower rate for younger members, but of course, members (particularly industrial and commercial employees) must be convinced of the value of joining and of maintaining their membership. Since the Institute does little to publicise the value of a membership qualification to employers, or potential employers, we seem to be in a "Catch 22" situation.

This brings me to the second point, the lack of commercially-minded expertise, and I was very interested to read in Chemtech, April 1980, page 205, about how the American Chemical Society solved some of its problems in the 1950s and 1960s by the creation of Corporation Associates.

The essence of the idea was that the American Chemical Society was in serious trouble with its publications and with its old, inadequate headquarters building, and it turned to its Company membership for help. The idea of private companies having individual membership of the ACS was abandoned at this point and a body called Corporate Associates was formed. This body succeeded in re-organising the publications (as the many fine journals available today demonstrates) and also assisted in getting an impressive headquarters building financed.

Then, in the late 1960s, it was seen that the Associates, being mainly librarians or information scientists, had served their basic purpose, and they changed the membership of the body so that:

1. The representatives from industry were drawn from middle and top management levels.
2. The fees paid were graduated according to the number of chemists and chemical engineers employed.
3. A committee was formed to help the American Chemical Society board, in any way the board needed.

This committee has continued to serve a very useful purpose in bringing new directions to the ACS, especially in the field of publications, industry-academia relationships, membership promotion, informing potential chemists of career possibilities, and in general acting as a "sounding board" for some of the tentative decisions of the ACS.

If we could set up a similar body, and persuade some of our more successful industrialists to serve on it (whether or not they have ever been chemists, or members), we might produce some useful thinking on the value of the Institute to industrial and commercial members, and of the membership qualification to employers.

Our society and industry are obviously in for some drastic changes in the next few years, and I would like to think that the status of chemists and in particular the status and value of a Membership qualification, could be enhanced in this period.

I know from experience that in many managerial minds the Institute hardly exists, and that belonging to it does nothing for an individual employee. This is a sad commentary on the past activities of all of us, and while I know that Council is now giving a lot of attention to the problem, I am certainly impressed with the idea of going outside of our membership by the creation of an associate body such as described in the article.

C.L.H. Stonyer
Production Manager
Medical Division
ICI Tasman Limited.

Mr Stonyer has been very active in NZIC affairs for many years, including a short period as acting Editor of Chemistry in NZ. Those who want to know more about him should read "A Sort of Autobiography" (Chemistry in NZ, Nov 1978 p 108).

The Editor,
Sir,

On reading through the December issue of Chemistry in NZ I was pulled up short by the quotation from Mr Bill Davies in the article "Technical Employment — What Future?" p.234. His statement read (in part) "People will be aware of, for example, the difficulties being faced by graduates in arts, law, social sciences, chemistry and other sciences, to say nothing of the inexperienced youngsters leaving the technical institutes." I would like to point out three misconceptions in this sentence.

1) Since the AAVA regulations for NZCS students require that the student is suitably employed during the 4th and 5th years of their certificate, it is hard to see how these employment difficulties relate to people who are already employed.

2) Since a student leaving a technical institute after completing the examination requirements for a NZCS will have had at least two (and usually three) years employment experience it is a little ludicrous to call theminexperienced compared to a fresh graduate.

3) Unless Mr Davies has some age statistics tht I am unaware of, the comparison between the descriptions *"graduates"* and *"youngsters leaving the technical institutes"* (my italics) is as misleading as it is condescending.

This apparent ignorance of what the technical institutes are doing is rather worrying when it originates from the Technical Recruitment Manager of a firm of management consultants but unhappily it is certainly not unique.

A.C. Herd
Auckland Technical Institute

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Membership Structure Of The NZIC

Robert G.A.R. Maclagan
Department of Chemistry
University of Canterbury
Christchurch 1.

Times are changing! The chemist who joins the Institute this year is, on average, a significantly different type of chemist to one who joined 10 or 20 years ago. To illustrate this point, I want to present and discuss selected statistics concerning the structure of the membership culled from the Institute's membership records.

Some key facts which emerge from the analysis are:

(1) There is an unusually high percentage of University chemists in the 36-50 age group with a consequent lower percentage of industrial members.

(2) The average age of University chemists is climbing to an unhealthy extent due to the lack of many new appointments.

(3) While a large number of chemistry graduates become teachers, very few become members of the Institute.

(4) A large percentage of the membership have a Ph.D., which gives the Institute a research orientation it may not desire.

(5) There are strong correlations between election to the Fellowship and employment group, position and age.

(6) There are large variations between branches.

1. Employment Group — Age Group

In Table 1 are presented the numbers in each of the employment groups used in the 1980 Salary Survey as a function of age at December 31, 1980. A five-year interval is used for the age groups. An extra group — "retired" — has been added to the employment groups used in the Salary Survey. Of the 1406 members, 1000 are included. Those excluded were the 42 members under 26, 43 members for whom the date of birth is not known, the 182 overseas members and the retired (life) members. While the allocation of a member to an employment group is in most cases straightforward, the distinction between "Self-employed" and "Other" is difficult to make. The significant sub-group "Consultants/Analysts" was classified as "Other". The distinction between "Central Government", including the DSIR, the MAF laboratories and the Forest Research Institute, and "Research Associations" is, in many respects, not particularly useful. Those working in medical/dental research laboratories are separated from both of these groups. In Fig. 1 the data are presented graphically for the four groupings: Industry, Universities, Central Government and Research Associations and Other Education (Schools, Teachers Colleges and Technical Institutes/Polytechs).

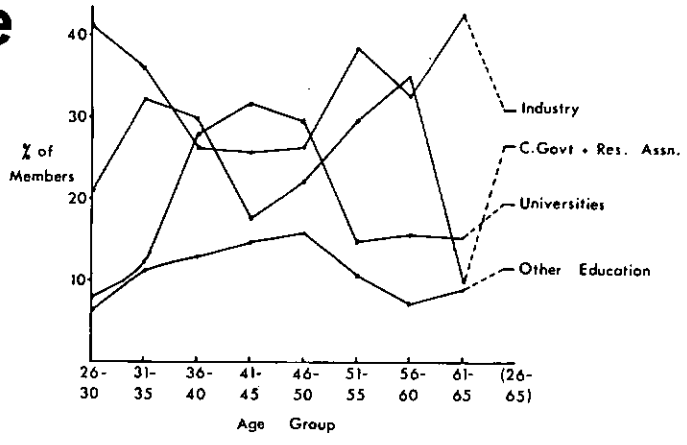

Fig. 1. Percentage of members in various Employment groupings as a function of Age Group.

The large percentage of members in the 36-50 age group from Universities has important consequences. There are relatively fewer industrial members. Were they put off by the research orientation of the majority of members of their age group and either resigned or never joined? By contrast, the "Central Government" and "Research Association" group has a relatively small percentage in the 41-50 age group. If some mechanism could exist whereby some University members in this age-group could transfer to Central Government establishments or Research Associations, this unhealthy imbalance could be partially rectified. In Table 2 the numbers in each rank in University Chemistry departments as a function of age group are given. University members are also to be found in Biochemistry, Soil Science and Chemical Engineering Departments. In

Table 1

Age-Group-Employment Group

Age of Group	School Teachers	C. University	Technical I.	Industry	C.Govt	L.Govt	Res. Assn	S. Empl	Hospital	Student	Other	Retired	Total
26-30	8	0	10	0	52	20	0	6	0	2	25	3	0	126
31-35	11	1	24	12	76	59	6	9	0	5	0	6	2	211
36-40	16	2	54	7	51	46	0	12	0	1	0	4	1	194
41-45	10	0	43	10	35	21	3	3	1	0	0	10	0	136
46-50	14	0	28	1	25	18	0	3	1	2	0	3	0	95
51-55	5	3	18	5	47	25	1	11	1	2	0	4	1	122
56-60	5	0	13	1	27	25	1	4	0	1	0	3	3	83
61-65	3	0	5	0	14	3	0	0	2	1	0	0	5	33
Total (26-65)	72	6	195	36	327	217	11	48	5	14	25	33	12	1000

Total Institute Membership : 1406

Table 3

Age-Group-Highest Formal Qualification

Age of Group	None	NZCS or Diploma	B.Sc.	B.Sc.+ Diploma or other degree	B.Sc.(Hons)	M.Sc.	Ph.D. (NZ Univ)	Ph.D. (Overseas)	D.Sc.	Total
26-30[a]	0	17	27(28)	2	9(15)	31(43)	35(16)	5	0	126
31-35	0	12	38	6	13	45	79	18	0	211
36-40	0	8	31	4	11	36	70	33	1	194
41-45	1	8	24	7	8	24	29	32	3	136
46-50	7	1	19	5	3	21	12	23	4	95
51-55	7	5	36	6	1	32	12	20	3	122
56-60	3	0	23	6	1	27	0	17	6	83
61-65	3	1	8	2	1	9	1	4	4	33
Total (26-65)	21	52	206	38	47	225	238	152	21	1000

a The figures quoted for this age group assume students currently studying for a higher degree obtain that qualification. The numbers for current qualifications are shown in brackets.

the 26-35 age group, the majority of University members have Postdoctoral Research Fellow or Research Technician posts. There is an unhealthily small number of lecturers in this age group. However, the idea mentioned above of transfer out of the University system is made more difficult by the fact that the average academic in the 41-50 age group is a Reader/Associate Professor. (Current rules restrict this range to 15% of the total University academic population — chemists don't do too badly!). In the 26-35 age group, with University posts trickling to a virtual halt and a decline in new positions in the Central Government/Research Association grouping, the percentage in the Industry group has risen markedly. Above the age of 35 there appears to be a fairly even split of industrial members between management positions and bench/production type positions. As might be expected the majority of those under 35 are in the latter category. About 22% of industrial members are employed by firms directly processing "natural" products. Relatively few of these are in the 36-45 age group.

The numbers of members in each age group is far more constant than might be imagined. Is this due to poor retention of members in their thirties and forties, especially Industrial members, and poor recruitment amongst younger chemists? The percentage of members in the "Other Education" grouping remains fairly constant. However, the majority of members of the Chemical Education Group are not members of the Institute. Instead of just 7% of the membership in the "School" group, a figure nearer 25% might be more realistic.

When numbers quoted in Table 1 are compared with the number of replies to the Salary Survey, we find that the average return rate of 64% is exceeded by three of the four major employment groupings. The return rate of non-Industrial members is 70%, but of Industrial members only 60%. Yet is is for the Industrial members that the Salary Survey is of greatest interest and importance!

One final query — why are there relatively more members born in the years 1927, 1937, 1943 and 1947 than in the preceding or succeeding years?

Table 2

Age-Group-Rank (N.Z. University Chemistry Departments)

Age of Group	Professor	Reader/Assoc. Prof.	Senior Lecturer	Lecturer	Total
26-30					
31-35			6	5	11
36-40		6	28	1	35
41-45	4	12	11		27
46-50	7	5	6		18
51-55	4	2	1		7
56-60	6		2		8
61-65	1				1
Total (26-65)	22	25	54	6	107

2. Age Group — Highest Formal Qualification

In Table 3 are presented the highest formal qualifications as a function of age. The data are presented graphically in Fig. 2, which shows clearly the increase in

(Continued on Page 22)

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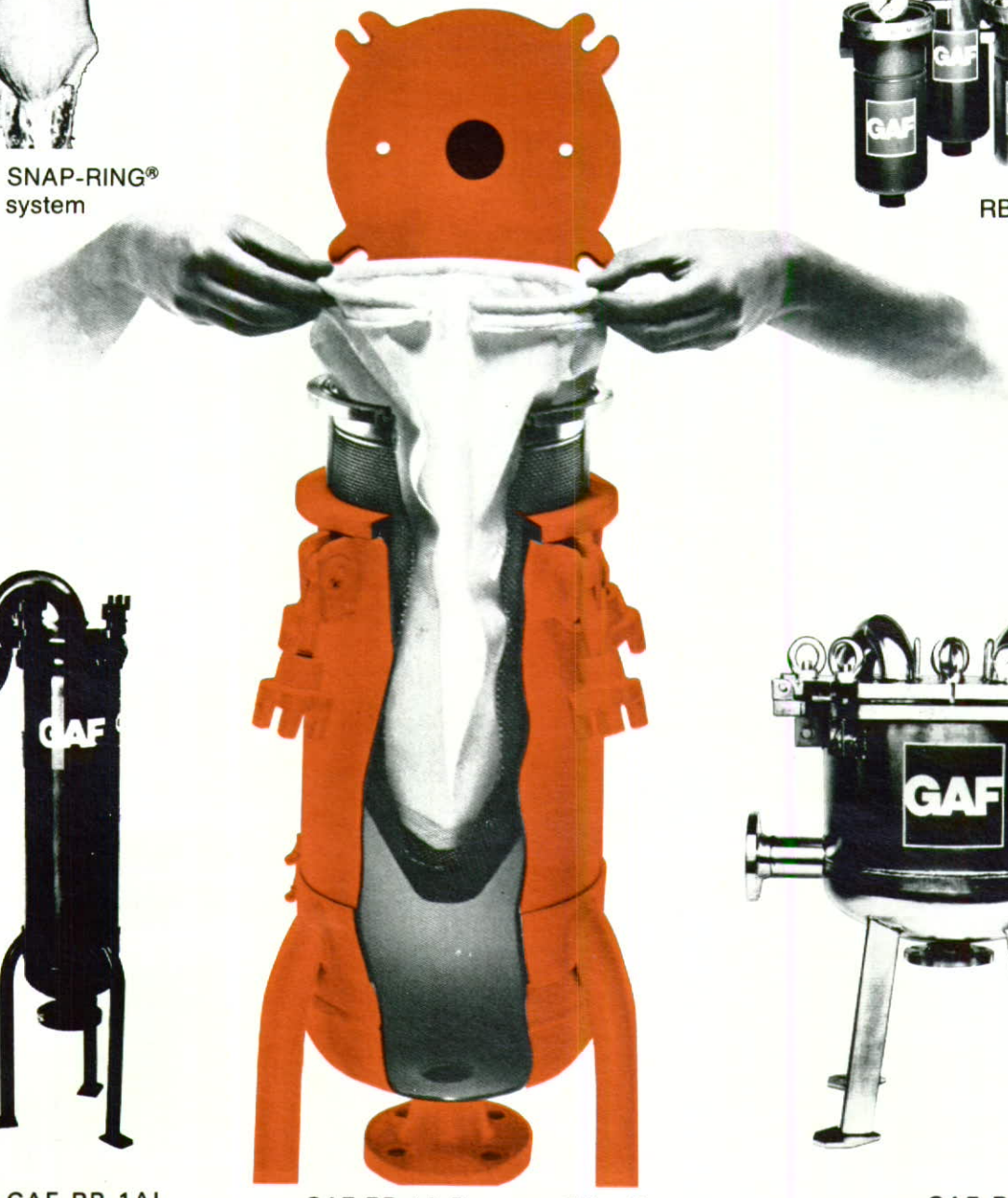

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Membership Structure (Cont)

the percentage of members having doctorates. However for the youngest age-group this has declined markedly. The number of Ph.D. graduates overseas, and thus not included in this survey, may slightly accentuate this decline. There appears to be a trend for B.Sc. (Hons)/M.Sc. graduates, including some with First Class Honours, to seek a job rather than further academic qualifications. The large number with doctorates mirrors the dominance of the University/Central Government/Research Association employment groups for the 36-50 age group. The Industrial group appears to be becoming dominant among the 26-30 age group. The percentage of members without any formal research training (i.e., no B.Sc. (Hons)/M.Sc.) is declining slowly. The percentage with just B.Sc. (Hons)/M.Sc. is increasing. There is a steady decline in the percentage of Ph.D.s from overseas Universities. Very few Ph.D. graduates from NZ Universities move from their undergraduate University.

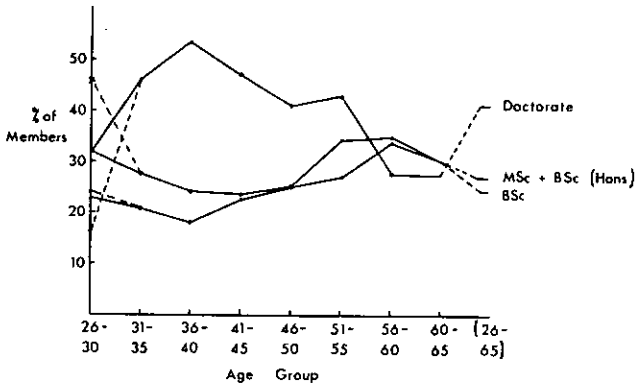

Fig. 2. Percentage of members with Various Highest Formal Qualifications as a function of Age Group.

3. Age-Group — Institute Status.

Data on Institute status as a function of age group is presented in Table 4. The youngest Fellows turned 37 this year. The Industrial group are poorly represented among Fellows — only 30 out of 327 (9.2%) compared with University members (42.1%), Research Associations (27.1%), Central Government (18.4%) (DSIR on its own — 23.9%) and Schools (15.3%). Only 2 Industrial group members under 45 are Fellows. Nearly half of the Institute's Fellows have positions which most would regard as automatically qualifying the person for a Fellowship — Professors/Readers in Universities, Directors/Assistant Directors of Research Organisations, Government Analysts, Inspectors of Schools, etc. 43% of members in the 46-60 age group are Fellows. I suspect that there is a large pool of eligible members who have not been proposed for the Fellowship of the Institute. There are certainly variations between branches — Canterbury has 31% of its members as Fellows compared with the Institute average of 19%. The rationale of distinguishing between Fellows and Members could be questioned on the basis of the strong correlation between election to the Fellowship and employment group, position and age. If this distinction were done away with, some means of giving recognition to outstanding members in such employment groups as Industry or Schools would, I feel, be needed.

Table 4

Age-Group-Institute Status

Age of Group	FNZIC[a]	MNZIC	G	Assoc. NZIC	T	Total
26-30	0	74	34	7	11	126
31-35	0	193	4	13	1	211
36-40	21(1)	164	2	7	0	194
41-45	33(1)	100	1	2	0	136
46-50	41(14)	53	0	1	0	95
51-55	53(15)	67	1	1	0	122
56-60	35(7)	47	0	1	0	83
61-65	8(2)	24	1	0	0	33
Total (26-65)	191(30)	722	43	32	12	1000

a Numbers in brackets - Industrial Members

Robert Maclagan was born in Perth, Western Australia. He graduated B.Sc. (Hons) from the University of Western Australia in 1966. In 1969 he was the first Ph.D. graduate in Physical and Theoretical Chemistry from the Research School of Chemistry, ANU. Following postdoctoral fellowships spent at Oxford and Johns Hopkins Universities, he was appointed a lecturer at Canterbury University in 1972. His main research interests are in quantum chemistry. Since 1975 he has overseen the computerisation of the Institute's records.

Branch — Employment Grouping

There are large variations between branches. Some features of this variation are summarised in Table 5 which gives the percentage of members in each major employment group for the six branches. What is true of the Institute as a whole is not true of a particular branch. While one third of the members of the Institute are in the Industrial Employment group, over one half of the Auckland branch members are in this group. For the Auckland branch the percentage of Industrial members in each age group is constant at about 50%. The Waikato and Wellington branches have relatively more members in the Central Government/Research Association grouping. In the Wellington branch, about one half of this group are in the 31-40 age group. The high percentage of University members in the Otago branch is partially due to Medical School researchers being included. The Education group is relatively strong in Canterbury but weak in the more populous Auckland.

The statistics discussed above show that the membership of the Institute is in a state of flux. These changes should be reflected in changes in the structure of the Institute and in its Branch and Conference programmes.

Table 5

Branch - Employment Grouping

% of Branch Members

Branch	Other Education	University	Industry	C.Govt and Res.Assn	Rest
Auckland	6.3	15.4	51.0	13.1	14.1
Waikato	15.4	14.3	22.0	39.6	8.8
Manawatu	14.8	20.0	26.1	33.0	6.1
Wellington	10.5	7.5	27.7	44.9	9.4
Canterbury	20.1	30.2	21.6	18.7	9.4
Otago	8.9	56.7	24.0	4.4	5.6
Whole Institute	11.4	19.5	32.7	26.5	9.9

special feature

INSTITUTE'S GOLDEN JUBILEE

The New Zealand Institute Of Chemistry: The First 25 Years

FOREWORD

Since only a small proportion of our members will have access to the Silver Jubilee issue of the Journal, published in 1955 and edited by Dr W.A. McGillivray, we felt we could not do better than to reprint the Institute's first 25 years' progress, as recorded in that issue, with a few minor corrections and a table of references.

In doing this we honour Mr W.G. (Mick) Hughson who, as Hon. Secretary-Treasurer for 12 years (1944-56) and later as President, has done much for the Institute.

W.G. Hughson

Prior to 1930 matters pertaining to the status of Chemists in NZ were in the hands of local Societies attached as a rule to the University Colleges or operating as Sections of the Philosophical or Royal Society of NZ. There was also an NZ Section of the Institute of Chemistry of Great Britain and Ireland.

In 1929 the Auckland Chemical Society sought to form a NZ Chemical Society and in 1930, **Prof H.G. Denham,** of Canterbury University College, Chairman of the Council for Scientific and Industrial Research, set out a scheme for NZ, based largely on the constitution of the Australian Chemical Institute of which he had had experience during his tenure of the Chair of Chemistry at Brisbane University. Prof Denham's suggestions were brought before meetings of chemists in the four centres, Auckland, Wellington, Christchurch and Dunedin. These meetings were strongly in favour of the formation of a New Zealand Institute of Chemistry which would include in its ranks all well-trained chemical workers.

1930

On November 7, 1930, representatives from the four Centres met in Wellington under the chairmanship of **Emeritus Prof W.P. Evans** and resolved:—

"That a New Zealand Institute of Chemistry be formed and that those present constitute themselves a provisional committee."

The members of the provisional committee were instructed to convene meetings of all chemists in their respective centres and to set up Branches of the NZIC. Branches were asked to consider the provisional Constitution, to nominate a delegate to the first Council and to submit a list of chemists deemed worthy of admission as Associates to the Institute.

In February, 1931, the first Council meeting was held. **Prof W.P. Evans** was elected President and **Mr W.A. Joiner,** Honarary General Secretary-Treasurer. **Prof H.G. Denham** and **Mr G.A. Lawrence** were delegates for Canterbury and Wellington respectively. **Mr Donovan** was proxy for the Otago delegate, **Dr R. Gardner** and **Mr (now Prof) A.D. Monro,** was proxy for the Auckland delegate, **Prof F.P. Worley.**

Early meetings of the Council were concerned with the election of foundation members from lists submitted by Branches. The Constitution or Rules had to conform to the requirements of the Incorporated Societies Act and had also to set up standards for admission to the Institute. During 1931, Council and Branches worked on the original draft Rules, prepared by the President and Honorary General Secretary and early in 1932 the Institute was registered as an Incorporated Society.

The Institute Seal.

The Seal of the Institute is one of our most prized possessions. It is jealously guarded by Rules and can only be affixed to documents by resolution of Council. All Membership Certificates carry the Seal, it appears on the Journal cover and on all Institute stationery. The Seal, which shows the open book and a chemical balance, was designed by Mr W.A. Joiner, our first Secretary, and the motto "Per Libram et Librum" (By Balance and Book) was supplied by Prof W.P. Evans.

Denham

Evans

1932

Prof Evans and Mr Joiner, having established the Institute, continued in office for a further year to consolidate it. It might here be remembered that Prof Evans now in his 91st year is living in retirement at Raumati South and enjoying very good health. He sent greetings to the Jubilee Meeting at Palmerston in August, 1955, but did not feel he could make the journey.

1933

President for the year was **Prof Thomas H. Easterfield,** of Victoria University College, later to become Sir Thomas Hill Easterfield, Director of the Cawthron Institute, Nelson. We are glad that a biennial prize has been set up in his honour by the NZ Section of the Royal Institute of Chemistry. The prize was first awarded at the Nelson Conference in 1954. **Mr T.A. Glendinning,** Science teacher at the Wellington Technical College, took over the position of Honorary General Secretary-Treasurer, a position he was destined to hold for 7 years (until December, 1940). Mr Glendinning is living in retirement in Nelson and we were very pleased to have him as an active member of the Nelson Conference in 1954.

1934 and 1935

Prof H.G. Denham, of Canterbury University College, one of the prime movers in the setting up of the Institute, held office as President for these two years. During his term of office the Code of Ethics was prepared and the final draft was submitted to members late in 1935. Balance Sheets are interesting in these early years. Subscriptions were only 10s.6d. per annum and the printing of the Rules cost £6. Also in 1935, the first Annual Conference was held in Hamilton at the High School. This was a joint

The First 25 Years (Cont)

Conference arranged by the NZ Section of the Institute of Chemistry of Great Britain and Ireland and the NZIC and it is interesting to realise that all Conferences since that time have been on the same basis.

1936 and 1937

These years saw Prof F.P. Worley, of Auckland University College, in the Presidential Chair. Prof Worley and the Auckland Chemical Society were probably the most active group in advocating the formation of the Institute and it was Prof Worley who saw the opportunity of convening a meeting of representatives of the four Centres immediately after a University Senate Meeting in Wellington in November, 1931. He has remained an active member of the Institute and has made some very valuable contributions.

The Institute Journal

In 1936 after much discussion the first Journal of the Institute was produced under the Editorship of **Mr O.H. Keys,** of the Dominion Laboratory. In both 1936 and 1937 there was a single annual issue, but in 1938, four quarterly issues were produced. Owing to the high cost of production, publication was held up in 1939 while members discussed future policy. The outcome of the discussion was that **Dr H.N. Parton,** of Canterbury University College, undertook to produce a newsletter type of publication each quarter. Commencing in 1940 this style of publication has continued up to the present time. Dr Parton (now Professor of Chemistry at Otago University) earned great praise for the work he did over 9 years as Editor of the Journal. Adopting the view that Institute jobs should be shared, he then handed on the torch to **Mr S.G. Brooker,** of Abels Ltd., Newmarket, who gathered round him an enthusiastic team of Aucklanders. During his term of office, Mr Brooker initiated the idea of five issues a year, (two-monthly, with no December issue*) and in many ways left his mark for good on the Institute publication. In 1954 after six years of service to the Institute and owing to other scientific obligations in connection with the Royal Society Congress in Auckland, Mr Brooker handed over the Editorship to the Assistant Editor, **Mr Garth Wallace,** of the Dominion Laboratory, Auckland. We are grateful to Mr Wallace for holding the fort very successfully for a year pending the return from England of the Editor-designate, **Dr W.A. McGillivray,** of Massey College, Palmerston North. Dr McGillivray has now been in office for close on a year and one of his first jobs has been the production of this special publication in honour of the first 25 years of Institute activity. We wish him a successful period of office.

(* Actually a list of members took its place. — Ed.)

1938 and 1939

Mr G.A. Lawrence is well known in Wellington as a consulting chemist (The Laboratory, Johnsonville). He did honour to the Presidential chair for a period of two years, and was responsible for the successful production of the Centennial Publication dealing with the part played by the chemist in the industrial life of NZ. Also during this period a card index showing the special qualifications of each member was prepared and copies lodged with the Defence Authorities. In 1938 the first meeting of Council-in-person was held, travelling expenses being paid by the Institute for delegates from each Centre.

1940 and 1941

Dr R. Gardner, Consulting Chemist, Dunedin, was President for these war years. Representations were made on behalf of chemists offering to help in the war effort. Subsequently, a considerable number of our chemists went to Australia to assist on munitions work. During the year the death was recorded of a well-known and much respected Auckland chemist, **Mr J.A. Pond,** who in January, 1941, had been elected an Honorary Fellow in recognition of his services to chemistry in NZ.

An approach was made to the Minister of Health and to the Public Service Commission with regard to the use of the terms "pharmacist" and "chemist". This question has been raised periodically over the years and while individual groups are quite prepared to recognise the difference when it comes to a question of changing the wording of the Act, pharmacists are not prepared to relinquish their alternative title of "chemists", possibly because of the

public attitude towards the well known and more generally accepted term.

In December, 1940, **Mr J.A.D. Nash** was elected to the position of Honorary General Secretary-Treasurer and continued in that position for a period of 3 years.

1942 and 1943

During these war years, **Sir Theodore Rigg,** of the Cawthron Institute, was President and saw the introduction of a number of important matters. First and foremost, as a result of representations, the Public Service Commission agreed to our suggestions for salary rates for graduates entering the Public Service. The question of adequate remuneration for chemists has, since that time, been a continuing activity of the Institute. A number of surveys have been made and information has been supplied for special purposes.

The Industrial Chemical Essay Prize was first offered for competition in 1943, and the first award was made to **Mr C.G.W. Mason** for his essay on "By-Products of the Gas Industry". The Laboratory Assistants' Examination was propounded as a qualification and hence a means of advancement for chemical assistants not able to attend a University. The Medical Advertisements Bill was brought down in Parliament and the Institute offered to assist in raising the level of advertising.

In 1942 the death was recorded of **Mr H.W. Lawrence** (father of G.A. Lawrence), who was one of the first chemists to come to NZ, and who did a considerable amount of work to help the agricultural community. In 1943 the Institute heard with much regret of the death of Dr Denham, of Canterbury University College, who had been intimately connected with the starting of the NZIC and who had taken a leading part in scientific effort with the University and with the Government.

1944

In this year, **Dr R.O. Page,** Woolston Tanneries, Christchurch, made history when he declared that he would remain in office as President for one year only so that the honour might be conferred on a greater number of chemists. With one justifiable exception this has remained the custom ever since, the Rules being amended to provide for the election annually of a Vice-President who would virtually be President-elect. Also in this year the post of Honorary General Secretary-Treasurer changed hands. Mr J.A.D. Nash went to Australia as NZ Scientific Liaison Officer and **W.G. Hughson** was appointed to take over secretarial duties for the Institute.

The new Rules instituted a new class of member to be known as Honorary Fellow, the honour to be confined to a small number of distinguished members. Dr W.P. Evans, first President of the Institute, was immediately elected as Honorary Fellow, and two years later the names of Sir Thomas Easterfield and Mr W. Donovan were added to the list. In 1948 the name of Prof F.P. Worley was added.

The Trust Fund was started on November 1st, 1944, with an initial amount of £100. Since then £50 has been added annually until the last few years when the amount was raised to £75 per annum. This year saw **Dr J.K. Dixon,** our great protagonist on Salary Surveys, persuading Council to send a questionnaire to all members — the first Salary Survey. Dr Dixon has now organised four surveys and with a committee, including **J.L. Mandeno,** has maintained a constant vigil on salary matters.

1945 and 1946

For two years, **Dr J.C. Andrews,** of Challenge Phosphate, Otahuhu, was voted to the position of President. He was persuaded to serve a double term because the President-elect, **Prof F.G. Soper** was due to be away for the greater part of 1946. While in Great Britain in 1946, Prof Soper and Sir Theodore Rigg attended a meeting of Empire Institutes and arranged for increased liaison between Commonwealth Societies, e.g., the exchange of Journals and literature, invitations to Conferences, assistance to visitors from other Institutes, etc.

In 1945 the Annual Conference was re-instituted after a 3-year break due to war conditions; 130 members attended the Palmerston Conference which, although it had presented some organising difficulties, proved a great success. The DSIR and Department of Agriculture granted permission for chemists to attend Annual Conferences "on duty" and Industrial Chemical firms were encouraged to do likewise. Arrangements were also made for chemists from Lincoln, Cawthron, Wallaceville, Soil Survey, Massey and Ruakura to meet during Annual Conferences to determine standard methods for analysis of plant and allied materials. The Industrial Chemical Essay Prize continued to draw entries. **Mr S.H. Wilson** won the award in 1944 with an essay on "The Manufacture and Utilisation of Calcium Carbide; a Possible Electro-thermal Industry in NZ". **Mr M.M. Fieldes** was awarded the prize in 1945 for "A Review of the Electroplating Industry in NZ" and in 1946 the award went to **Mr W.A. McGillivray,** of Massey Agricultural College, for an essay on "The Drug and Cosmetic Industry in NZ".

In 1946 the membership of the Institute had risen to over 300, an Assistant Secretary had been appointed, but the scope of activities was developing so rapidly that the Annual Report and Financial Statement for instance, occupied eleven foolscap pages. The President, Dr J.C. Andrews, had reviewed the financial position of the Institute and enquiries had been made with regard to secretarial assistance in a central office. After much deliberation, subscriptions were raised, and a Registrar was appointed at £100 per annum. In September, 1946, the Examinations' Committee was appointed mainly to organise the Laboratory Assistants' Examination. An Auckland Committee thoroughly examined the pros and cons of taking out a Charter, but the scheme was abandoned mainly on account of excessive cost for only slight advantages.

1947

Dr Soper took the Presidential chair after representing NZ at the Empire Conference of Institutes of Chemistry in 1946, in London. The Food Parcel Scheme

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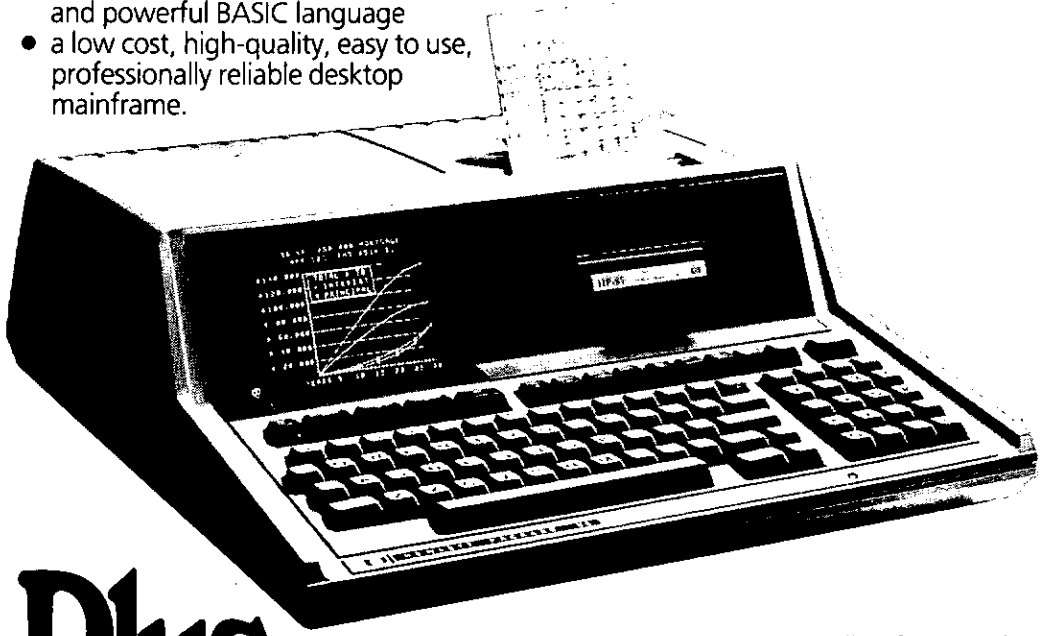

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was inaugurated whereby our members contributed to the sending of parcels to chemists on the Benevolent List of the Royal Institute of Chemistry. **Mr T.H. McCombs, M.P.,** was congratulated on elevation to Cabinet Rank and to the post of Minister for DSIR and for Education.

1948

I should think that Dr J.K. Dixon, President, 1948, has possibly contributed more to the Institute than any other member. He has organised and run schemes like Food Parcels, he has kept salary surveys going, has served on numerous sub-committees and at the same time has held office in a number of other scientific societies. This year the Editorship of the Journal transferrred to Auckland, a second salary survey was run and attention was given to the preparation of a "Contract of Service" to define the relations between a chemist and his employer. Although a considerable amount of work went into the finalising of the "Contract" it has only been used as a source of information or as a guide to chemists seeking employment.

1949

Prof J. Packer, of Canterbury University College, became President. At the Auckland Conference three Australian members of CSIRO attended and gave papers and a public address. All other committees of Council continued their wide field of operations.

During the year, Council learned with regret of the death of Sir Thomas Hill Easterfield, an Honorary Fellow and second President of the Institute. This year saw the first award of the ICI prize and medal "to the chemist who contributed most to some branch of chemical science, judged by research work published over the past five years". The prize was awarded to **Prof L.H. Briggs.**

ICI prize-winners in subsequent years have been:—

1950: Dr F.B. Shorland, Fats Lab., DSIR, Wellington.
1951: Mr E.P. White, Animal Research Station, Hamilton.
1952: Mr C.W. Brandt, Dominion Laboratory (posthumously).
1953: Mr L. Hartman, Fats Laboratory, DSIR, Wellington.
1954: Dr W.S. Metcalf, Victoria University College, Wellington.
1955: Mr R.P. Hansen, Fats Laboratory, DSIR, Wellington.

1950

The President was **Dr J. Melville,** of Grasslands, Palmerston North. Dr Melville has taken an active part in Institute affairs, and we regret very much to hear than he is leaving NZ. At the Christchurch Conference, a snap was taken in the Canterbury University Quadrangle, showing Prof Evans with the Conference Committee and officers of Council. This was the last Conference Prof Evans found it possible to attend.

The Industrial Chemical Essay prize was awarded to **H.A.L. Morris** for his essay on "Furfural". Sub-committees of Council must have risen to a peak, for 14 reports were submitted to the General Meeting. The Professional Status Committee was set up in Auckland to study matters relating to Union Membership, standards of admission, graduate membership and other matters of a similar nature.

1951

Mr P.R. Parr, Chief Chemist to the Westfield Freezing Co., was elected President for the year. Mr Parr represented Auckland at a meeting in Wellington on November 7, 1930, when it was decided to form a NZ Institute of Chemistry, and he has remained one of our most ardent and active members. In this year, another prize was donated. **Messrs. Morcom-Green and Edwards,** of Auckland, wished to recognise good work by younger industrial chemists more particularly in the applied field. It was later decided to extend the award to cover original work in either pure or applied chemistry. The first award went to **Mr I.K. Walker,** of the Dominion Laboratory, Wellington, for work on the spontaneous combustion of wool.

Subsequent awards have been made as follows:—

1952: Dr W.A. McGillivray, Massey Agricultural College, Palmerston North.
1953: Dr B.B. Marsh, Dominion Laboratory, Wellington.
1954: Mr C.F. Denmead, Dominion Laboratory, Wellington.
1955: Dr A.D. Campbell, Chemistry Department, University of Otago.

1952-1955

In the interests of space it is probably less necessary to detail the events of recent years. President for 1952 was **Prof S.N. Slater,** of Victoria University College, an Otago delegate of earlier years. One of his chief responsibilities was to steer the major overhaul of the Rules, quite a formidable task.

In 1953 a veteran of the early days of the Institute, **Dr H.E. Annett,** took the chair. During this year, Prof F.G. Soper was appointed Vice-Chancellor of the University of Otago, and three Wellington veterans, **Messrs R.L. Andrew,** retired Dominion Analyst; **H. Rands,** retired Chemist to the Wellington Gas Co., and **F.T. Seelye,** retired Chief Chemist, Dominion Laboratory, Wellington, were elected to Honorary Life Membership of the Institute. **Prof Emeleus,** of Cambridge, attended the Annual Conference in Dunedin and our Registrar, **Mr H.K. Palmer,** resigned.

1954 was a great year for Nelson and for the Institute. **Dr H.O. Askew** of the Cawthron Institute, was President. He represented the Institute as Chairman of the Chemical Section of the Royal Society Congress in Auckland, and organised the first Conference to be held in Nelson. At this Conference the first presentation of the Easterfield Award was made to **John Rogers,** of Otago School of Mines and members of the Easterfield family were able to attend the lecture. **Mr V.J. Wilson,** of Technical Publications Ltd., was appointed Registrar. **Dr G.A. Bottomley** produced a striking statement of salaries paid to science graduates. During the royal Tour, the **Duke of Edinburgh** addressed scientists in the Lecture Hall of the Wellington Museum.

Finally we come to the Jubilee year, 1955, with **Mr K.M. Griffin,** Government Analyst, Dominion Laboratory, Auckland, in the Presidential Chair. Mr Griffin was in the Auckland Chemical Society before it became a branch of the NZIC. His enthusiasm has been shown over the years by strong and active criticism of many of the decisions of Council. Those who were at the last Conference at Palmerston North would recognise the same energetic enthusiasm being brought to bear on all Institute activities. At that Conference we were privileged to have **Dr C.M. Johnson,** of the University of California as a Fulbright visitor.

And so, as this publication appears, we reach the end of 25 years of real progress. The Institute history is the history of the individuals who have devoted time and energy to its many activities.

Further information on people mentioned in Mr Hughson's article may be found in the following Journal references.

Andrew, R.L. (Obit) 1962 91
Andrews J.C. (Obit) 1967 4
Annett H.E. (Obit) This issue
Askew H.O. 1953 48 (Died 1978)
Brooker S.G. 1964 23; 1976 87
Campbell A.D. 1979 199
Denham H.G. (Obit) 1943(2) 1
Dixon J.K. (Obit) 1966 257
Donovan W. (Obit) 1951 67
Easterfield Sir T. (Obit) 1949 63
  See also 1938 80; 1974 137; 1979 215
Evans W.P. (Obit) 1959 193
Fieldes M.M. (Obit) 1973 128
Gardner R. (Obit) 1967 62
Glendinning T.A. (Obit) 1967 164
Griffin K.M. (Obit) 1972 13
Hughson W.G.M. 1957 21; 1963 4
Joiner W.A. 1957 1
Keys O.H. See this issue
Lawrence G.A. (Obit) 1972 88, 117
Lawrence H.W. (Obit) 1942(3) 1
Mandeno J.L. (Obit) 1972 121
Mason G.C.W. (Obit) 1978 18
McCombs T.H. 1973 170; 1974 175
McGillivray W.A. 1970 213; 1977 116
  See also this issue
Melville J. 1950 1; 1955 134
  Now lives in retirement in South Australia
Munro A.D. 1962 14
  Lives in retirement at Paremata, Wellington
Nash J.A.D. 1956 55
Packer J. (Obit) 1971 80
Page R.O. (Obit) 1957 143
Parr P.R. (Obit) 1968 122
Parton H.N. 1954 104; 1972 14,151; 1975 70. See also this issue.
Pond J.A. (Obit) 1941(3) 15
Rigg Sir T. 1938 5; (Obit) 1973 30
Seelye F.T. (Obit) 1962 192
Shorland F.B. 1962 3
Soper F.G. 1950 41; 1975 70; See also this issue
Walker I.K. 1978 17
Wallace G.M. See this issue
Wilson S.H. 1977 41
Worley F.P. (Obit) 1961 27, 57

PRIZEWINNERS 1955-1980

Easterfield Prize
1957 R.E. Corbett
1959 A.D. Campbell
1961 T.A. Turney
1963 A.T. Wilson
1965 L.F. Phillips
1967 R.M. Golding
1969
1971 M.P. Hartshorn
1973 W.R. Markham
1975 H.K.J. Powell
1976 K.J.D. McKenzie
1978 R.E. Mitchell
1980 D.R. Crump

Morcom-Green & Edwards Prize
1956 I.R.C. McDonald
1957 T. Marshall
1958 R.D. Batt
1959 E.L. Richards
1960 H.P. Rothbaum
1961 J.R.L. Walker
1962 G.W. Butler
1963 E. Wong
1964 D.J. Brasch
1965 D.E. Wright
1966 W.A.J. Mahon
1967 G.J. Schafer
1968 D.A. Hills
1969 Discontinued

ICI Prize
1956 C.J. Wilkins
1957 F.H. McDowall
1958 J.K. Johanneson
1959 J. Packer & J. Vaughan
1960 H. Bloom
1961 W.A. McGillivray
1962 A.J. Ellis
1963 R.W. Bailey
1964 R.C. Cambie
1965 I.K. Walker
1966 R. Hodges
1967 H.P. Rothbaum
1968 R.C. Lawrence
1969 B.R. Davis
1970 E. Wong
1971 J.E. Fergusson
1972 L.F. Phillips
1973 J.C. Dacre
1974 L.K. Creamer
1975 C.J. O'Connor
1976 H.K.J. Powell
1977 G.P. Glasby
1978 G.B. Russell
1979 K.G.B. Theng
1980 B. Halton

Chemical Essay Prize
1959 R.D. Batt
1960 J.C. Dacre
1961 P. Meredith
1962 W. Freitag
1963 T.I. Quickenden
1965 M.R. Grimmett
1967 J.C. Dacre

No further awards were made, and this award was eventually replaced by the

Student Essay Prize
1974 K.R. Bedford
1975
1976
1977
1978 C.J. Nokes
1979 S.L. Marshall
1980 Miss L.M. Ball

ICI Tasman Industrial Prize
1978 R.P. Garland
1979 M.B. Rands
1980 H.P. Rothbaum

NZIC OFFICERS 1931-1980

Year	President	Secretary	Asst. Secretary	Registrar	Editor
1931	Prof W.P. Evans*	W.A. Joiner			
1932	"	"			
1933	"	"			
1934	Prof H.G. Denham*	T.A. Glendinning*			
1935	"	"			
1936	Prof F.P. Worley*	"			O.H. Keys
1937	"	"			"
1938	G.A. Lawrence*	"			"
1939	"	"			(No Journal)
1940	Dr R. Gardner*	"			Dr H.N. Parton
1941	"	J.A.D. Nash			"
1942	Sir T. Rigg*	"			"
1943	"	"			"
1944	Dr R.O. Page*	"			"
1945	Dr J.C. Andrews*	W.G. Hughson			"
1946	Prof F.G. Soper	"			"
1947	"	"		H.K. Palmer	S.G. Brooker
1948	Dr J.K. Dixon*	"		"	"
1949	Prof J Packer*	"		"	"
1950	Dr J Melville	"		"	"
1951	P.R. Parr*	"	A.P. Oliver	"	"
1952	S.N. Slater*	"	"	"	"
1953	Dr H.E. Annett*	"	B.G. Stanley	"	"
1954	Dr H.O. Askew*	"	"	V.J. Wilson	G.M. Wallace
1955	K.M. Griffin*	"	"	"	W.A. McGillivray
1956	Dr M.M. Burns	"	W.E. Harvey	"	"
1957	W.A. Joiner	Dr W.E. Harvey		L.J. Rollo	"
1958	Dr C.R. Barnicoat	"		"	"
1959	Prof L.H. Briggs*	"		"	"
1960	E.W. Hullett	A.P. Oliver		D.J. Hogan	N.T. Clare
1961	Prof H.N. Parton	Dr W.E. Harvey		"	"
1962	Dr F.B. Shorland	"		"	"
1963	W.G. Hughson	"		"	"
1964	S.G. Brooker	"		"	"
1965	Dr S.R. Siemon	"		"	Miss J.M. Mattingley
1966	Dr A.T. Johns	"		"	"
1967	M.S. Carrie	"		"	"
1968	Prof D.R. Llewellyn	"		"	"
1969	Prof J. Vaughan	"		"	"
1970	Dr T.A. Rafter	"		"	"
1971	Dr W.A. McGillivray	"		"	"
1972	K.E. Seal	"		"	"
1973	Prof R.E. Corbett	"		"	"
1974	Dr P.K. Foster	"		"	"
1975	Dr C.L. Davey	"		"	"
1976	J.S. Pollard	J.G. Fletcher		"	"
1977	Prof G.N. Malcolm	"		"	Dr L.K. Creamer
1978	Prof W.E. Harvey	"		"	"
1979	Prof A.D. Campbell	"		"	S.G. Brooker
1980	Dr A.J. Ellis	"		"	"

The years given are the years the people concerned actually took office — later years from 1st September in the year given.

*** Deceased**

Honorary Fellows
(in alphabetical order).
H.E. Annett*
C.R. Barnicoat
L.H. Briggs*
S.G. Brooker
M.S. Carrie
W. Donovan*
T.H. Easterfield*
N.L. Edson*
T.A. Glendinning*
K.M. Griffin*
H.C. Holland
E.W. Hullett
A.T. Johns
W.A. Joiner
O.H. Keys
G.A. Lawrence
A.W. Mackney
T.H. McCombs
A.D. Monro
J. Packer*
P.R. Parr
H.N. Parton
T.A. Rafter
Theodore Rigg*
F.B. Shorland
F.G. Soper
L.S. Spackman
I.K. Walker
* Deceased

The Second 25 Years: A Personal View

Introduction

The first 25 years of NZIC history may not be available to the majority of members, so we felt that we could not do better than reprint **Mr W.G. (Mick) Hughson**'s excellent summary from the Silver Jubilee issue of 1955. The last 25 years are much better documented, and several files of Vols. 21-45 of the Journal are available in various places. It is proposed to discuss certain features of the period with a rather personal and maybe controversial view of their significance and portent.

Personalities

The history of the NZIC in its later years is dominated by two Hon. General Secretaries, **W.G. Hughson,** and **Dr W.E. (Ted) Harvey,** and by the more unobtrusive services of **Denis Hogan** as Registrar, in an unbroken stand of 20 years. It is difficult to overestimate the value of their contributions; with a constantly changing Council, and an annual change of President, these men have provided a continuity which was really needed. The first Registrar was a professional accountant, appointed in 1946, and non-chemists held the post until Denis was appointed in 1961. He proved the ideal man with his willing service, his efficiency and excellent grasp of NZIC affairs. **Mrs Betty Wignall** was appointed Executive Secretary in 1974 to assist him.

After Ted Harvey was elected Vice-President in 1976, **Gavin Fletcher** of Auckland took over as Hon. General Secretary. With his fertile mind, he supplied a new approach and drive to the Institute's executive. Since his resignation in November 1980, **Dr John Rogers,** recently retired as Director of Fertiliser Research, has been called to the colours until the next AGM.

Membership

Hughson's report does not say how many foundation members paid their half-guinea ($1.05), but from the number who attended the various meetings held to discuss the formation of the NZIC in 1930, it would be about 100. This had risen to nearly 600 in the Silver Jubilee year and to 1406 by 1980. Over the past 25 years this is a rather unexciting compound rate of 3.5% per annum. Introduction of new grades of membership has helped the numbers, and we hope that this will apply with the grade of student membership, due to be approved by Council in April, not only in the interests of the students themselves, but also because it should increase the rather low proportion of new graduates who join our ranks.

It seems that the proportion of non-member chemists is greater in industry than in University or Government, and efforts to increase membership must be addressed particularly to this problem. We miss out with regard to chemical engineers, who tend to be active in the Institution of Engineers rather than the NZIC. The situation is different in North America where the Chemical Institute of Canada has many chemical engineers among its members and publishes the 'Canadian Journal of Chemical Engineering'.

The introduction of new disciplines into industries, has meant that other scientists fill positions previously occupied by chemists. An example of this is the output of graduates from the new courses in food science and technology at Massey, ironically the brain-child of one of our most distinguished Presidents, **Dr J.C. Andrews.**

Publications

The story of the Journal has been well covered in the essays by the various Editors. As far as other pubications are concerned, the preparation by the Auckland Branch of the 470-page book 'Chemical Processes in New Zealand' in 1978 marked an important new direction in publication for the NZIC. Written primarily for secondary school teachers, the demand for the book both here and overseas showed a much wider readership than expected and necessitated two reprintings, on which **Dr J.E. Packer** and his associates are to be congratulated. The Auckland Branch was also responsible for an attractive booklet for secondary school pupils, 'Careers in Chemistry' in 1969.

A Wellington team is organising the production of a book on the history of chemistry in NZ as part of the Jubilee celebrations.

The NZ Section of the Royal Institute of Chemistry.

In 1926, the local members of what was then the Institute of Chemistry of Great Britain and Ireland joined together to form a New Zealand Section which held its first conference in 1928 under the chairmanship of **Sir Thomas Easterfield.** In 1935 they combined with the NZIC in the first joint conference, held in Hamilton, and continued to do so, as well as co-operating in the joint list of members. In 1963, the Section disbanded, but the valuable Easterfield medal, our most prestigious award for research in chemistry, is being provided every 2 years by the Royal Institute, now joined with the old Chemical Society in the Royal Society of Chemistry.

Conferences and other meetings

Dr Hugh Parton, in the first of several significant utterances on the activities of the Instituite, speaking to the Canterbury Branch in 1938, said "While the Institute embraces most of the qualified chemists in the country and provides an opportunity for chemists to meet and hear each other's views on technical topics ... I have been unable to persuade myself that the Institute is performing any useful function at all." Parton's own contributions, including a stint as Editor of the journal would give the lie to this statement, but surely getting chemists and biochemists together in Conferences is in itself justification enough of the useful

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purpose of the Institute. The Conferences in their programmes mirror the progress of chemistry and indicate the lines of research being undertaken in the country. Conferences now follow a predictable pattern with specialist papers on original research, reviews by overseas speakers, and the usual ritual obeisance to industrial chemistry; it is hard to foresee any major change in a pattern which has been generally successful.

The Branches continue to have regular programmes of meetings with some concern over low attendance. Some have also been holding symposia, such as those by the Auckland Branch on analytical techniques, and Manawatu on energy. The success of these and their appeal to a somewhat different section of membership, warrants their extension.

Professional Status

From time to time the question of a charter for chemists has been raised, mainly because it was hoped that through it they might have exclusive use to the title 'chemist'. The last discussion on it was at the 1979 AGM, where the proposal was roundly defeated. It would have cost several thousand dollars, and it seemed very doubtful whether it would have received the necessary Government support.

In subsequent correspondence with the Pharmaceutical Society, it appeared that the Society favoured the title 'pharmacist' for their members, but the commercial arm of their profession had registered the name 'chemist' in the Chemists' Guild. Since it was widely used in advertising, the pharmaceutical chemists would naturally be loath to give it up.

(It is interesting to note that the Pharmaceutical Society in Britain, after being involved in litigation over advertising, has issued a statement for the guidance of pharmacists which, in part, reads as follows:—

"(1) The advertising (using the word 'chemist') must be for non-professional goods and services.

"(2) The use of the word 'chemist' is permitted only once in the advertisement whether or not it is part of the registered company or business name.

"(3) The type of the word 'chemist' whether used alone or in a company or business name must be no larger than half the size of the name of the advertiser, and be no more prominent than is necessary for identifying the advertiser.")

NZIC members have at times being under threat of Union action, and in 1959, Council went so far as to approve in principle formation of a Union of members, but nothing further came of it. Council also took action over the Industrial Relations Amendment (No 3) Bill, 1976, since it appeared that chemists might be subject in some cases to compulsory Union membership. The Bill listed 12 professions, including engineers, who were registered under specific legislation and exempted under the new Bill. The President of the NZIC wrote to the Labour Committee of the House asking that professional members of the NZIC also be exempted. The Minister of Labour would not accept this since the NZIC was not a self-disciplinary body which had the power under certain circumstances to deprive any member of his livelihood.

Any member likely to be affected by the new Act was invited to submit a case to the Hon. General Secretary, but no further action is recorded.

Allied with the question of professional status of its members, the NZIC itself needs to gain more recognition. It is irritating to our members, and confusing to the public, for example to hear it referred to as 'the Institute of Chemists' as often happens. This can be achieved by press releases on questions where chemistry is involved. The Hazardous Chemicals Sub-committee is recognised as a source of advice on spillages of toxic or potentially toxic chemicals, and in adequate labelling of containers of such materials. Branches are also being urged to take advantage of the Golden Jubilee celebrations to bring the NZIC and its activities before the public.

Specialist Groups

These have been discussed by **Denis Hogan.** While they are probably an inevitable development, it is necessary in a small country such as ours to consider very seriously how they can be made to strengthen the Institute rather than weaken it.

This question is not unrelated to the problem we have referred to elsewhere of the small proportion of industrial chemists who are members of the NZIC, and the small part they play in its activities — of the 42 Presidents so far only 4 have been from industry, which could make the average industrialist feel that the Institute is something of an ivory tower. The situation could well be helped by having strong and active Industrial Groups in each of the 6 Branches.

The Royal Society

In 1964, after much discussion, the Institute was admitted as a member body of the Royal Society of NZ. The relevant part of the Annual Report (over the signature of the writer, who was President at the time) says "...the closer association should do much to eliminate the occasional disagreements which have existed in the past." While there may not have been any active disagreements, the activities of the Society arouse little enthusiasm in the mind of the average member of the NZIC. **Dr Shorland's** letter in another part of this issue suggests one

Stan Brooker should be well qualified to write on the last 25 years of the NZIC as he is one of a very small group who are both mentioned in Mick Hughson's review in the 1955 Silver Jubilee issue of the Journal and are still active in the NZIC. Besides being in his second term as Editor (the first was from 1947 to 1953) he has been on Council for several years including a term as President in 1964. He has been Hon. Librarian for 24 years — a record period for any office in the NZIC. Originally this involved looking after a collection of about 40 periodicals which he built up by exchange during his first period as Editor. The bulk of this collection is now housed at Massey University, but he justifies his office by looking after a residual collection at the Auckland War Memorial Museum. As Chairman of the Examinations Committee, he presided over its demise, and has also been a member of the Membership Committee (which survived).

Stan can also speak authoritatively on the Royal Society of NZ since he was on the Council of the Society for several years and was an original member of the Sectional (later National) Committee for Chemistry. In this capacity he represented NZ at the IUPAC Council Meeting held at Cortina d'Ampezzo, Italy, in 1969, and was a corresponding member of the IUPAC committee on Oils and Fats until he retired in 1976. He is justly proud of the fact that he has been President of 3 Member Bodies of the Royal Society; the NZIC, the Institute of Food Science and Technology, and the Auckland Institute and Museum. He is now an Hon. Fellow of the first two, and is in his 26th year on the Council of the third.

After graduating M.Sc. from Victoria College in 1933, Stan spent most of the 43 years of his working life concerned with the chemistry of fats and oils. His reputation and continuing involvement in this field is reflected by his position as the first Honorary Lecturer in Chemistry at the University of Auckland, and his activities as a consultant to the chemical and food industries. The breadth of his interests is further evidenced by the forthcoming publication of a new edition of his book "Medicinal Plants of NZ", written with Dr R.C. Cooper and this time including Prof. R.C. Cambie as an additional author.

Readers of "Polemics from the Pulpit" will be reassured to know that the ecclesiastical tone is soundly based, the author having been a lay preacher in the Methodist Church for 47 years. Stan's hobbies include reading, watching cricket and football, playing table tennis (with his grandchildren), and philately. He and his wife have lived in the same house in Remuera since their marriage in 1939 and they have 4 children and 8 grandchildren.

Tony Herd.

reason, but whoever is to blame the NZIC is not accorded the place that it should have as the major professional member body. It is of some significance that in having the majority of the practitioners of our science outside the University and Government, we are rather akin to the Medical Association and the Institution of Engineers, who have chosen not to become member bodies.

New Zealand's membership of IUPAC is through the Royal Society as the 'adhering organization' since it receives funds from the Government for the purpose. This is surely an anomaly and it is to be hoped that in time the NZIC will have the necessary funds to pay its own way into the International Union, and thus align itself with most 'adhering organizations' from other countries.

General

The Institute has continued to help its members by conducting salary surveys in which **Dr Peter Foster** has played a notable part, not only in the collection of data but also in drawing conclusions therefrom.

There has always been some soul-searching among the leaders — and among the rank and file — of the Institute as to its functions and usefulness. We have already referred to Parton's thoughts; in more recent years, **Shorland, McGillivray, Pollard** and **Malcolm** have considered the matter in their Presidential addresses. It is good to have some dissatisfaction expressed, but the Institute can look back on 25 years in which it has done a lot and attempted a good deal more. The truth is, of course, that if there was no NZIC chemists would have to have some other organization; we cannot be a profession without a professional body.

As I have been preparing this continuing saga, I have come to realise that while a Golden Jubilee is an occasion for reviewing the past and rejoicing over its successes, it is more important to take stock and contemplate moves which will lead to a growing NZIC giving more effective service to its members. Gavin Fletcher feels that with 2000 members we could afford the full-time executive officer mentioned by Denis Hogan; with our present rather pedestrian rate of growth, we should reach this figure some time early in the nineties. It would be nice to see it sooner so that the officer could be installed before the Diamond Jubilee in 1991.

An annual change of President honours many chemists, but does not give them time to exercise full leadership. Shorland mentioned this in his Presidential address in 1962, and suggested that a Policy Committee should be formed, which would not be concerned with the ad hoc decisions which are the work of the ever-changing Council. This is a good suggestion and one of the first tasks of such a committee would be to do the sums necessary to work out how many members we need and what subscription they should pay for the NZIC to have the Executive Officer mentioned above.

And they could do their sums on a monthly 'Chemistry in NZ' also — but after I have resigned my seat!

S.G.B.

CHANGES & CHALLENGES IN CHEMISTRY — The Next 20 Years

G.W. Butler, A.J. Ellis

At the beginning of the Institute Jubilee year it is appropriate to look forward to the remaining two decades of this century and the way in which the chemical profession may make chemistry work for NZ's future. Jubilee occasions need not be dominated by retrospective thinking and reminiscences by our older members. By commenting on some future challenges it is hoped that Institute members will be encouraged to do some forward thinking in their own areas of work.

The only generality arising from the predictions of the 1960s and 1970s was how wrong they were. Predictions such as a new technological society, new cheap power, and definite limits to food production have not eventuated in the way that they were envisaged. In looking forward there is always a temptation to expect more rapid changes than really occur, and in this type of exercise it is wise to look backwards also, and not to expect the rate of change to be much greater than that which has just been experienced.

In the recent past it is surprising how little chemistry has changed in some of its basic procedures. For example, in 1960 NMR, Mossbauer, and most chromatographic separation procedures were in use. In their present form the techniques would not be easily recognised by a chemist of the 1960s, but the changes are essentially refinements rather than new principles. By extrapolation, one should not expect chemistry to have completely changed its form by the year 2000.

The ability to tackle complex tasks with greater facility and speed will be the centre of change. For example, the "cracking" of the genetic code of micro-organisms has depended largely on the development of elegant separation and analytical procedures for examining DNA, RNA and proteins, including the capability to do complete sequence analyses. In 1960, such abilities seemed impracticable; now they are routine laboratory exercises and one can foresee extraordinary capabilities for modifying the genetic code of higher organisms and also of applying such techniques in the commercial production of complex proteins and peptides, including regulators of cellular metabolism which will constitute a new armoury of therapeutants.

Dr Graham Butler, with F.B. Cousins and Dr J. Melville (President, 1950) wrote on the future of Chemistry in NZ in the 1955 Silver Jubilee issue. In predicting a membership of the Institute of between 980 and 1588 by 1980 they were remarkably sound.

Dr Jim Ellis is President of the NZIC; both he and Dr Butler are Assistant Directors-General of DSIR, Wellington.

Rapidly advancing computer and electronic techniques will have a major control on the development of chemistry. Major progress will be possible in areas not easily accessible before, such as very fast reactions, complex solid structures and surface chemistry processes. Analysis increasingly will become automated, not always to the benefit of accuracy unless those in control maintain a clear knowledge of the principles involved. Computer-based international information retrieval systems will be part of normal laboratory facilities.

In looking at our future the increasing complexity of NZ's trading relationships with other countries is a major factor for consideration. More innovation and initiative will be required from our industries in product areas where this country has an advantage. We must be highly selective and very good at what we decide to do. As one of the major technical professions in NZ, chemistry has an obligation to assist with this choice, and certainly will be involved in many new developments.

The chemist and chemical engineer will be exposed more to public scrutiny as decisions are made over new processes of industries, or about chemical usage. Their comments on public issues will be debated and perhaps criticized. Finance for science will not flow in such a steady stream as in preceding decades and the chemist will have his or her projects examined more stringently for relevance both by scientific peers and by the purse-string controllers. The post-war concept that general investment in science pays has lost momentum. New Zealand science, as elsewhere, will become more selective through financial restraint. It will be important to probe in depth those areas of science which are selected.

The shock of the continuing oil crises and the subsequent stresses on the economy affect us all. It has forced the country into a round of planning which has considerable implications for chemists. New Zealand has been somewhat surprised to find itself an energy-rich country, but with an embarrassingly long time delay before it can utilise the energy resources in the form most needed — that of liquid fuels for our transport industry. One of the major impacts in the next decade or so will be the creation of petro-chemical industries of an unprecedented size in this part of the world. We will see methanol, gasoline, ammonia/urea, and possibly plastics production from our major natural gas resources. An extended oil refinery will come into operation. Many new jobs for chemists and chemical engineers will occur through the manufacture and utilisation of energy materials. With the finite lifetime of natural gas resources, increased attention is being paid to the

large coal deposits in Southland-Otago and the Waikato. Coal has been an unpopular topic with chemists in recent decades, but advances in physical techniques and structural theories enable new insights to be obtained into its structure and reactivity. The chemistry of coal and its various products is likely to expand into a major research effort.

Central to the utilisation of our energy resources is the ability to reform fuel gas mixtures by catalytic processes to the desired chemical products for liquid fuels, or for further processing. Much of this technology will be purchased from overseas, but the field of catalysis is fast moving and our chemists should be in a position to assess new possibilities from the strength of knowledge rather than receive in ignorance. There is a need for an extension in studies of surface chemistry and catalysis within both university and government laboratories.

Also on the energy front, it is possible that within the next 20 years NZ will re-examine its attitude to nuclear power and its comparison with electricity generation from coal, water and geothermal resources. There is considerable environmental concern about increasing carbon dioxide levels in the atmosphere and about damming rivers. The relative importance of global effects arising from the carbon dioxide released from coal burning and from the minor radio-activity released from nuclear stations is likely to be hotly debated at an international level.

The site for a second aluminium smelter has just been announced. Developments from the combination of our energy resources with indigenous mineral resources will also be carefully re-examined. The possibilities of ferro-silicon and of silicon manufacture have been promoted in the past and there is a good chance of a new silica-based industry developing within a decade. The production of refined silicon could lead to further high-value products such as semi-conductor quality silicon for which the demand will increase rapidly over the next decade. Development of our silica resources may also lead to further fine glassware production.

The high cost of energy will bring about a better appreciation of the value of materials and structures. Improved protection, against corrosion, weathering and wear, will be in demand. The chemist will be expected to formulate new materials or protective coatings to extend lifetimes.

We have neglected the chemistry of our marine environment. There has been little work on chemical oceanography or on the chemistry of our fish or fish products. This is slowly changing, with increased resources being allocated to fish processing in particular, but some of the land-based geochemistry effort is likely to transfer gradually to the marine environment. New Zealand organic chemistry has very much been terrestrial based and a greater interest is indicated in the different organic structures produced by marine organisms.

The organic chemist has a vast array of synthesis procedures available and high ability to derive natural product structures. There is perhaps a lessening feeling of achievement in structure making or solving for its own sake but an increasing interest in the natural biological processes that create and utilise the structures. Computer techniques will be increasingly used for modelling organic synthesis routes for maximum efficiency and yield.

Organic polymers such as proteins, cellulose, lignins, coal and humic acid have a major role in the different industries which are part of our economic future. Polymers are gradually having their secrets unravelled by improved structural concepts and by instrumental methods extended by modern computer capabilities. There will be a growing effort in these areas.

Because of NZ's continuing reliance on land-based exports, it is on the border line between biology and chemistry that many challenges will be faced. Tinkering with the chemistry of genes will lead to new opportunities for chemists in the land-based industries and also in the health services. For example, chemists will assist plant and animal breeders to introduce desirable genes into crops and farm animals. Chemical engineers will use micro-organisms which have been modified by novel genetic techniques to produce desired high value chemicals for use in industry and medicine.

Because of an anticipated world shortage of feed grains through to 2000, it is expected that we will be able to market increased quantities of pastoral products from our beef, sheep, dairy and deer industries, provided that we are able to maintain our advantage in production costs. A key element in ensuring this will be the development of new techniques for production and utilisation of the major phosphatic and nitrogenous fertilisers. Improvement of the effectiveness of symbiotic nitrogen fixation by legumes will be a goal of high priority and the various steps of the nitrogen cycle in farming and cropping systems will be closely studied to reduce wastage and environmental pollution through leaching and volatilisation. It is possible that by 2000 we shall be using synthesised metallo-organic complexes which can replace the biological nitrogen fixation process to ammonia, and which are less sensitive to the field environment.

Higher costs in pastoral farming may lead to an intensive programme to gain more long-term value from phosphatic fertilisers which at present are to a large extent wasted by binding into soil structures. The loss of nutrients from soils is of concern and the mechanisms by which they are bound into soils need to be clarified. Also, much of the increased pastoral production will come from hill country and knowledge of the chemistry of acid soils with high organic matter, low nitrogen and unfavourable micronutrient status will be important in overcoming production limitations. A new generation of interest in organic-mineral interactions in soils has already begun.

Horticultural crop exports are increasing rapidly. The traditional answer of applying a new specific chemical to combat a pest or disease will not be permissible as the public demands more stringent and costly tests of new individual agricultural chemicals and export markets demand ever lower levels of trace pesticides or insecticides. Increasing international travel and commerce are likely to bring a wide variety of new crop diseases here.

The maximum use will have to be made of natural protection mechanisms in pest control on crops in conjunction with a limited range of non-persistent pesticides. There are already successful applications and much research on means of protection from insects, noxious animals and diseases other than by widespread chemical spraying. Scents in the animal and insect kingdoms, controlling alarm, or sexual attraction or repulsion, can be used which makes the chemistry of these pheromones a significant area for research. The ability of plants to protect themselves from pests by natural feeding or growth deterrents will be sought by a chemical understanding of the processes and substances involved.

The increasing cost of airfreighting perishable crops overseas points to an urgent need for more research on the ripening and ageing processes in fruit and vegetables, and the inhibition of post-harvest changes by controlling the chemical environment of storage so that cheaper sea freight can be used.

By careful grape variety selection and quality control we may be a major wine exporter within a decade. This relatively new area for NZ chemistry could expand rapidly. The establishment of a Wine Research Association is already suggested, and the development of a wine chemistry interest within a university chemistry department is desirable.

The forestry processing industries will expand rapidly from the 1990s as existing plantations mature. The chemistry of pulping processes will be examined by an increasing number of chemists, also concerned with better utilisation of the vast volumes of by-products. Alcohols production from waste wood is one such possibility.

The major primary industries (meat, wool, dairy) will increasingly be involved in producing a new and wide range of processed products for specific overseas markets. This trend developed strongly during the 70's for all three industries and played a large part in increasing the value of exports despite virtually static total stock units over most of the decade. It will continue as part of market diversification, particularly to nations around the Pacific. The wider utilisation of by-products such as tallow, lanoline, blood and gland constituents by refining and chemical transformation is a challenge.

Food will be monitored more stringently for undesirable trace chemical constituents such as herbicides and pesticides while there will be increasing demands made for nutritional value and purity in food manufacture. Export foods more generally will be required to be accompanied by certificates of their quality, purity, or limits of particular adulterants. Further, the ability of individual laboratories to provide accurate analyses will be required to be proven by a third party. In NZ the TELARC organisation will fill this role.

It is unlikely that public concern over potential chemical pollution of the environment will abate. The future will see an even more intensive policing of effluent emission by industry at large. The cycling of various industrial pollutants in the biosphere will be monitored along the

Two Decades Of Institute Progress

Denis Hogan

Progress always seems slow when looked at in close perspective but over a 20-year span a pattern of steady development can often be seen. This has been brought home to me by a request from the Editor to consider briefly the significant changes I have seen in the Institute during my 20 years as Registrar. Apart from the obvious large increase in membership from 600 to over 1400, I believe the most significant to be the revision of the grades of membership and the formation of specialist groups. It is important to remember that the Institute has always functioned as a learned society and as a professional group. It is interesting to note in passing that the bodies serving these separate functions in the UK (the Chemical Society and the Royal Institute of Chemistry) combined in 1980 to form the Royal Society of Chemistry speaking with one voice on both aspects.

On the professional side the NZIC has revised its grades of membership while retaining the pass degree as the basic level for professional membership, a level which has suited both the Australian and the NZ Institutes well. The qualifying period of professional experience for full membership was increased to 4 years, and candidates were required to present themselves for interview; the aim was to ensure that pre-membership experience was of a sufficiently professional nature. At the same time steps were taken to recognise the NZCS (Chemistry) with the new Technician and Associate Member grades. (In the past most of the professional members of the Institute were 'Associates', but in the eyes of some this has a connotation of less than full membership, so the term was abandoned in favour of 'Member'.) These new grades were intended to encourage NZCS holders to join the Institute and give them a recognised status within it. To complete the record, Graduate Membership was introduced in 1970 and it is expected that Council will approve a Student grade this year.

During the period under review, the Institute decided that it could not effectively act as an examining body. Its pioneering Laboratory Assistant's Certificate had been replaced, with NZIC encouragement, by the NZCS, and candidates for higher qualifications were too few to justify maintaining an Examination system.

The most important 'learned society' development has been the creation of specialist groups (13 at present) allowing informal contact within the sub-discipline by both members and non-members — the latter sometimes in a majority. The groups operate under the general umbrella of the NZIC which offers free administration to them. They have acted to prevent fragmentation of the NZIC into a number of specialist societies and are an important part of Institute activities. activities.

The first steps have been taken towards a full-time secretariat with the appointment of **Betty Wignall** as Administrative Secretary. Having worked for 4 years in the Chemistry Division at Gracefield, she is no stranger to our science. This has enabled the chore of subscription collection to be lifted from Branch treasurers. The compilation of addresses and lists of members have been computerised which has extended to subscription notices and recording. Accurate membership and financial information are now much more readily available.

Our Journal 'Chemistry in NZ' has been through good times and bad. At one stage threatened with extinction, it has bounced back into a regular, newsy two-monthly.

For me some of the outstanding developments have been in the field of chemical education. From the Canterbury Branch inaugural 'Chemistry in Action' lectures in 1958 to the formation of the Chemical Education specialist group has seen the Institute offering strong support for chemical education, particularly at the secondary school level. The success of the publication 'Chem NZ' and the Auckland Branch's 'Chemical Processes in New Zealand' have been major contributions from the NZIC. Looking to the future, I see the Institute struggling to keep income ahead of increasing costs, and hope that among the membership there will be a growing realisation that the NZIC is the key organization to speak for the discipline of chemistry in all its aspects. I trust that members and potential members will realise that the Institute is worth supporting both financially and otherwise in order to keep their chosen profession strong. This means accepting a realistic professional-body subscription which keeps up with inflation, and together with a substantial increase in membership, provides financial strength for several things I would like to see happen, and which I believe are important to the long-term health of the Institute.

Among these are the production of a monthly Journal, which is vital to improved communications, more encouragement and administrative support for specialist groups, more joint conferences with RACI groups, such as the COMO conference in this year, further support for publications such as 'Chem NZ' and 'Chemical Processes in NZ' and a full time secretariat.

Over many years at Council meetings I have detected something of a 'them' and 'us' relationship between Council and the branches. The Branches should realise that they **are** the Council and that both are working to the same end. Branches are where the action **is**; they and the Journal are the most important points of contact with the members.

The Next 20 Years (Cont)

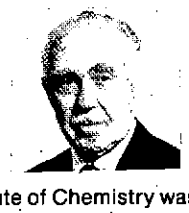
guidelines which developed during the 70's and will be related to the epidemiology of various human illnesses.

On average there will be one major problem of quite unexpected nature arise during each decade which will confound predictions, in a similar manner to the oil crisis of the 1970s.

A general management problem within chemical organisations over the next decades will be the increasing average age of staff involved in practical projects and laboratory work. Until now, this has not been of major concern as with the rapid growth in science staff numbers over the 1960s and 1970s, the natural trend was for mature staff to take the evolving new management positions and thus become generalists. Technical specialisation will continue at a pace, and one period of formal training at the beginning of a professional career will no longer be sufficient for people remaining as practitioners. It is likely that a formal retraining period of 6-12 months, creating new specialisation may be necessary at about 7-10 year intervals, and will have to be budgeted for by employers, and catered for by universities and polytechs. This is probably a challenge which cannot be taken lightly.

As a final commentary, by the end of the century, the numbers of members of the NZIC may equal that of the year 2000.

The Institute's First Secretary: Bill Joiner Looks Back



When the NZ Institute of Chemistry was formed in 1931 there were not a great number of chemists in the country. Most were employed in the University Colleges and in a couple of Government departments. Only a few were either in industry or in private practice.

The designation "Chemist" at that time was, in law, reserved for people in another profession, the pharmacists. Those engaged in the science or application of chemistry to some extent got over this difficulty by using qualified terms such as agricultural chemist, analytical chemist, or industrial chemist. This state of affairs led to much confusion in the public mind which I am sure to some extent exists even today.

Before the formation of our Institute a number of chemists in the universities and elsewhere were members of the Royal Institute of Chemistry of which there was a local Branch, but as members were widely scattered this did not satisfy the need for a body which could bring chemists together or which could speak for the profession as a whole. The need was partially filled by the activities of local chemical societies in the main centres and the stage was set for the formation of a national body.

From small beginnings the Institute has grown and flourished in a society which has become increasingly aware of the part chemistry and its application is playing in the development of industry and the country's natural resources.

"Chemistry in New Zealand": A Record Of 45 Years' Progress

Since its inception in 1935, the Institute's Journal has moved steadily forward — if, at times, somewhat hesitantly — under the guidance of a succession of Editors.

Following are reminiscences and recollections of those responsible for piloting the Journal to its present eminence.

The First Editor

The first Editor of the "Journal of the New Zealand Institute of Chemistry" as it was then called (changed to "Chemistry in New Zealand" in 1967) was **Mr O.H. (Tony) Keys,** who now lives in retirement with his wife Lillian at his home in Epsom, Auckland. When interviewed by "Chemistry in NZ" he told us he could not remember how he came to be Editor in 1935, but he did recall that his appeals for material fell on very stony soil. However his first issue, dated January 1936, was excellently produced. It contained papers by many who have now gone to other parts of the periodic table, but still around are **Dr Brian Shorland,** now at Victoria University; **Bill Williams,** ex Hellaby-Shortland; **Len Spackman,** who has been active in the Institute ever since it was formed, and still practices as a consultant with **Jim Sprott** in Auckland; **T.A. (Tommy) Thompson,** active at the beginning of the Otago Branch, now in retirement at Palmerston, Otago; and **M.L.H. Stewart,** ex Shell.

Tony Keys set out his policy in an editorial in the first issue. He hoped to give an account of the Branches, and this aim has always been achieved to some degree, depending to the reactivity of the various branch editors, though our coverage of the activities of members in the industrial area has always been rather feeble. Tony's second aim was "to make this Journal a strong point of the profession and to do our part in the Dominion of the future." There will be some doubts about this, but with regard to the new Editor's third aim, to publish papers on original research and give them priority, NZIC Editors have been so actively discouraged that we no longer consider our journal a place for material of this nature. Sooner or later this is a question which will have to be reconsidered.

The editorial goes on to talk about "obvious imperfections of this initial issue", but we found the standard high as one would expect from one who has always set high standards for himself. The printers were Ferguson and Osborne, of Lambton Quay, who only last year went out of business. The budding Editor insisted on "gil sans" type face, but only won his way after many arguments with the printing foreman.

Volume 2 records the result of a questionnaire on the Journal and its contents. 83% were in favour of having a journal, and 80% were prepared to contribute articles. The response to a question on order of preference for 8 different kinds of material, ranging from book reviews to articles of general interest, was interesting but unhelpful: 7 out of the 8 received between 10.8 and 17.6%.

In 1938, with **Norman Clare** (who became Editor in 1960) added to the Editorial Committee, publication expanded from 1 to 4 issues, but this did not stop the AGM in that year from deciding to abandon the Journal for 1939, only to revive it in 1940, a story which is told by **Prof Parton** on another page. Tony Keys has also served the NZIC well in other ways, being on the Council for 10 years, and Chairman of the now defunct Examinations Committee for a like period. At Annual Meetings he has regularly raised the issue of a charter for chemists, which still comes up now and again, but a proposal to proceed on these lines was resoundingly defeated at the AGM in 1979. 1938 found Tony Keys in another role responding on behalf of the ladies to a toast at a very successful formal dinner held by the Wellington Branch.

He considers his best work was as Government Analyst in Auckland, but earlier he made a considerable study of quackery, and can claim a good deal of the credit for the passing of the Medical Advertisements Act of 1942. In that year the then Minister of Health (now **Sir Arnold Nordmeyer**) agreed to receive a deputation from the NZIC on the subject. In this Tony was joined by **Mr Len Andrew,** representing the NZ Section of the British Institute of Chemistry, and as a result of their representations, a bill was promptly introduced and passed by Parliament. The discussion on it is recorded in Hansard (5th Session, 1941-2, pages 721-765) makes very interesting and amusing reading; one member asked the Minister if a record on a person's tombstone that his life had been extended by a certain nostrum would constitute advertising in terms of the Bill!

Tony Keys was associated with the Standards Institute for 45 years, having only recently retired from the Council. He holds the rare distinction of being one of only 4 people elected as Honarary Fellows of that Institute. He has also been very active in the Consumers' Institute, which work he feels gave him most satisfaction. The potential leader in the consumer movement in NZ was **Col. Closey** of Palmerston North, but Mr Keys claims that the legal recognition of the Consumers' Institute by a clause in the Finance Act of 1959 was at least in part due to an address given by Mr Andrew, largely based on material supplied by our first Editor. His spirit of public service is also shown by his having been a JP for 30 years; on many occasions his sleep has been broken by members of the police wanting signatures for search warrants and other documents.

Those who have been associated with Tony Keys will all have been impressed with the meticulous nature of his work for the Journal and in other fields. It is typical that in his instructions to authors he says that "vulgar fractions must be avoided".

The Journal 1937-1948

The initiative taken by the Wellington branch, and especially its committee of **L.R. Dunn, A.D. Monro** and **O.H.Keys** as editor, to establish a journal for an Institute only 5 years old, with a membership of some 150, was a bold one. Even bolder was the policy of giving priority to original research papers over other categories of analytical methods, general articles, branch and conference proceedings, council business and book

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Joiner Looks Back (Cont)

Even in the eary days of the Institute specialisation in chemistry as in other branches of science was beginning to occur and the regular monthly branch meetings helped members to communicate meaningfully with each other. Sometimes facilities were rather primitive and it was not unusual for the lantern to break down when slides were being shown containing tables with masses of figures and other data which were rather difficult for some of us to comprehend and take-in in a few moments of bright illumination on the screen. Nevertheless opportunity was provided for informal discussion over a cup of tea, often with a metallic taste, and a biscuit inadequately stored from month to month.

I am sure these comments do not apply nowadays, but I still think there is need for even more attention to be paid to communication between chemists in their various fields and the growing numbers of people who would like to know what chemists are doing and how it affects their daily lives and their work. I have come across only too few chemists who are both able or interested to tell others outside their own profession. In this sense I do not think chemists are good communicators except perhaps to their specialised scientific journals.

I believe the Institute has done a really good job over the last 50 years in increasing interest in chemistry and an awareness of its essential contribution to the wellbeing of society. This has not come about by chance, but is the result of much hard work and devotion by chemists throughout the country.

(Mr Joiner is a former Director of the Dominion Laboratory from where he was promoted to be Deputy-Secretary of DSIR. He now lives in retirement at Hataitai, Wellington.)

reviews. But after all **Willard Gibbs** had used the Transactions of the Connecticut Acadamy to publish his great work on heterogeneous equilibria —so who knows?

The transfer of responsibility to the Canterbury Branch arose from financial difficulties. The 1937 Conference heard the opinion that the scope of the journal was too ambitious; the 1938 conference advocated a bulletin published 4 times a year, though two Canterbury members — **J. Melville** and **H.N. Parton,** — proposed that the journal be abandoned. The Council in February 1938 directed that a bulletin be produced every 3 months, containing matters of interest to members ... notes of Council proceedings, research activities, correspondence and contributed articles.

The Publications Committee had established contacts overseas, including the abstracting service of the American Chemical Society, and it struggled valiantly over 1938 and 1939 to maintain its original policy and meet the Council's requirements. Its difficulties were summed up in a presidential message from **G.A. Lawrence** (December 1938), who pointed out that in view of the scattered membership, some sort of journal is desirable, as it afforded the only means of keeping country members in touch with the activities of the Institute, and considerable interest had been shown in it by overseas chemists. Requests for a regular supply of issues had been received from many foreign countries. Unfortunately the President had to add that "the activities of the Institute are severely handicapped by reason of limited finance".

So in 1939 the Council decided to restrict its contribution to £40 a year — £10 on issue (perhaps $1000 a year in our heavily devalued currency of 1980). The Canterbury delegate **(Dr M.M. Burns)** offered the services of his branch to produce a bulletin-type journal under these conditions, and even nominated an editor. He was, however, never easily satisfied. A few years later he informed the Canterbury branch that "the Institute is not obtaining its money's worth from the present form of Journal, which cost half the income!" (The editor, a meek person, agreed).

During the war years (1939-45) travel was greatly restricted within NZ. So the journal probably did fulfill the function expected of it. With remarkably efficient support from the branch editors, it appeared on time, probably its main virtue. The 16 small pages which £10 could produce were not even numbered in 1943-44 (the reason now escapes me). A decision by the Council to provide newly elected members with all the journals published in the year of election proved embarrassing, when the number printed was inadequate to meet an unpredictable need. Some early numbers became rare books.

From 1943 a disclaimer was included of responsibility by the Institute for statements and opinions appearing in it. This did not arise from the opinions expressed by the editor, surprisingly enough. It came about because of a reported statement by **Prof T.D. Leech** of the Auckland Engineering School that NZ has enough iron ore, including ironsands, to supply both it and Australia for 500 years. The Dominion Analyst, **W. Donovan,** considered this a "gross exaggeration" and suggested that a general disclaimer was necessary "to preserve the good name of the Journal". The advice was sound, and was adopted, though Prof Leech's reply (March 1943) showed that the technical argument was inconclusive. The success of NZ Steel shows that his optimism was justified, at least in general.

In March 1948 the Auckland Branch took over the task of producing an expanded Journal (30 pages), with an editor willing to "launch ourselves on the sea of words" with the direction of the voyage uncertain but an admirable willingness to believe it would be interesting. More than 30 years later, it still is.

H.N.P.

When asked to supply biographical details about himself, **Hugh Parton** replied as follows:—

'Kip Powell tells me you want a potted biography of me. While I see no reason why I should indulge you, the following will be more than adequate.

***Currently** — Emeritus Professor of Chemistry, University of Otago and member of the University Research Committee.*

***Sometime** Assoc. Prof. Canterbury Univ. College; Pro-Vice Chancellor, University of Otago; member of the University Grants Committee of New Zealand and South Pacific; President NZIC.*

Actually the first two lines only seem relevant'.

He has refused to supply a photograph; those who want to remedy this deficiency should bring their cameras to the Golden Jubilee Conference in Auckland where it is fitting that a symposium honouring him on the occasion of his 75th birthday is part of the programme, and will feature some noted overseas chemists, including **Prof McGlashan** of London, one of his pupils. Prof Parton's research field is solutions of electrolytes.

He was honoured on his retirement with the publication by the Otago University Press of a volume of his essays entitled 'Science is Human' in 1972. He has also written a history of the University of New Zealand (1979). He continues to write and study in his room in the Chemistry Dept. at the University of Canterbury.

Pre-1930 Chemistry in Christchurch

Christchurch had no counterpart to the Auckland and Otago Chemical Societies. Its branch of the NZ Section of the Institute of Chemistry of Great Britain and Ireland (subsequently the R.I.C.) hosted the annual meeting of the Section in January 1930 at which **Prof H.G. Denham** was to have given an "Historical Outline of the Formation of the Australian Chemical Institute", and his ideas of how a similar body should be set up in NZ.

The membership of the Section was reported to have increased from 30 to 40 during 1929. The collapse and death of the local chairman, **A.M. Wright,** who was supporting Denham's proposals, during the conference dinner, caused the cancellation of the lecture, and Denham's plan was considered by meetings of chemists in Auckland, Wellington, Christchurch and Dunedin, before being adopted as a basis by a meeting of representatives in November 1930.

The First Auckland Period 1948-1955

Garth Wallace

With the first issue of Vol. 12 **Stan Brooker** took over from **Hugh Parton,** and the editorial in that issue reflected on the contribution that Hugh had made to the Journal during the previous 8 years. Stan's ecclesiastical bent, thought not as obvious as in the editorials of later years, was already becoming apparent as he prognosticated on the future of the Journal. For his first year or so Stan had an editorial committee consisting of the Branch Editors, **Marion Malcolm** (Wellington), **Max McGlashan** (Canterbury) and **Jim Murray** (Otago). The Branch Editors are, and always have been, most important to the Journal, contributing the personal interest which brings it to life, but a scattered editorial committee is difficult to work, so 1950 saw a profound change in its structure by consolidation within the Auckland Branch membership. Although there is no reference to the proposed change in the published proceedings of Council, membership of the Journal Editorial Committee for the year 1950 reflected this change of policy. Editorial responsibility was now being shared, with **Alan Frieberg** as Business Manager — looking after and drumming up advertising and **George Calnan** assuming responsibility for distribution, reflected at a later date by the setting up of an addressograph system for the Institute membership instead of the laborious hand writing of the addresses for the Journal, albeit to a mailing list at the time of under 400.

Other members of that Committee were **Doug Whillans,** who had the experience of editing, printing and publishing (all at once) a journal for hospital laboratory technicians, so was able to bring valuable advice, and **Gordon Stace** who was the Auckland Branch Editor. For a little over a year **Gordon De Ath** acted as Secretary of the Committee until his tragic death, only 3 days after getting married. From then on until the transfer to the Manawatu Branch, the committee had only one change with **Harry Bloom** taking **George Calnan's** place.

The Journal was printed by the Auckland firm of **Percy Salmon, Wills and Granger,** and a very satisfactory rapport developed between the Editors and **Eric Salmon** and his staff. It was often necessary for the Associate Editor to spend an hour or so with the compositor

to ensure that chemical equations and mathematical formulae appeared in print in correct and acceptable form — sometimes difficult when you ran out of superscripts and subscripts of the right font. Occasional lapses did occur — mostly when the assembled type was not tightly packed, and got bumped — or even dropped. Reference to some of the figures shows unmistakable evidence of the hands of the Editorial staff contributing to the papers.

Obtaining suitable copy was always a problem. Papers were in some cases commissioned to obtain a balanced presentation of chemistry, but then the editors had the unenviable responsibility of recognising the chemical ability of the person commissioned and feeling an obligation to accept the paper submitted despite what turned up. There was occasional minor disagreement over the chemical balance of the papers published, especially over a series of obvious interest to 'fat' chemists by **Brian Shorland.** These problems were resolved without the need of industrial conciliators.

During this period editorial policy resulted in other significant changes. Publication increased to five issues a year, the fifth issue covering the Conference and including the abstracts of papers to be presented. Unfortunately it occasionally appeared post-conference. Publication in time for Conference has always been something of a hassle, and in some years Conference committees have understandably published their own abstracts, which are then less acessible. A sixth issue in December was devoted to a list of members, all the easier since the Editorial Committee held the addressograph plates. Abstracted reports of Council meetings were now included for a better informed membership.

A more positive seeking of advertisements became necessary to defray the ever-increasing costs of publication, despite substantial increases in membership subscriptions. Stan introduced a very effective Journal interchange system with overseas Institutes and related bodies, resulting in the accumulation of quite important holdings of overseas chemical journals, not elsewhere held in NZ. These exchanges have continued; the bulk of them are held in the library at Massey University.

Several sets of complete runs of the NZIC Journal were bound, and on his retirement as Editor, Stan Brooker was presented with one of these sets by Council, together with their sincere appreciation of a job well done. For the last year of its stay in Auckland, the Editor of the Journal was **Garth Wallace,** who held the fort until the transfer of Editorship to **Bill McGillivray** and the Manawatu Branch. In a commentary on the transfer, Garth recorded his appreciation of the assistance he and Stan had received from the editorial committee, the co-operation of authors, the help of the Branch Editors, who came to light regularly with their local scandal and recommendations for articles, and to the printers, particularly Eric Salmon, who had consistently taken a personal interest in the Journal. (Eric has continued that tradition of public service with a notable record on the Auckland City Council and other public bodies.)

In its 19th Annual Report (1949), Council speaking of the Journal, said: 'The official organ of an Institute such as ours must maintain a programme and actual policy. It influences in a large way the vigour of our Institute activities ...' This was the objective of the Auckland Editors; whether they succeeded was for others to judge.

Dr Garth Wallace retired last year after 24 years as a Senior Lecturer/Reader in Dairy Chemistry/Food Technology at Massey University. Garth graduated B.Sc. from Victoria University in 1940 in Chemistry and Zoology and subsequently did a postgraduate year at Massey in 1949 and completed his Doctorate while on the staff at Massey. He has worked in the dairy, food and rubber industries and was an analyst/microbiologist in the food and water sections of the Government Analyst's laboratory of DSIR in Auckand for 6 years prior to his appointment to Massey College's Department of Agricultural Biochemistry.

He is currently Programme Administrator for the Dairy Industry Graduate Training Programme, based at the NZ Dairy Research Institute. His part time job involves recruiting graduates in technology, science and engineering for the dairy industry and in arranging their post graduate training in the specialised areas of dairy science and technology.

He was Associate Editor of the journal 1948-53 and Editor in 1954.

The McGillivray Years 1955-1959

When, in 1954 the Auckland Branch decided the time had come to relinquish responsibility for producing the Journal, Council, following its policy of distributing such tasks around the Branches, invited the Manawatu Branch to take over. This youngest and smallest of the Institute Branches had as yet no other Committee responsibility, beyond organising the 1955 Conference, and apparently took up the challenge with considerable enthusiasm. When I returned later in the year from study leave in England, I found not only the invitation accepted and an interim Journal Committee already established, but a general assumption around the Branch that I would act as Editor.

Certainly I had always supported the idea of a strong Journal as the mouthpiece of a growing professional body, and had expressed views on what role the Journal should fulfil, but the acceptance of the actual responsibility of putting these into practice and of producing the Journal was another matter altogether. This especially when the back-up resources available to scientists in the way of secretarial and related services necessary for such work were much less adequate than is generally the case today. However, with assurances of assistance from active members of the Branch, which at that time consisted of a very close-knit community, and the support of my wife who in the finish provided most of the secretarial work and shared much of the burden of the reading and correcting proofs, I agreed to give it a go.

Dr W.A. (Bill) McGillivray, CBE, DSc (Massey) has had a distinguished career, culminating in a period of 15 years as Director of the NZ Dairy Research Institute and two years as the NZ Dairy Board's Resident Scientific Director in Japan. While in Palmerston North he served on the City Council and the Council of Massey University and was President of the NZIC in 1971.

In retirement he now combines consulting work with developing a kiwi fruit orchard with his son (also a chemist).

Editing the Journal from 1955 to 1959, when the editorship passed to another of the younger Branches, Waikato, proved to be a rewarding and valuable experience — rewarding in the contacts it established with a wide cross-section of NZ chemists, and valuable in giving the experience and confidence to tackle the many other publication and editorial activities that came my way as Director of the NZ Dairy Research Institute including the setting up of a new International journal of dairy science and technology.

In 1955 the Journal was a relatively modest affair — some 30 small pages of copy per issue supported by a few loyal advertisers who must have regarded the £7/page fee more as a donation to Institute of Chemistry funds than as a worthwhile way of promoting their products. In this connection the primarily agriculturally orientated Journal Committee in Palmerston North was greatly assisted by the work of **D.G. Howard,** a Wellingtonbased industrial chemist, as Business Manager.

The Journal was also, and to an extent still is, a publication in search of an identity —somewhere between a house magazine and a serious scientific periodical, the former dealing with material of limited and transient interest and the latter with reviews and original research findings justifying some greater degree of permanence. This of course is a problem common to the publications of all but the largest of scientific societies. My own view tended strongly to the latter functions as objectives of the Institute Journal, but like my predecessors and successors, I found it difficult to persuade authors to help build the reputation of the Journal by entrusting it with even the smallest of their precious research findings or to get appropriate chemists to write review articles aimed at assisting others to keep up with developments in other branches of chemistry.

The Journal's Progress (Cont)

The Journal continued to rely heavily on edited versions of papers presented at Branch Meetings and even prising these out of reluctant speakers or Branch Committees took some doing as is evidenced by repeated pleas in the Journal or through Council Minutes. Nevertheless some good material did, and has continued, to flow across the Editorial desk. Looking back over 25 years much of this still makes interesting reading today. Certainly the photographs which accompanied material published at that time feature one's colleagues as suprisingly young-looking people! However, it was possible to encourage contributions to features such as the Equipment Page where brief articles describing how some chemists had overcome equipment problems or modified apparatus to meet unusual demands, proved popular at a time when more specialized equipment was not so readily available.

The mechanics of setting and printing the Journal, to my knowledge the first scientific publication to be set and printed in Palmerston North, also posed quite considerable problems, although the firm we employed, Stylex Print Ltd., has since established an excellent reputation in this field. We had to become familiar with the jargon of the printing trade and to learn with the type-setter and printer how to juggle the then somewhat limited range of type faces and to "cut-in" a fair amount of hand set type to give passable representations of chemical symbols and formulae. Most authors were reasonably tolerant of our efforts but some took exception to slightly thicker lines in some ring structures for example and could not understand why printers did not have fonts for their favourite symbols on hand.

At that time the Journal was also responsible for other Institute publications such as Lists of Members and the Canterbury Branch "Chemistry in Action". In addition, early in my term as Editor, the Institute celebrated its 25th jubilee. The suggestion that we publish a special jubilee edition met with mixed response, many feeling that 25 years was too short a period relative to the much greater age of other groups like the Royal Institute of Chemistry, for any scientific body to make a fuss about.

Actually even the most lavish celebrations that anyone proposed were modest by some standards as I was to learn some years later when I had the honour of representing our Institute at the 25th anniversary celebrations of a sister Society in East Asia!

It was eventually agreed that one issue of the Journal be designated a Jubilee Number and the Editor was authorised to spend up to £50 additional on this production and to include 16 extra pages. It was stipulated that priority be given to historical material including the organisation and activities of the Institute and lists of past office bearers.

While recognising the value of recording something of the base on which we built, I have always preferred to regard any anniversary as a time to take stock of our present position and to look forward to where we should be going. While fulfilling Council wishes, it also proved possible to stretch available space to include material of this type. The extent to which authors pinpointed current problems and outlined desirable courses not only for the Institute and chemistry in NZ, but for the country as a whole again makes interesting reading today. Indeed the wisdom of the emphasis they placed on agriculture and horticulture as representing our true wealth and prosperity, and their stressing of the need to channel our scientific resources in these directions and not dissipate them in uneconomic activities or into areas that have no relevance to the NZ scene, is only now starting to receive the recognition it deserves.

And so now 25 years later the Institute celebrates its Golden Jubilee — a stage surely of some real significance in the development of any organisation. May I join with others in wishing the Institute continued growth and success in the future.

The Journal 1960-1964

N.T. Clare

My period as Editor ran from Volume 24, No. 3 (1960) to Volume 28 No. 5 (1964). However my first association with the Journal was as a very junior member of the Committee in 1938-39, the third year of issue. My only activity, as far as I can recall, was proof reading. In that year the Journal was expanded from one issue to four in order to circulate news around the Branches more rapidly, the initial idea of publishing original research papers was largely abandoned, and the scope limited to review articles and the news from the Branches. In fact there was considerable delay in producing some of the issues, so that the fourth number of Vol. 3 was not distributed until early in 1940. As regularity was considered the essence of an organ to unite the Branches, from 1940 the Journal was taken over on a less ambitious scale by the Canterbury Branch with **Hugh Parton** as Editor.

My next contact with the Journal was the preparation, with a committee from the Waikato Branch, of an Index to the first 20 volumes, in 1957.

By 1960 Illustrious Predecessors **Brooker** and **McGillivray** had established a satisfactory format and content for the Journal, to which my succession brought no profound changes. The policy enunciated in the first editorial was to continue the Journal as a record of Institute affairs and of "indigenous chemistry" — work carried out in NZ or relevant to local problems. In short, "to tell Institute members what their fellow members were doing, why they are doing it, and how they are doing it." That is roughly how it worked out over the five years. Of 33 indexed papers and notes of a review nature over 80% dealt primarily with "indigenous chemistry".

In the field of Institute history **G.M. Moir** contributed a note on early Conferences, from the first meeting of the NZ Section of the Royal Institute of Chemistry in 1926 — long before it was dignified by the regal adjective — to the period of Combined Conferences from 1936 to 1960, when the NZIC took over full responsibility for the Conference. In 1963 the winding-up of the NZ Section of the RIC, after 37 years of activity, is recorded. **R.L. Andrew** wrote in 1961 on his first predecessor, **Skey,** who is an autoepitaph described himself as "... one who'll ne'er be missed, New Zealand's primal analyst". There were hopes of Andrew writing a biography of Skey, pioneer of the cyanide gold extraction process and author of a lengthy ode on the electrification of Wellington; but in 1962 the Journal published R.L. Andrew's own obituary. Among other Institute stalwarts whose deaths were recorded over these years were **Worley, Rosa Stern, Seelye** and **Denz.**

Branch Notes remained a feature of the Journal, their scope and immediacy reflecting the activity and alertness of the individual Branch Editors.

In 1961 Council agreed to republish a sixth (December) issue to carry the List of Members, previously printed separately, as well as the list of officers, biographies, and other business material.

The production of the Journal, including the organisation of advertising, was carried out by Editorial Services in Wellington. **John Wilson** and **Margaret Brown** were meticulous and experienced in the editorial field but were unable to overcome difficulties on the printing side even when John set articles himself in an attempt to speed publication. The greatest panic arose when it appeared likely that an August number containing Conference programme and summaries would not reach some members before they started their journey to Conference. Fortunately it was possible to send extra copies direct to the Conference Committee for those arriving without a copy.

One Institute service in education during the sixties was the Chemistry in Action series of addresses to sixth formers initiated by the Canterbury Branch. These were published in the Journal and reprints made available for distribution to schools.

An indication of the circulation of the Journal was the receipt of papers from hopeful authors in India, Taiwan and Poland. All were returned with an explanation of Journal policy.

An editor's **bete noire** is the misprint, particularly the one that makes not nonsense but an incongruous different sense. The one I remember from my time (I am sure it was correct in galley proof, but a line must have been dropped and reset during paging) made **John Pollard** conclude an article on space heating with a plea for the establishment of "a Ministry of Fuel and Powder". Hugh Parton wrote to enquire whether this was Face — or Gun —, and must it be kept dry. There was a chuckle also behind the note from Margaret Brown of Editorial Services mentioning that she had corrected one

spelling error of mine in an editorial chiding authors for their bad spelling. There were errors in authors' typescripts which did not escape the Editor, much as he would like to have turned a blind eye. A paper which was not actually published quoted a pathology report reading "One ewe was killed as it was going down hill fast ... when the abscess was opened a little yellow puss ran out." Another stated in a caps heading "The Pregnant Hormones". As that was early days for The Pill perhaps she had reason to complain. Presumably the name of the dame was ... nancy.

Some Experiences Of An Honorary Editor

Joan Mattingley

Sometime during **Stan Brooker's** term of office as President, he asked me to take on the job of editing the Journal. **Norm Clare** had been Editor since the printing had been taken over by a firm in Wellington. Each Council meeting Norm sadly reported that the material he had edited and prepared for its due deadline was tampered with — the Journal was again late, he never saw proofs, phone calls from Hamilton were ineffective, promises for action never kept. Lateness was not just in terms of days or weeks, but even of months. In desperation he recommended that a Wellington member be Editor, hoping that someone closer at hand might be able to jolly things along a little more effectively.

I duly introduced myself to the printing firm as the new Editor. My reception was decidedly cool and off-hand. I ignored this, because any female of the time was quite used to the brush-off or the put-down when she did anything outside of the narrow tramtrack expectations of our society. Later, however, having experienced the same problems as Norm in trying to wring the issues out of that firm, and talking with other honorary editors around, I found the reason. The owner of the printing firm believed that he was the editor, responsible to no-one but himself. I also found he had quite a printing monopoly of a number of firms sheltering under different names. This fact I had to bear in mind when I recommended a change of printer.

What was clarified at that time was that Council appointed its Editor, that it had to be a member of the NZIC, responsible to Council who decided broad lines of policy. Such responsibility could be discharged only by the Editor being in control of what was printed and when. The current situation made this impossible, so on my recommendation we moved the Journal to a small jobbing printer with whom we could happily discuss typefaces, lay-outs, changes of print when it looked a good idea — in other words someone who would do his side of the production co-operatively.

During subsequent years we went to a larger size page to improve appearances (to compare with other countries 'Chemistry in ...'), then to A4 with metrication. The Advertising Managers were a series of members occupying a particular position in the Shell Co of NZ Ltd. Advertising improved and the number of exchanges of our Journal for others from overseas rose. When inflation increased, so did paper and associated costs; postage costs soared. The workload for someone in an honorary capacity became impossible. Assistance was requested. None was given. The diversity of opinions as to what the Journal was for became impossible to reconcile.

With some 1200 members to cater for, all in very different fields of chemistry, and 1200 different beliefs as to what members wanted from the Journal, the Editor had to perform a job of reconciliation. My prime function as I saw it was to let NZ chemists know what their colleagues were doing in other laboratories and institutions in the country. The prescription for the Journal was therefore simple. It had to: look professionally elegant yet not cost much; have specialised articles yet cater for generalists; come out at two-monthly intervals yet be up-to-date; meet the printer's deadlines yet wait for tardy authors; cover costs with advertising yet not look filled with advertising; have advertising, specialist articles, three technical articles, council minutes and directives, lists of new members, overseas information etc, yet not exceed 30 pages; be received by each and every member on time (with 1200 definitions of what 'on time' meant) while each postman was able to deliver second class mail as it suited him; be edited, proofed, paged, in one's spare time while dealing with the printer in his working hours.

Writing styles could form a study in themselves. I have long believed that nowadays everybody is deluged with too much to read and no time to read it. Long gone is the elegant style of living of the 18th century gentlemen who had the time and patience to delight in the intellectual exercise of unravelling intricate alexandrine sentences. I have always admired Bacon, terse and to the point. His style is needed in science. But I have found some authors of chemical articles who seemed fearful of committing themselves. They hid their meaning with hedgings and contortions, perhaps because they were afraid their peers might disagree. Others wrote well with a conciseness and clarity that was a joy to publish. A few were abusive when even a comma of their creation was touched. Others wrote grateful letters for the results of editing. Noticeably these latter came from members at the top of the profession.

The most challenging editing was required when a paper needed to be converted from everyday speech to an acceptable form for publication. Such a paper was usually one prepared by a guest speaker to be delivered at a meeting. The informal expressions used in speaking were too carefree for the permanent printed form. The challenge was to convert such a paper to acceptable written expression without diminishing or destroying the personality of the speaker in the process.

Editing the Journal cost me much time and money. It never occurred to me to offset the cost of the petrol I used running to the post office box and the printer against the tax on my small honorarium. I made many friends which has by far offset any costs. All my spare time went as a frantic lolly scramble to keep one step ahead of continually occurring deadlines. Would I do it again? Yes. There is a tremendous creative aspect — the reward of seeing a finished article which cannot be altered — to see its flaws, which were always numerous, and vow to do better next time. There never was an issue with which I was satisfied. I wonder if there ever could be for any editor.

A Dual Responsibility: Lawrie Creamer's Story

Stan Brooker's request for an article caused a flood of memories from the recent but almost forgotten past. From this vantage point in Madison, Wisconsin, the middle of America in every sense, my time as Editor seems very much a part of another world, another place; a phase of my life that was all too absorbing and certainly too time-consuming.

The NZIC Bulletin

The 1970s saw substantial inflation in NZ and the Institute was caught in an income/expenditure squeeze. 'Chemistry in New Zealand' was especially hard hit and the number of issues was reduced, causing concern in another area — news, including Branch notes, was not always new by the time it reached the readers. In mid-1975 I was approached by **Andrew Brodie** with the proposition that the NZIC should bring out some type of news-sheet, and would I be prepared to edit it? Apparently what was needed was a kind of newspaper which would carry notices, small advertisements, Branch and Council notes, and any other small items of interest. I guess I must be a soft touch; anyway I agreed to try to put something together for the Institute. Thus I entered the world of 'ems', '10 on 12', 'hot metal' versus 'cold type', 'quad left', '160 gram Kinleith offset', 'Galaxy', 'Times Roman' and all the other mysteries of the printer's trade.

The conflicting aims of low cost of printing and distribution, reasonable quality and appearance, and rapid distribution were not satisfactorily resolved. In hindsight the Bulletin should have been direct-mailed to members, despite the much higher cost and greater complexity of such an operation. The Bulletin was produced about every 6 weeks over 9 months of the years 1976-8.

As all editors know and few authors or readers appreciate, the name of the game is space budgeting; filling it all in with no oddly shaped pages, strangely worded sentences and so on. I can recall a phone call from the printer that went like this:

"It won't fit in the page." Pause

"Are you there?" "Yes, I was thinking that you would have to take out the piece on the Mass Spectrometry Conference, and use it next time."

"The what?"

"The piece about 2 inches long in the

top right of the third page." "O.K."

More often it was a matter of deleting a line or two or rewriting a sentence, which the printer rushed to the typesetter, and then substituted in the text. I was fortunate in always having enough material to hand, and never had to write fillers. For this I was indebted to all those who sent unsolicited pieces, to Council members who kept me supplied with notices, and Conference organisers who kept me up-to-date with their activities.

'Chemistry in New Zealand'

Towards the end of 1976, Joan Mattingley resigned as Editor after having done a tremendous job over 12 years. The next few months saw much discussion on whether the NZIC needed a Journal, and if so, how often it should be published, and how much could be spent on it. In the end the Publications Committee under **Rod Furkert** asked me to edit 'Chemistry in NZ'. Somewhat diffidently, and with the acquiescence of my employer, I agreed to do it until a new editor could be found. Part of the agreement was that I should have a free hand but wouldn't exceed a pre-determined budget.

After the December, 1976, issue had been produced by the Publications Committee from material already typeset, my term as Editor of 'Chemistry in NZ' started. I inherited a number of books that were to be sent out for review, a handful of manuscripts and a few copies of previous issues. My ideals were high, and I hoped to make some changes that would reduce the net cost to the Institute, and at the same time make the Journal so interesting that all members would open their copies eagerly.

I decided to have 3 issues a year, to retain the Bulletin for news material, to change from letterpress to offset printing, and to double the advertising rates. Making some reasonable estimates and with some printing quotations, a budget was submitted to the Publications Committee and accepted by Council. Then the problem of actually producing a journal had to be overcome; the proposed Journal would average 40 pages — 8 of advertising and the contents page, leaving 32 pages, or 8 articles of 4 pages each, which is a lot of material to find. A stream of articles of general interest had to be created. However on a more optimistic note, most NZIC members I knew were involved in jobs or other activities that could be written up to provide interesting reading. With over 1000 active members, I felt I should be able to locate 24 topical articles each year.

It turned out that this was more difficult that I expected; New Zealanders seem to be naturally reticent about their work, and offers of papers were not often received unless the writer had been prompted by a colleague. It turned out that I was never short of material once I started asking unabashed anyone whom I thought would be able to write an interesting article. About a third of those asked actually produced manuscripts. Branch Editors and Conferences provided focal points for several articles. This was only the start, the job of converting this material, plus advertisements and other articles into an acceptable journal is a story in itself.

Some papers have imbedded themselves indelibly in my memory — and added quite a few white hairs. Without going into details the main problem was the conflict of commercial interest versus speed and accuracy; it is far easier to print off half a million place mats for a Chinese restaurant than puzzle Greek subscripts in a formula. The printer offered us lower rates than his competitors, but lost money on most issues, largely because more time was involved in typesetting than had been allowed. The commerical aspect showed up in several ways, e.g. material wouldn't always be sent for typesetting until the beginning of the month, as an aid in book-keeping. Strikes, disputes, and technical problems associated with printers and typesetters moving to computerised systems, also took their toll in delays in publication.

Most of these individual problems seemed to conspire together in the C-13 NMR article in the issue of July, 1978. The original typescript had to be set twice with only mediocre results; there were problems getting diagrams set properly, and finally it was all held up with some printing difficulty. The paper was too long to drop from that particular issue at the stage when time was running out. The net result was that an embarrassed Editor had to tell Council that there had been a few problems, and he didn't know when the Journal would be coming out.

It is this side of editing that makes it such a frustrating job. On the positive side there is a feeling that most NZIC members, especially the officers, are prepared to be very helpful, and the job would have been impossible without the help that I received from them, particularly **Denis Hogan.**

Termination

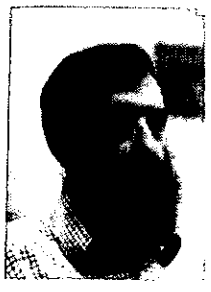
I was very relieved when the Auckland Branch, in the ecclesiastical shape of **Stan Brooker,** agreed to take over the Journal and enlarge it to 6 issues a year. This meant that I could hope to go back to a more normal life as a protein research chemist and leave the problems to Stan and his colleagues.

To conclude the story of the Journal, in 1978 Council entered into an agreement with Tricom Publications Ltd, Auckland, to publish 'Chemistry in NZ' at 2-monthly intervals from the beginning of the following year. The Auckland Editorial Committee was able to give away Lawrie's problems to ***Peter Reaves*** *of Tricom, and cope with a new set of problems inevitable with new arrangements. However these are gradually being overcome, and Council felt justified in continuing the arrangement with Tricom until the end of 1982, albeit at a much greater cost to the Institute, largely because Mr Reaves' hopes for advertising revenue had not yet been fulfilled.*

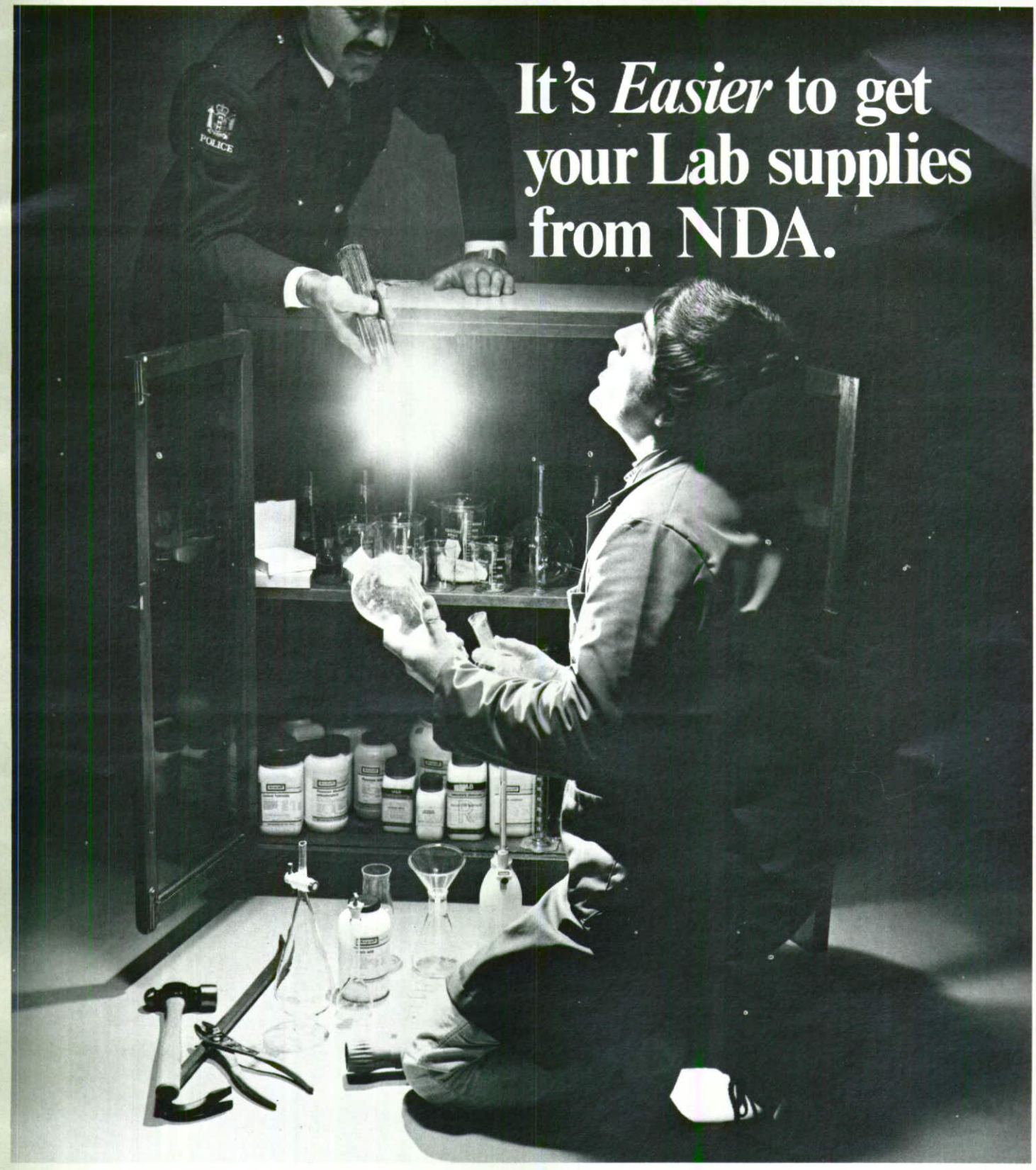
The story of the Journal is one of progress, even if it has been somewhat uneven, and this progress has been due to much hard work and thought put into it by the various editors whose stories we have published in this issue. It has had its frustrations for me too, but on the credit side I have made some good friends with people that have helped me tremendously in the job, (particularly ***Tony Herd****, my Associate Editor) and been encouraged by kind words and letters from readers, both here and abroad.*

It was the hope of our first Editor, ***Tony Keys****, that the material in the Journal would include original papers, an ambition which I shared when Editor in 1948. While this has not been favoured by Council or authors we have had in some years abstracts of Conference papers, giving a good indication of current research in chemistry and biochemistry in this country. However, there has been no firm policy with regard to this, it being left to each Conference committee to decide for itself. (Not having to publish the abstracts was also less strain on the Editor!) When, with the best of intentions, a particular committee has decided to publish the abstracts on its own account, this valuable record tends to be lost. With firmer arrangements about publication of the Journal, publication of abstracts in it as a matter of policy could well be considered.*

S.G.B.



Dr L.K. Creamer was born in Christchurch, and attended Boys' High and University there. He joined the NZ Dairy Research Institute and travelled to Boston to work in the Biophysics Group of the Biology Dept. at MIT, being thus transformed from a physical-organic chemist to a protein chemist. He now heads the protein section at DRI and is involved in a wide range of protein-oriented problems such as the heat stability of milk, protein — SDS interactions, proteolysis and structure of cheese, and casein-calcium phosphate interactions. He is currently on study leave in the Food Science Dept. at the University of Wisconsin, Madison, and will return to DRI later this year.



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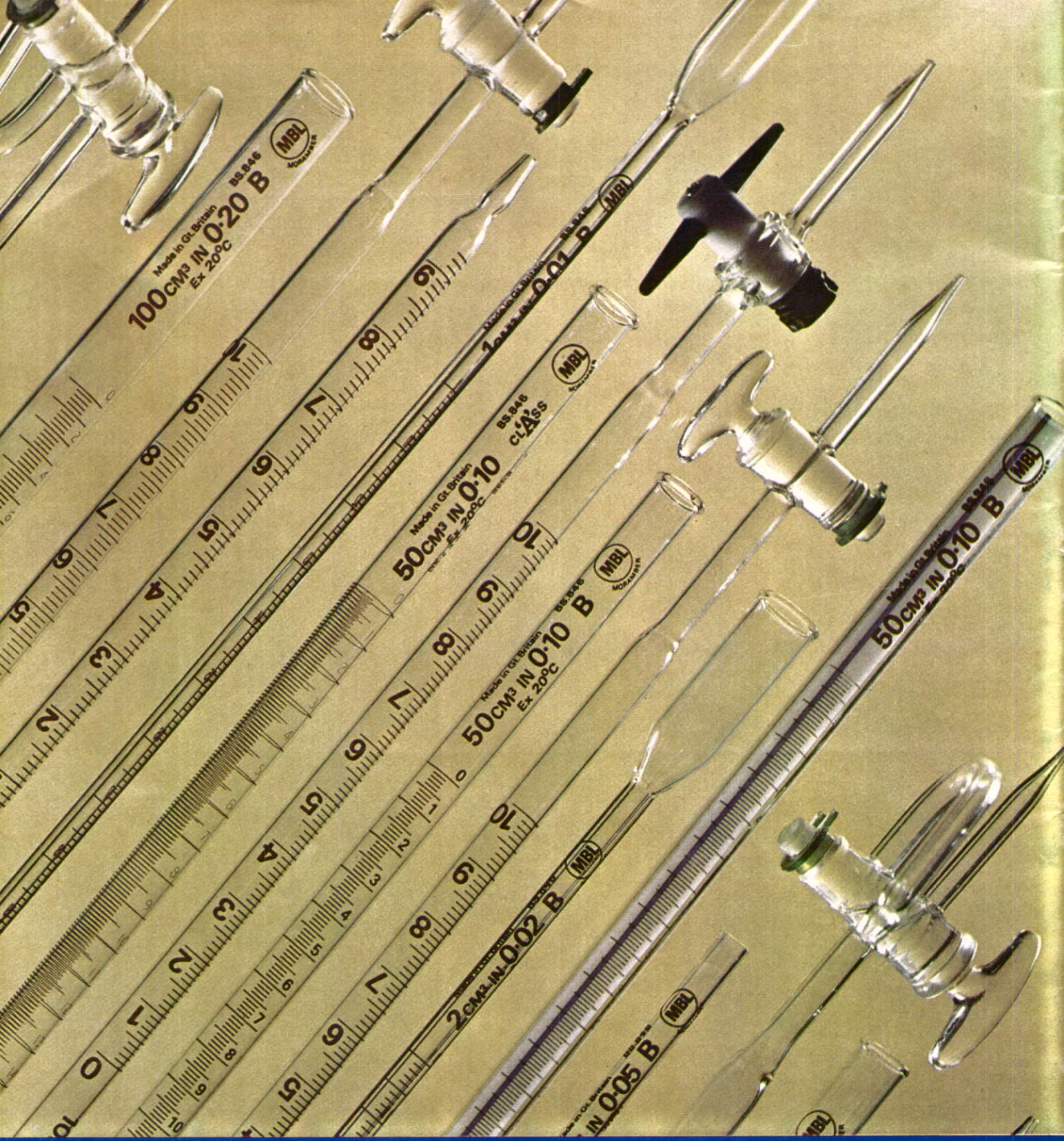

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