Future Mission, Goals and Function of IUPAC

The following article by President Joshua Jortner was published as a Guest Editorial in 'Nachrichten aus Chemie', February 1998, the news magazine of the Gesellschaft Deutscher Chemiker.

The International Union of Pure and Applied Chemistry (IUPAC) serves as a Scientific, international, non-governmental and objective body in addressing the global issues involving the chemical sciences. The future mission and function of IUPAC should rest on the principles of the globalization of the scientific-technological endeavour, the response to current changes in science and technology, the fast expansion of the boundaries of modern chemistry and the mission oriented service of chemistry.

IUPAC was formed in 1919 by chemists from industry and academia. Over nearly eight decades the Union has succeeded in fostering world-wide communications in the chemical sciences and in uniting academic and industrial chemistry in a common language. IUPAC has long been recognized as the world authority on nomenclature, atomic weights and many other critically evaluated data, and it continues to sponsor major international meetings that range from specialized symposia to CHEMRAWN meetings with societal impact. During the Cold War, IUPAC became an important instrument for promoting world-wide collaboration and communication among chemists.

One of the hallmarks of our era is rapid political, economic, technological and scientific change. With the major changes that have occurred world-wide in chemistry and the chemical industry, IUPAC has examined its role as the organization principally responsible for promotion of the chemical sciences globally. Following a series of meetings to obtain input from leaders in chemistry on four continents, IUPAC has redefined its mission and established goals and strategies to guide its approach to the shaping of the chemical sciences in a rapidly changing world.

IUPAC's Mission is to advance the world-wide aspects of the chemical sciences and to contribute to the application of chemistry to the service of Mankind. In so doing, IUPAC promotes the norms, values, standards and ethics of science.

To further its Mission, IUPAC is currently establishing a set of long-range goals and developing strategic thrusts to provide guidance for the kinds of scientific work the Union undertakes. In addition to initiating and continuing major thrusts on the activities listed above,

Professor Dr. Joshua Jortner

IUPAC will represent, when appropriate, the interests of chemistry in international governmental and non-governmental forums. Goals have also been established for the Union's contributions to the advancement of world-wide research in the chemical sciences, the promotion of the service of chemistry to society (with attention to the advancement of the chemical sciences in developing countries), and the facilitation of the development of effective channels of communication in the global chemistry community. The Union feels it is important to promote the chemical aspects of industry in its contributions to sustainable development, wealth creation and improvement in the quality of life.

The improvement of chemical education is another IUPAC goal. The Union recognizes that the needs of the developed countries and the developing countries in this regard are quite different. Scientific literacy is the major concern in the developed world. IUPAC's rôle is to act as a clearinghouse for information about national programs. Less developed countries need help and support at all levels of education and training.

IUPAC strives towards globalization of its activities with the participation of the entire world's chemistry community. The broadening of the geographical base will be accomplished by recruiting new National Adhering Organizations. In addition, new mechanisms need to be set up to insure world-wide dissemination of information about IUPAC's work and the drawing of human capital to its activities. The Internet is seen as an opportunity to greatly improve the Union's efforts in both these areas.

To carry out its scientific work (largely in nomenclature, terminology, critical data evaluation and organiza-

tion of scientific symposia), IUPAC has, over many years, developed a network of 37 Commissions. Although an enormous amount of valuable work has been produced, this relatively static structure has now become an impediment to undertaking projects that are widely regarded as relevant to today's world and are completed in a time-frame consistent with the fast pace of modern research and industrial development. We will soon propose to IUPAC's governing bodies major changes that will consolidate the responsibility for initiation and management of scientific projects, each of which will be conducted by a time-limited working party. We plan to reach out to a broad international community of chemists to help define the needs on which IUPAC projects are based and to recruit the most talented chemists world-wide to work on these projects.

Chemistry historically emerged and developed as an interdisciplinary scientific field, with a broad definition of its borders. Paraphrasing Linus Pauling's definition of the chemical bond 'whatever is convenient to the chemist to define as a bond', chemistry can be defined as a discipline encompassing all areas which are of interest for chemists and where molecular science makes significant contributions. The rich and diverse world of modern chemistry encompasses remarkable intellectual accomplishments, scientific creativity and originality and the generation of new knowledge. The quality, relevance and remarkable scope of modern chemistry should preclude any 'identity crises in chemistry', sometimes manifested in the chemistry science and education community regarding the future of the chemical sciences as a central scientific discipline.

I have discussed changes to the way in which IUPAC operates to fulfil the Union's goals and future mission. The problems with which science and society are faced today are complex and require a reassessment of scientific policy considerations, and an implementation of evolutionary changes in the function and structure of the Union. IUPAC serves the international scientific endeavour in the dual function of a basic science and a mission-oriented Union. The Union is in a unique position to contribute to the central interdisciplinary chemical sciences. Strengthening international chemistry, striving towards inspiring high standards of excellence and relevance in academic and industrial research and promoting the service of chemistry to society and to global issues, these are the visions that shape IUPAC's activities towards the 21st century.

Professor Dr. Joshua Jortner
President of IUPAC

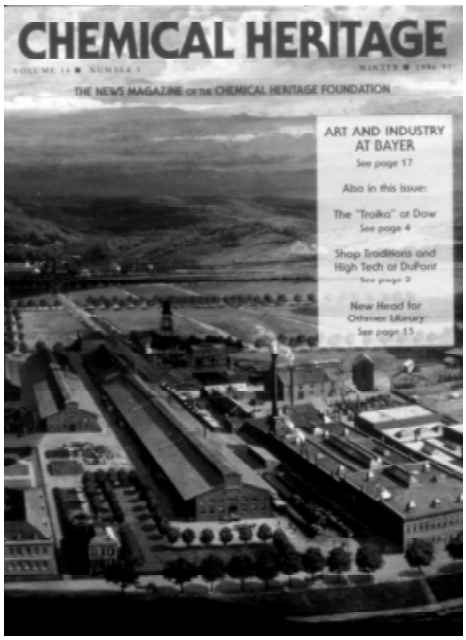
The Chemical Heritage Foundation

A growing resource for the chemical community

The Chemical Heritage Foundation, based in Philadelphia, is rapidly emerging as the chemical community's premier resource for preserving and recording our remarkable heritage, for historical research and scholarship, and for public education.

IUPAC and CHF

The relationship between CHF and IUPAC goes back to 1984, when CHF first received in its archives a number of historical reprints dealing with the International Commission on Atomic Weights of IUPAC. Subsequent years saw further archival deposits, and the establishment of CHF as one of IUPAC's Associated Organizations. In 1996, the Union decided to transfer all of its archival materials to CHF, to prevent further dispersion of historically significant material. In the summer of that year, the Union transferred to CHF 185 boxes of documents dating from 1919 through 1970. The earliest archive box (1919–25) includes such treasures as letters



A recent cover of *Chemical Heritage*, CHF's news magazine. The image on the cover is a painting of the Bayer factory in Albany by Otto Bolhagen of Bremen. *Image courtesy: Bayer AG.*

The exterior of the Chemical Heritage Foundation's permanent home, Spring 1997. *Photograph by Gregory Tobias.*

from Leo Baekeland, Marston Bogert, Arthur D. Little, Fred Rossini, Charles L. Parsons, W. Albert Noyes, and other key figures in the international chemical community. Among general groupings of papers contained in this major donation are those of the Commissions on Organic and Inorganic Nomenclature. The total collection contains a rich compendium of correspondence, notes, conference material, commission proceedings, country files, and IUPAC Bureau documents, accounts, and budgets.

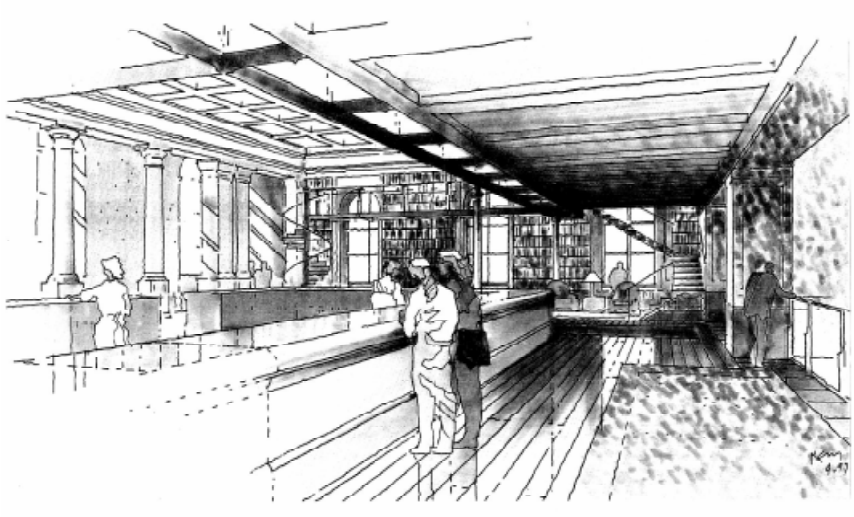
A Brief History of CHF

A detailed article on CHF's origins, mission and goals was printed in *Chemistry International* 1995, **17**, 5. CHF began modestly in 1982, as the Center for the History of Chemistry (CHOC), a pilot project between the University of Pennsylvania and the American Chemical Society (ACS). CHOC's goal was to address the urgent need to document, preserve, and make known the heritage of chemical achievement. In 1984, the American Institute of Chemical Engineers (AICHE) became the third sponsor of the Center.

In 1987, the Center was incorporated as a not-for-profit under the title, the National Foundation for the History of Chemistry, by joint action of ACS and AICHE. The Foundation rented space in a new building at the University of Pennsylvania, and restructured its activities into those of its Beckman Center for the History of Chemistry (established 1987), and its Othmer Library of Chemical History (established 1988).

In 1992, the Chemical Heritage Foundation assumed its present name to better reflect the interdisciplinary nature of the chemical sciences and industries, and the widening public scope of its activities. In 1995, CHF purchased, and in 1996, CHF moved to its permanent home, the First National Bank building at Independence National Historical Park in Philadelphia. Today, CHF enjoys the endorsement and support of 19 professional societies and associations.

An Othmer Library staff member unpacking some of the library's books and journals. Shelving and cataloguing are under way at the library's permanent site in Philadelphia. *Photograph by Gregory Tobias.*



Artist's sketch of a proposed reading room in the Othmer Library. ***Image courtesy: Richard Conway Meyer, Architect.***

Programmes and services

The Othmer Library of Chemical History

CHF fulfils its mission—to foster the heritage of the chemical sciences and industries—in part through the operations of its Donald F. and Mildred Topp Othmer Library of Chemical History. The Othmer Library is a product of the vision and generosity of Donald F. and Mildred Topp Othmer, and underpins all the program activities of CHF. The library is rapidly becoming the premier repository, media resource centre, and research facility for the history of the chemical sciences and industries. The library promotes access to materials on the origins, development, and current directions of the chemical sciences and technologies. Its activities include:

- maintaining a comprehensive reference collection;
- developing special book, manuscript, artefact, and oral history collections;
- collecting papers of chemical scientists and organizations;
- providing database entry to other historical collections; and
- maintaining a pictorial collection, which includes prints, negatives, slides and audio visual items.

The core of the library consists of over 40 000 volumes donated by The Chemists' Club of New York. Valuable additions to the library are being sought and received every day. The library has already grown to over 50 000 books and journals ranging in publication date from 1526 to 1970. An eventual stack capacity of 250 000 volumes is expected.

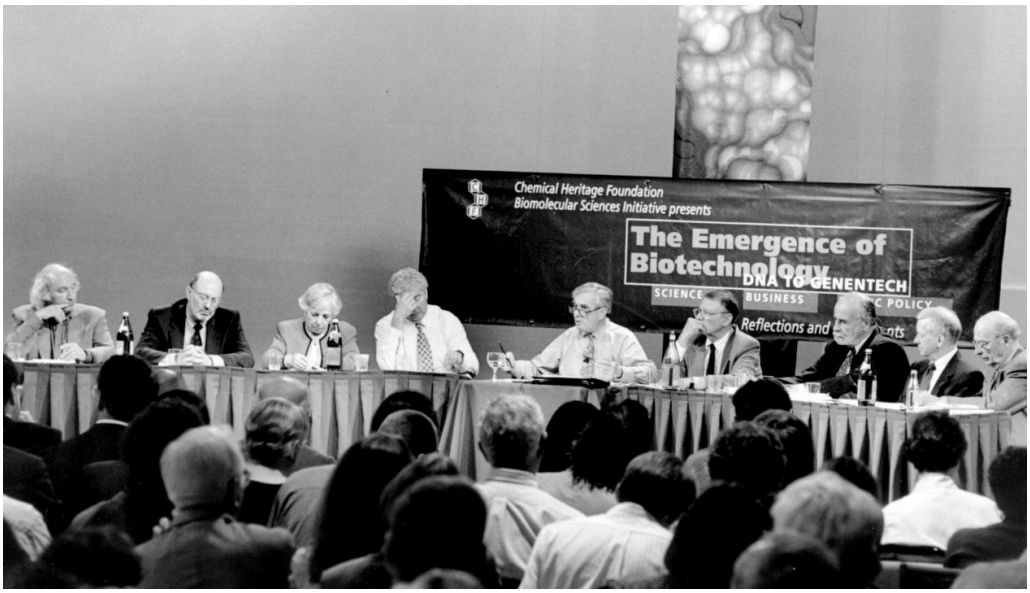
In 1996, Elizabeth Swan became Directory of Library Services, and set about the daunting task of re-organizing the library in CHF's permanent home. Staff positions were advertised for and filled, and now number four full time and five part-time employees. An acquisitions policy has been drafted to help potential donors identify the materials CHF is looking for. The process of creating an electronic catalogue using the Online Computer Library Center (OCLC) bibliographic system has begun. The objective is to create an online catalogue which will be searchable via internet electronic access. Development of full stack capacity, improved infrastructure, and climate control for rare books and manuscripts are other major goals for the library.

The Staff of *Chemistry International* apologize for the lateness of this issue. It was a result of unforeseen complications of the relocation of the office to Research Triangle Park, North Carolina, USA. We expect to return to a normal printing schedule for the May issue.

The Beckman Center

Made possible by a grant from Arnold O. and Mabel Beckman, the Centre's mission is to undertake basic research on the history of the chemical sciences, to conduct scholarly events of interest to the chemical and historical communities, and to foster public understanding of the chemical sciences. Some examples of Beckman Center programmes include:

- A Spring 1997 symposium on 'The Emergence of Biotechnology: DNA to Genentech', as part of the Center's Biomolecular Sciences Initiative (BIMOSI). The symposium brought together major players in the biotechnology revolution to share reflections and



A gathering of distinguished scientists and historians at a Spring 1997 CHF symposium on 'The Emergence of Biotechnology: DNA to Genentech.' The event was recorded on videotape in front of a live studio audience. [The seated panel is comprised of (from left): Charles Weiner, MIT; Stanley Cohen, Stanford; Maxine Singer, Carnegie Institution of Washington; Herbert Boyer, Co-Founder of Genentech; Moderator Everett Mendelsohn, Harvard; Paul Berg, Stanford; George Rathmann, Amgen and ICOS; William Rutter, Chiron; and Arthur Kornberg, Stanford.] *Photograph by Harry Kalish.*

assessments from biotech's early years. The videotape of this event represents a significant contribution to the historical archive, and an edited version will be used to create a classroom resource.

- The Oral History Project—A programme in which leading chemical scientists, industrialists, and practitioners are interviewed at length and their lives and careers documented. Over 100 histories have been completed, with individuals from Mildred Cohn to Linus Pauling and Edward Jefferson to Ralph Landau.
- Continuing fellowships and travel grants to support visiting academic scholars and educators, including the Edelstein International Fellowship and Studentship, the Gordon Cain Fellowship on Entrepreneurship and Innovation, and the Eugene Garfield Fellowship. Many visiting and resident scholars use CHF premises to give Brown Bag talks to the wider community about their work.

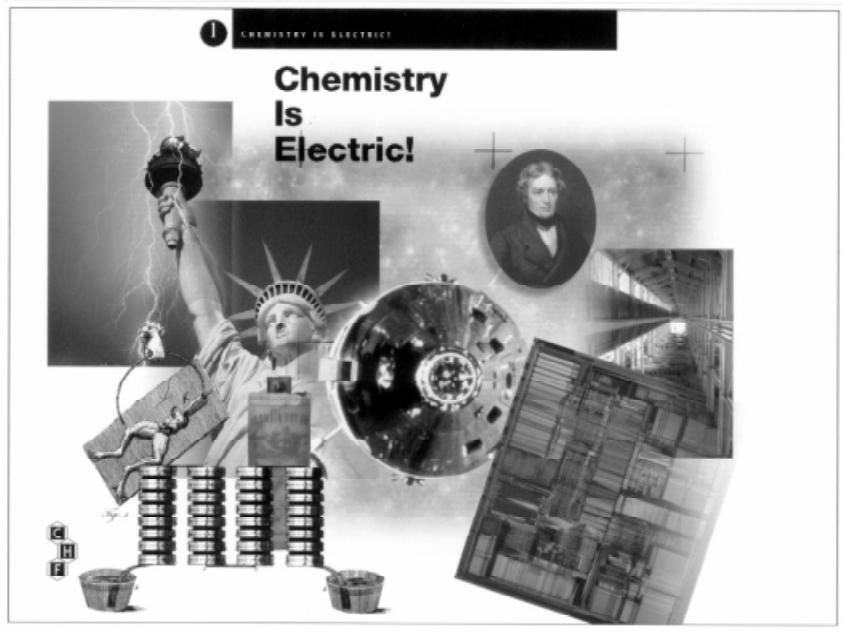
Public outreach

Public outreach activities are a critical part of CHF's mission 'to make known the achievements of chemical scientists and the chemical process industries.' These activities make an enormous contribution to the chemical community and broaden public understanding of the chemical sciences and technologies. Some examples are:

- The Glenn. E. Ullyot Lecture Series (co-sponsored with the ACS, Philadelphia Section and the Chemistry Department, University of Pennsylvania), which explores the impact of the chemical sciences on society. The lecture in 1997 was given by Dr. P. Roy Vagelos, former Chairman and CEO of Merck and Co., Inc.
- Travelling educational exhibits, that highlight the contributions of chemical scientists and the chemical industries to society. The most recent exhibit, *Chemistry is Electric!*, was developed to coincide with the 100th Anniversary of the Dow Chemical Company. These exhibits have been displayed in museums, high schools and cultural centres in the USA and Europe.
- Events throughout the USA, such as a Spring 1997 symposium on 'Innovation and Entrepreneurship in the Petrochemical Industry' at the Annual International Petrochemical Conference, San Antonio, Texas.
- Conversazioni at CHF's home in Philadelphia, which provide opportunities for leaders in the chemical community to speak to the Foundation and its friends.

Publications

CHF's publications activities are growing. CHF's news magazine, *Chemical Heritage*, has expanded into a 48-



A panel from CHF's most recent traveling exhibit: *Chemistry is Electric! Image Courtesy: Joel Katz Design Associates.*

page, four-color publication—one of the largest, most respected heritage periodicals in the world today.

CHF has begun an independent series on Innovation and Entrepreneurship. The first volume, *Everybody Wins! A Life in Free Enterprise*, by Gordon Cain was published in 1997. Next in this series will be Ralph Landau's edited volume on *Pharmaceutical Innovation.* CHF has also published books in partnership with the American Chemical Society and the University of Pennsylvania (recent examples include *Eilhard Mitscherlich—Prince of Prussian Chemistry* by Hans-Werner Schütt, and *Lavoisier—Chemist, Biologist, Economist* by Jean-Pierre Poirier).

CHF is developing timelines on subjects from *Chemical Engineering* to *Electrochemistry* to *Scientific Information*. CHF also produces resources for high-school teachers, including *Chemical Achievers* and *Structures of Life*, and popular publications, like *American Chemical Enterprise* and *Polymer Pioneers*.

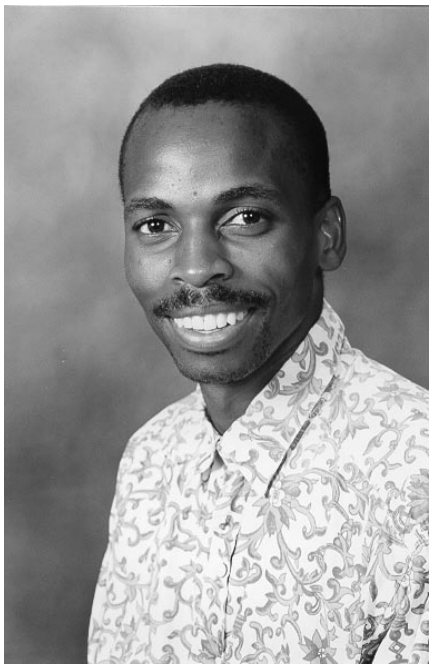
Further information about the Chemical Heritage Foundation may be obtained by contacting: Dr Leo Slater, Program Manager, Historical Services Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106, USA. Tel.: 215 925 2222 (x224), fax: 215 925 1954.

Project Sediba: a programme for upgrading physical science and mathematics teachers in Southern Africa

Pieter Steyn & Rufus Wesi

The beginning of 1996 witnessed the establishment of an upgrading programme for physical science and mathematics teachers, called the SEDIBA Project. The SEDIBA (Setswana word for fountain) Project is a partnership involving the Potchefstroom University for CHE, the North West Education Department, and NASCHEM—a division of DENEL, a giant armaments corporation. The project is aimed at improving the quality of science and mathematics teaching by assisting science and mathematics teachers to gain mastery of the subject and to teach it with confidence and commitment. The teaching of these subjects is of fundamental importance in the establishment of high technology industries and wealth creation in the Republic of South Africa. Amidst the recurrent high failure rate amongst matriculation science pupils and reports that local standards in education, particularly that of mathematics and science, are far below the norm, the founding of the SEDIBA Project was a much needed development.

Upon its inception in 1996, the SEDIBA Project registered an initial group of 40 teachers in the physical science stream. In the beginning of 1997, not only did 45 new teachers enrol for the first year of the physical science course, but a new programme for upgrading mathematics teachers was introduced with an initial enrolment of 37. The total enrolment of teachers in both



Rufus Wesi

physical science and mathematics programs to date is 117.

Project SEDIBA comprises two professional development programmes for physical science teachers and mathematics teachers offered on part-time bases. Tuition is done by means of contact teaching involving state of the art computer aided instruction and by means of distance learning. Lectures are offered mostly during school holidays on the campus of the Potchefstroorn University. Courses are presented at an equivalent of first year university level. The physical science stream consists of physics, chemistry, education, didactics of physical science, and computer literacy. Practical work forms an integral part of the physical science programme. The mathematics stream consists of topics in algebra, Euclidean geometry, trigonometry, calculus, education, computer literacy and didactics of mathematics.

Hosted by three academic departments (physics, chemistry and mathematics), project SEDIBA functions under the directorship of Professor Pieter Steyn, who is the head of the Chemistry Department and a member of the Executive Committee of the IUPAC Bureau. Four other senior members from the three above-mentioned departments are also involved in the day-to-day running of the project. As part of its contribution, the North West Education Department seconded two senior science teachers, Mr Wesi and Mr Dolo to the project; both are registered for masters degrees in science education. The management and staff of the SEDIBA Project are pleased that both the planning and organization of the project have been successfully executed. Both the teachers and the lecturing staff are highly motivated and enthusiastic about the project.

The current target of SEDIBA Project is practising secondary school teachers in possession of a 3-year diploma in physical science or mathematics teaching in the North West Province. The financial support from NASCHEM, as part of its social responsibility programme, makes it possible for teachers to enrol for this programme at reduced tariffs. Upon completion of the programme, teachers will obtain a higher education diploma in science or mathematics education. SEDIBA staff members are actively involved in research; investigating numerous aspects of science education such as the situation analysis with regard to the qualification and distribution of science teachers in the North West Province, the use of computer aided instruction, alternative conceptions, and the conceptualization of concepts in both science and mathematics.

Since its inception, the SEDIBA Project is steadily making a difference in the lives of teachers who for a long time tried to teach, however, with little success, and children who emerge from an educational environment characterized by crises, high failure rates, and a lack of a culture of learning. Through 117 teachers, the

SEDIBA Project is reaching out to over 30 000 pupils. Feedback from subject advisors and schools indicates that there has been a marked improvement in the quality of teaching from the SEDIBA teachers. The success of the project is attributed not only to commitment and dedication by both the teachers and the lecturing staff, but also to the fine spirit of cooperation between all the parties involved (that is, NASCHEM, the North West Education Department and the Potchefstroom University). It is envisaged that project SEDIBA will continue to make a considerable impact on the educational system, elevating the levels of science and mathematics education. This will enable more young people, particularly those from previously disadvantaged communities, to qualify for careers as scientists, mathematicians and engineers. The project will be extended to the Mpumalanga Province in 1998. Fifty physical science and mathematics teachers will be involved in a teacher upgrading programme made possible by a generous grant from INGWE, a coal mining company belonging to Gencor.

News

Paul R. Beljaars Becomes President of AOAC International

Paul Raymond Beljaars began his one-year term as President of AOAC International (formerly the Association of Official Analytical Chemists) on 10 September 1997 following the business meeting at the 111th AOAC International Annual Meeting in San Diego, California, USA. Beljaars is the Association's first European President.

Dr Beljaars, an actively involved member of AOAC since the mid-1970s, is now serving his fifth year on the AOAC Board of Directors. Other activities in AOAC have included co-founding the AOAC Europe Low Lands Subsection as well as serving on the Regional Sections Committee, the International Committee, the Methods Committee on Commodity Foods and Commodity Products, the Editorial Board, the Finance Committee, the Annual Meeting Programme Committee, and the task groups on Nominations, Methods Format, and the Bylaws.

When asked about his primary focus while in office, Beljaars responded 'At AOAC, we want to build a stronger international presence and work together with other international scientific organizations to create reliable analytical and microbiological methods worldwide.'

Beljaars, Head of the Chemistry Department's Food Inspection Service of the Netherlands Inspectorate for Health Protection since 1968, has been very active in methods development as the Chair of the Inspectorate's Project Group for Collaborative Studies (PCS). He has also been cofounder, author, and editor of the Dutch Journal *De Ware (N) -Chemicus* published by the Inspectorate for Health Protection.

Dr Beljaars holds a Masters Degree in Organic Chemistry and Food Chemistry from the State University of Utrecht and a Doctoral Degree in Agricultural Sciences from the Agricultural University of Wageningen, the Netherlands.

He is also active in the Netherlands Normalization Institute, the International Standardization Organization, and the European Committee for Standardization.

AOAC International update

Reorganization of the Technical Services Department

AOAC International reorganized its technical services department this year. Mr Scott Coates was appointed as Director of Technical Services in February 1997. Mr Steven Ward is now the Methods Manager, responsible for administering the AOAC® *Official Methods*℠ programme. Ms Anita Mishra is the AOAC Technical Coordinator responsible for administering the *Peer-Verified Methods*℠ and *Performance Tested Methods*℠ programmes. Ms Arlene Fox is the AOAC Programme Coordinator responsible for the administration of the: Technical Division for Reference Material, Technical Division on Laboratory Management, AOAC® *Laboratory Proficiency Testing Programme,* and coordinating international activities.

Method validation Programme Integration

AOAC is reviewing plans to integrate its three method validation programs (*Official Methods*℠*, Peer-Verified Methods*℠ *and Performance Tested Methods*℠*)* to make all three programmes more internally consistent. A recommendation will be submitted to the Board of Directors in September 1997 at the AOAC Annual Meeting in San Diego, California.

Technical Division on Reference Materials

AOAC established the Technical Division on Reference Materials several years ago to provide a forum to discuss the needs and standards for reference and quality control materials. The Technical Division on Reference Materials has about 500 members and has jointly sponsored the Biological and Environmental Reference Materials (BERM) Symposia held in Antwerp. The next BERM meeting is planned for Baltimore, Maryland, USA in 2000.

Technical Division on Laboratory Management

AOAC established a Technical Division on Laboratory Management in 1997 to provide AOAC members a forum to discuss laboratory management issues. The Technical Division on Laboratory Management will hold an inaugural business meeting at the AOAC International Annual Meeting on September

AOAC Laboratory Proficiency Testing Programme

AOAC is developing a Laboratory Proficiency Testing Programme. Subscribing laboratories will receive test samples for analysis, reports results to AOAC, and then receive a confidential report on how well the analytical results of their laboratory compare to other laboratories.

Annual Meetings

111th AOAC International, Town & Country Hotel, San Diego, California, USA, 7–11 September 1997.

112th AOAC International, The Queen Elizabeth Hotel, Montreal, Quebec, Canada 13–17 September 1998

113th AOAC International, Adam's Mark Hotel, Houston, Texas, USA, 26–30 September 1999

114th AOAC International, Adam's Mark Hotel, Philadelphia, Pennsylvania, USA, 10–14 September 2000

Official Methods of Analysis Compendium

The AOAC® Official Methods of Analysis compendium is available in both hardcopy and CD-ROM format. The 4th Revisions to the 16th edn of the AOAC* Official Methods of Analysis compendium will be available in the Spring of 1998.

IOCD

International Organization for Chemical Sciences in Development

supporting chemistry in developing countries ....

- IOCD Working Groups link chemists in developing countries with distinguished investigators in industrial countries in **collaborative research** on topics in the areas of health, agriculture and industry.
- IOCD organizes laboratory workshops in developing countries to provide chemists hands-on instruction in research techniques.

IOCD is a non-governmental, non-profit agency chartered in Belgium.

IOCD Governance

The Executive Committee of iOCD, comprising the President, Vice-President/Treasurer, Executive Director, and the three working group chairpersons, sets overall policy and programme directions for the IOCD. Advice and assistance on specific issues is available to the Executive Committee from members of the Senior Advisory Council, a panel of distinguished scientists, three of whom are Nobel Laureates.

IOCD Officers

President (1992–1995). Dr Jean-Marie Lehn, Laboratoire de Chimie Supramoléculaire, Université Louis Pasteur, Strasbourg, France.

Vice President/Treasurer. Dr Elkan R. Blout, Division of Biological Sciences, Harvard School of Public Health, Boston, Massachusetts, USA

Inquiries and requests for information about IOCD

Dr Robert H. Maybury, Executive Director, IOCD (USA Office), PO Box 8156, Fails Church, Virginia 22041, USA. Tel.: +1 703 845 9078, fax: +1 703 845 9078, e-mail: iocd@igc.apc.org http://iocd.unam.mx

Dr Carlos Rius, IOCD Secretariatm Av. Universidad 2219, 4 piso Col. Copilco A. Obregon, cp 004360, Mexico D.F., Mexico. Tel.: +52 5 616 1183, fax: +52 5 645 7709 and +52 5 558 8652, e-mail: riusal@servidor.unam.mx

IOCD Senior Advisory Council

Dr Berhanu Abegaz, Addis Ababa University, Addis Ababa, Ethiopia.

Dr Sydney Archer, Rensselaer Polytechnic Institute Troy, New York, USA.

Dr Sune Bergström, Karolinska Institutet, Stockholm, Sweden.

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Dr C.N.R. Rao, Indian Institute of Science, Bangalore, India.
Dr Glenn T. Seaborg (IOCD President Emeritus), Lawrence Berkeley Laboratory, Berkeley, California, USA.
Dr Christoph Tamin, Universitat Basel, Basel, Switzerland.

IOCD programme activities

IOCD was created in 1981 by a group of distinguished scientists from 15 countries meeting at UNESCO, Paris, out of a concern about the barriers that hinder the research efforts of chemists in developing countries. Scientific working groups were set up to enable chemists in developing countries to collaborate in research with distinguished investigators of industrialized countries. At present, there are four working groups in IOCD.

IOCD Working Group on Fertility Regulation
Chair: Dr Josef Fried, Chemistry Department, The University of Chicago, Chicago, Illinois, USA
Vice Chair: Dr Stephen Matlin, Commonwealth Secretariat, London, UK.

This working group is carrying out research on the chemistry and mechanism of action of new antifertility agents in the male. These agents are synthesized by chemists in developing countries, members of the working group, and then tested in a biological laboratory in the United States under the supervision of Dr M. James Cosentino.

IOCD Working Group on Tropical Diseases
Chair: Dr Fred Opperdoes, Research Unit for Tropical Diseases, International Institute of Cellular, & Molecular Pathology, Brussels, Belgium

Vice Chair: Dr Jacques Peri6, Laboratoire de Chimie Organique, Biologique, UniversM Pul Sabatier, Toulouse, France.

The Working Group on Tropical Diseases involves chemists in developing countries in synthesis of compounds that are tested as possible new chemotherapeutic agents in the treatment of tropical diseases such as malaria, filariasis, etc.

Working Group on Plant Chemistry
Chair: Dr Kurt Hostettmann, Institut de Pharmacognosie et, Phytochimie, Université de Lausanne, Lausanne, Switzerland.
Vice Chair: Dr Ermias Dagne, Chemistry Department, Addis Ababa University, Addis Ababa, ETHIOPIA, Dr Patrick Moyna, Facultad de Quimica, Montevideo, Uruguay.

The Working Group on Plant Chemistry has organized laboratory workshops on simple bioassay techniques for natural products chemists (1990, Nairobi, Kenya; 1992, Accra, Ghana; 1994, Uruguay; and 1996, Harare, Zimbabwe). In 1996, the workshop was followed by an international symposium on African Medicinal Plants. In 1997, an international symposium on Medicinal Plants from the Americas will convene in Panama).

Joint IOCD–IUPAC Working Group on Environmental Analytical Chemistry
Chair: Dr Waiter R. Benson, Bethesda, Maryland USA.

IOCD and the International Union of Pure and Applied Chemistry (IUPAC) formed this joint working group in 1993 to promote environmental analytical chemistry in developing countries. The group organized its first workshop in May, 1996, in Quito, Ecuador, in collaboration with an Ecuadorian non-governmental organization, Corporacion OIKOS, for 20 analytical chemists to assist them to take part in environmental monitoring.

Concerning IOCD funding....

The programme activities carried on by IOCD are funded by grants received from individual donors and agencies such as foundations, governmental organizations and the United Nations (UNESCO, WHO, etc.). IOCD operates with minimal overhead costs, primarily those for communications and limited travel of members of the Executive Committee. Contributions to IOCD are welcome, those from US citizens being tax-deductible since the IOCD affiliate, called the Organization for Chemical Sciences in Development, Inc. (OCDI), has been declared a **501 (c)(3) tax-exempt organization** by the US Internal Revenue Service.

Please address inquiries to: Dr Elkan R. Blout, Vice President and Treasurer, IOCD, Division of Biological Sciences, Harvard School of Public Health, 677 Huntington Avenue, MA 02115, USA.

Provisional Recommendations

IUPAC seeks your comments

In this section we publish synopses of IUPAC's latest provisional recommendations on nomenclature and symbols. All comments on these recommendations are welcome and will be taken into consideration. The final revised versions are published in *Pure and Applied Chemistry* and synopses of these are published in *Chemistry International* as recent reports.

If you would like to comment on the provisional recommendations please write to your nearest national/regional centre requesting a copy of the full report. Copies are not available from the IUPAC Secretariat. The most recent list of the national/regional centres appeared in *Chemistry International* 1997, **17**, 141.

Nomenclature, symbols, units and their usage in spectrochemical analysis—XVII. Laser-based molecular spectrometry for chemical analysis: absorption

(Prepared by G. Gauglitz & D.S. Moore)

This document, part XVII of this series, deals with the fundamentals and applications of laser absorption spectroscopy used in laser-based molecular spectroscopy for chemical analysis. It has four main sections: fundamentals of laser absorption spectroscopy, Doppler-limited spectroscopy, sub-Doppler laser spectroscopy, and time-resolved laser spectroscopy.

Basic aspects of spectral resolution limited by the Doppler width of molecular absorption are treated, application of single mode or multi-mode lasers is discussed, approaches to high-resolution sub-Doppler laser spectroscopy are given, and applications are discussed.

This document does not cover laser-induced effects causing luminescence, which are covered in Part XVI [*Pure Appl. Chem.* 1997, **69**(7), 1435–1449], or scattering processes covered in Part XVIII [*Pure Appl. Chem.* 1997, **69**(7), 1481–1468]. Some relevant common terms have already been defined in Part XVI and are not redefined in this document.

Comments on these recommendations are welcome and should be sent by 1 September 1998 to: Dr D.S. Moore, Group DX-2, Mail Stop C920, Los Alamos National Laboratory, Los Alamos, NM 87545 USA, Fax: +1 (505) 667 0500, e-mail: moored@lanl.gov

Meeting reports

Summary minutes of meetings of the Physical Chemistry Division Committee during the 39th General Assembly of IUPAC, Geneva, 23–27 August 1997

The future structure of IUPAC and the reorganization of the union that is expected as a result of the work of the Strategy Development and Implementation Committee were extensively discussed during the PCD Committee meetings. It was generally felt that changes are needed. The organization is elaborate and inflexible, and the work should be more focused on subjects which are coordinated over an international scale. The present statutes of IUPAC are too vague and nonspecific to allow the measurement of achievements. Its activities can be considered to represent two different interest areas: a scientific side exemplified by the 'Green Book', and data compilation and bodies such as CHEMRAWN and COCI on the other side. It was generally felt that the suggestions for restructuring in the VPCA report, involving the mergers of Commissions of the Analytical and Physical Chemistry Divisions would not result in a more responsive or relevant organization. Divisions and Commissions are criticised for not fulfilling the IUPAC mission, yet this mission remains vaguely defined.

To set the stage for the discussion, each participant of the meeting was asked to answer the question 'Would IUPAC be created if it did not exist?' There was a consensus that an international body is needed for matters such as international nomenclature, atomic weights, tables of thermodynamic and thermophysical properties

of substances of great commercial interest, etc. Such a body is also needed for sorting out units, and to formulate guidelines for presentation and codification in rapidly moving and newly developing fields. It could also act as a pressure group on governments in special issues. This body could be much smaller than the present IUPAC and more flexible, with a short response time. The discussion was centred on the question of what changes are needed in the Physical Chemistry Division in the next 2–4 years. The question was raised, 'What would happen if most or all permanent commissions were abolished?' After some discussion, the Commission Chairmen decided to meet as a group to discuss this question. In the interest of making the Physical Chemistry Division more flexible and relevant they recommended the following:

1 The Commission Chairmen should become a permanent part of the Division Committee which would otherwise be reduced to a few officers and an at-large TM.

2 At least an entire day of each General Assembly meeting should be devoted to discussions of scientific and technological issues as possible candidates for IUPAC projects. This discussion would involve the newly constituted Division Committee. Discussion of administrative issues would not be permitted during this period. Ideas would be circulated in advance of the GA, giving members of the Division Committee time to get input from scientific colleagues outside IUPAC.

3 Such discussions would lead to new projects, perhaps involving members of several Commissions. The Commissions would interpret their missions broadly and this, in time, will lead to appropriate changes in the Commission structure. Coordination with other Divisions would also be possible.

4 The need to keep the Commission structure was emphasized by the comment, 'Abolish the Commissions and IUPAC will die because of lack of projects'.

The Division Committee approved these recommendations and decided to propose to the IUPAC authorities that the membership of the Physical Chemistry Division Committee be changed to Commission Chairmen, a few officers and a position for a titular member from outside the existing Commissions.

Gerd Olofsson
Thermochemistry, Chemical Center, Lund University, PO Box 124, S-221 00, Lund, Sweden

Quantities, Units and Symbols in Physical Chemistry. Commission on Physico-Chemical Symbols Terminology and Units (I.1) at the IUPAC General Assembly 1995, Guildford, UK, 4–7 August 1995

Summary minutes prepared by Martin Quack, Secretary I.1

The Swedish translation of the abbreviated list of Physical Chemical Symbols has just been published and a German translation of the green book is underway. There seems to be a need for a better coordination of the translations. Further possible translations (into French, Italian, etc.) were discussed.

The versions of the green book for the 3rd edition, with the new title *Physical–Chemical Quantities, Units and Symbols*, which is planned for 1998, were discussed in detail. Of the numerous topics, we shall mention here only the more general issues which remained unresolved and still need further discussion. The question of the definition of the 'Electrochemical Potential' has been discussed and it was decided that a small subcommittee of five people, formed by some members of I.1 and I.3 (Electrochemistry) should prepare a definitive formulation which is acceptable to both I.1 and I.3 until the next meeting.

The central term 'amount of substance' remains controversial because of its clumsiness. Possible alternatives were discussed, with the idea of introducing a clearly technical term, which is not taken from the English language, such as 'enplethy' (from Greek, similar to enthalpy, energy, entropy), 'Stoffmenge' (from German) 'Stoffamount' mixed (German and English) and 'ment'.

In a meeting with I.5 (Spectroscopy) the introduction of an SI consistent unit for the quantity wavenumber (rarely called also 'repetancy') was discussed. One proposal is 1 Berg = 1 Bg = 1 m^{-1} (in analogy to 1 Hz = 1 Hertz = 1 s^{-1}). The frequently used unit 1 cm^{-1} would be replaced by 1 hBg (hectoberg), which is SI consistent and easily pronounced.

Meeting of the Commission on Biophysical Chemistry (I.7), Geneva, Switzerland, 24–25 August 1997

Helmut Hauser, as the Commission Chairman, first gave an overview of the directions that IUPAC was being urged to take. A more restrictive policy in selecting IUPAC projects will be adopted. Future IUPAC projects should be timely, highly relevant to the chemical community and completed in a reasonable period of time.

The main items on the agenda were the review of ongoing projects and the discussion of feasibility studies. The project 'Recommendations for the Presentation of NMR Structures of Proteins and Nucleic Acids' coordinated by Kurt Wüthrich has been completed and is scheduled for publication in *Pure and Applied Chemistry* by the end of 1997. The plan is to also have it pub-

lished in the *Journal of Molecular Biology,* the *European Journal of Biochemistry, Biochemistry* and the *Journal of Biomolecular NMR.* There was a general consensus among the members of Commission I.7 and the Division Committee that this document represents an important contribution by IUPAC. It will prove very valuable in the standardization of the reporting of NMR structures of proteins and nucleic acids.

In a joint meeting with the Electroanalytical Chemistry Commission V.5 (R.P. Buck, Chairman) Daniel Thévenot's project on Electrochemical Biosensors was reviewed. A 'final' document has been sent to eight journal editors, about 20 experts and the members of the two commissions involved. It has already been approved by the Interdivisional Committee on Nomenclature and Symbols (IDCNS). The present definition of biosensors excludes 'single use devices'. This fact has turned into a contentious issue that needs to be resolved satisfactorily in the final document. The completion date of this project is 1998.

Robert Goldberg's project on 'Thermodynamics of Enzyme-Catalyzed Reactions' was discussed in a joint meeting with the Thermodynamics Commission I.2 (W. Wakeham, Chairman). This project, which is now formally complete, has led to three publications in the *Journal of Physical and Chemical Reference Data:*

- R.N. Goldberg & Y.B. Tewari. Thermodynamics of enzyme-catalyzed reactions: Part 3. Hydrolases. *J. Phys. Chem. Ref. Data* 1994, **23**, 1035–1103.
- R.N. Goldberg & Y.B. Tewari. Thermodynamics of enzyme-catalyzed reactions: Part 4. Lyases. *J. Phys. Chem. Ref. Data* 1995, **24**, 1669–1698.
- R.N. Goldberg & Y.B. Tewari. Thermodynamics of enzyme-catalyzed reactions: Part 5. Isomerases and Ligases. *J. Phys. Chem. Ref. Data* 1995, **24**,1765–1801.

Robert Goldberg pointed out that the database needs updating as new information appears in the literature. There is now a need and an opportunity to derive Gibbs free energies and enthalpies of formation for biochemical substances from thermodynamic network calculations.

Hans-Jürgen Hinz and Fred Schwarz presented the third draft of a document dealing with 'Recommendations for the Measurement and for the Presentation of Results Obtained on Biological Substances with Scanning Calorimetry'. The scope of the final document was discussed in detail. To finalize the project in 1999 the working party will meet twice within the next year.

Martin Caffrey reported on the status of the project on 'Nomenclature for Lipid Mesophases'. He summarized the objectives of the project and described his strategy for realizing these objectives. A first version of a document entitled 'Recommendations for a Lipid Phase Nomenclature' has been drafted by the working party and this will serve as a basis for the preparation of the final document. The expected completion date is 1999.

Helmut Hauser reported on the status of the project 'Terminology in the Field of Lipid Vesicles'. The recent expansion and numerous new developments in this field of research called for an updating of the existing document written by Lisbeth Ter-Minassian-Saraga. For this purpose a new working party has been formed and an amended version of the document is due within the next year. The expected completion date is end of 1998.

In a joint meeting with the Electrochemistry Commission (I.3), Fred Hawkridge and George Wilson reported on the status of the joint project 'Redox Potential Measurements of Proteins'. Current plans include making the report consistent with the IUPAC Green Book, collecting and incorporating the comments of various expert reviewers, and producing a final version to be sent to IDCNS for approval in 1998.

Terry Stouch presented his feasibility study on 'Recommendations for Reporting the Results of Computations in Biophysical Chemistry'. Stouch has established a well-balanced working party of experts who concluded unanimously that there is a need for guidelines for the presentation of computational results. All members of the Commission agreed that this subject is of great importance to science and that it warrants the initiation of a new IUPAC project. It is conceived as a joint project with Professor J.E. Boggs of the subcommittee on Theoretical Chemistry of Commission I.5.

The time left was used for discussion of possible future projects that might be undertaken within Commission I.7 or as joint projects with other commissions. In several joint meetings with Commissions of the Physical Chemistry Division and also other Divisions the need for good coordination and collaboration within IUPAC was emphasized. John Ralston, Chairman of Commission I.6, stressed that making use of existing expertise within IUPAC by optimizing coordination and collaboration is preferable to generating new IUPAC bodies.

*Dr John R. Moody, Chairman, acting for the vacant position of Secretary

Minutes of the 6th Meeting of the Commission on Isotope Specific Measurements as References (II.4), University of Geneva, Geneva, Switzerland, 27 August 1997

Present:
Dr John R. Moody (Chairman)
Prof. Kensaku Okamoto
Dr John W. Gramlich
Dr Andreé Lamberty

Prof. Kevin J.R. Rosman
Dr Philip Taylor
Dr Robert Vocke
Prof. Paul De Bièvre
Prof. Klaus G. Heumann

Apologies for absence: Prof. Robert F.M. Herber

'The International Measurement Evaluation Programmes (IMEPs) for rounds 1–6 have been completed, with the exception of several publications that are in press or prepared for review. The concept of comparing the 'state of the practice' to a reference value established by isotope specific measurements traceable to the SI have been well received by programme participants and by IUPAC. The practice is likely to spread through the development of numerous regional IMEP programmes initiated by Prof. De Bièvre, thus multiplying the influence of the Commission programmes.

Summary

The members were welcomed to the meeting by Dr J.R. Moody. The minutes of the 4th Meeting of the Commission II.4 in Guildford, UK on 6–7 August 1995, were adopted as distributed. The agenda of the 6th meeting was adopted without amendments. New officers were elected with Prof. K. Okamoto assuming the position of Chairman. Dr J. Moody will continue service for two more years as Secretary in order to assure a smooth transition. Prof. Z. Motion of China and Dr H. Felber of Switzerland were nominated as titular members. All members were asked about their eligibility status. A new member list will be circulated after the Geneva meeting. With the new Commission leadership, a special meeting in Tsukuba, Japan hosted by Prof. Okamoto was proposed for 1998. This meeting will serve to bring together the new titular members and officers to discuss and plan the future work of the Commission. With at least four laboratories participating as certifying laboratories, close communication and planning is vital for the programmes in progress. In addition, the newer members will be assuming more leadership roles and thus will need the advice and guidance of previous officers. A special budget request will be prepared for this meeting.

Review of the current rounds of the International Measurement Evaluation Programmes (IMEPs)

IMEP round 6—Trace Elements in Water
The active portion of this programme concluded in 1995. In addition to the previous publication, the results have been prepared for submission to 'Accreditation and Quality Assurance.'

IMEP round 7—Trace Elements in Human Serum
The samples have been received and distributed to the 'certifying' laboratories. The submission of samples to participants should occur early in 1998 with programme conclusion expected in 1998.

IMEP round 8—Carbon Isotope Ratios in CO_2
This programme will not begin until 1998 and is not expected to conclude until 2000. It is not listed with the current IUPAC Programme Information Files.

IMEP round 9—Trace Elements in Natural Water
Samples have been obtained and 'certifying' laboratories have been identified. Sample distribution would not begin until 1998, with the expected conclusion of the programme in 1999.

IMEP round 10—Trace Elements in Polyethlene
The necessary samples have been obtained and 'certifying' laboratories have been approached for measurements. Some measurements have begun. The programme is expected to conclude in 1999.

IMEP round 11—Trace Elements in Car Catalysts
This programme and a previously announced programme for trace elements in soils are both delayed and are not given in the current IUPAC Programme Information Files.

Future rounds under consideration
Action on these items is deferred until the special meeting to be held in Tsukuba in 1998.

The next meeting of the Commission will be held in Berlin in 1999. A special meeting of the major programme 'certifiers' will be held in Tsukuba, Japan in 1998.

Final report of the Working Party on Recycling of Polymers

The Working Party on Recycling of Polymers, consisting of 12 experts from 7 countries, was created by the Macromolecular Division (IV) in 1993. It held three meetings, produced 10 papers describing various aspects of the current state of polymer recycling, sponsored a Microsymposium on the same subject that took place in Prague in July 1997, and formulated a set of recommendations. The Working Party concluded its final work by correspondence.

The recommendations of the Working Party were adopted unanimously by the Macromolecular Division on 26 August 1997 at the IUPAC General Assembly in Geneva. The papers and the recommendations will be published together with the proceedings of the Prague Microsymposium on Polymer Recycling in

Macromolecular Symposia. On the recommendation of its chairman, the Working Party was then disbanded, having accomplished its assigned task.

Norbert M. Bikales
Chairman of the Working Party

Summary Minutes—Commission on Spectrochemical and other Optical Procedures for Analysis (V.4), of the General Assembly meeting, Geneva, Switzerland, 23–27 August 1997

Alignment for change

What is relevance? In terms of spectrochemical analysis, it means recommendations that get used and documents that meet real needs. To bring some of the many recommendations from V.4 into the light, several tactics were taken. First, our venerable chair Tuan Vo-Dinh, and John Bertie, the chair of I.5, wrote an article for *Applied Spectroscopy*, which presented the products of both commissions and described the objectives of the ongoing work. There has been strong positive response to the article, especially in the number of inquiries for reprints and preprints.

Secondly, all our documents were placed on the Internet at the IUPAC site on the RSC server (*Eds note: these have been moved to the new IUPAC web site at http://www.iupac.org*). An introductory page was written containing the links to the various recommendations and provisional recommendations. As these are stored in PDF format, Acrobat Reader (available free) allows easy printing as originally published and complete text searching.

Thirdly, a number of relevant journal editors were approached to advertise the presence of the web site and the electronic forms of our documents, as well as to place a link to the site in their own web pages if they had them. All were extremely happy to do so. To produce useful documents that meet real needs, the pulse of technology-driven advances in optical methods for analysis continues to be taken by the members of V.4 and their contacts and colleagues. Yearly meetings and other venues are used to brainstorm about new projects deemed to meet some of these needs. Whether these be nomenclature documents to sort out confusion in newly developing fields or critical assessments to help researchers and analysts evaluate competing new technologies, the high energy of commission members is used to rapidly produce appropriate publications.

Next meeting: Commission members will convene at a mini-meeting during Europtode in Münster, Germany, 20 March 1998.

D.S. Moore, Secretary V.4

Conferences

100th Anniversary of the Serbian Chemical Society

The Serbian Chemical Society (SCS) was, founded on 27 November 1897 in Belgrade as the 10th oldest chemical society in the world. The initial task of the society included the exchange of Information and reporting on innovations and new developments in all areas of chemistry, presentation of original research results by society members, consultation on practical problems in chemistry, the use of chemical knowledge for the benefit of national economy, problems in chemical education and efforts to improve the status of chemists in Serbia

The activity of SCS was temporary interrupted by World War 1 but was continued soon after so that, in 1927, in the new state, the society war able to transform into 'The Chemical Society of the Kingdom of Yugoslavia'.

The publication of the Journal of the society, *Bulletin de la Societe Chimique du Royaume de Yugoslavie,* commenced In 1930 but was put to a stop by World War II. Immediately after the war, the work of SCS and the publication of the journal *Bulletin de la Societe Chimique* were renewed; since 1985, the name was changed to *Journal of the Serbian Chemical Society,* published in English.

Current activities of SCS, with a membership approaching 3000 and 15 affiliations in all major cities, are mainly concerned with the organization of national and international scientific meetings in different areas of chemistry, chemical technology and metallurgy (19 sections), specialized seminars in chemical education,

summer schools, lectures by prominent scientists and the publication of the official journal (12 issues of the 61st volume in 1996) and the *Chemical Review* (31st volume), the latter primarily intended for students.

At the celebration of the Centennial, 23–27 September, these and other achievements wore presented in detail by the presidents of SCS and the organizational committee, Professors J. Jovanovic and Z. Cekovic. The festivity also offered an opportunity to reaffirm international relations and the position of the society. At the official Assembly ceremony, SCS was offered best wishes and received congratulations by Sir Derek Barton, representing IUPAC, and by delegates and members of numerous chemical societies (Richard R. Ernst, Ronald Breslow, Pierre Potier etc.).

In the scientific programme, plenary lectures were delivered by the following speakers from abroad: Ronald Breslow (USA), John H. Beynon (UK), Richard R. Ernst (Switzerland), Armin de Meijere (Germany), Norman L. Allinger (USA), Derek H.R. Barton (UK), Pierre Potier (France), Keith Bowden (UK), Michael Smith (Canada), Lev Aleksandrovich Gribov (Russia) and Eberhard Schurmann (Germany).

Plenary lectures were also delivered by Radoslav Adzic, Slobodan Macura and Gordana Vunjak-Novakovic, members of SCS working currently abroad, and by Aleksandar R. Despic (Belgrade), Ivan Gutman (Kragujevac) and Miroslav J. Gasic (Belgrade).

The programme of the Anniversary included the presentation of several SCS special publications and of the jubilee post stamp, the exhibition 'The World of Chemistry' and various Social events.

Miroslav J. Gasic
Serbian Chemical Society, Karnegijeva 4, 11000 Belgrade, Yugoslavia 4, Tel./fax: +381 11 337 04 67, e-mail: SHD@elab.tmf.bg.ac.yu Internet: http://ihtmceh4.tmf.bg.ac.yu/htdocs/shd100.htm

Federation of European Chemical Societies

FECS General Assembly meeting

The General Assembly of the Federation of European Chemical Societies was held on 11–12 September 1997 at the Technical University of Vienna, Austria, at the invitation of the Geselischaft Osterreichischer Chemiker. Local arrangements were made by Dr P. Czedik Eysenberg. The President, Prof. Lauri Niinisto (Association of Finnish Chemical Societies), was in the chair and delegates from 24 member societies attended, together with representatives of FECS Divisions and Working Parties.

The President of the GÖCh, Dr W. Unger, welcomed the delegates to Vienna on the occasion of the 100th anniversary of the Gesellschaft Österreichischer Chemiker. A scroll conveying greetings from FECS to mark the GÖCh 100th anniversary had been presented at an earlier celebratory meeting.

FECS Lecture

Professor Dieter Oesterhelt, Max-Planck-Institute für Biochemie, delivered the 1997 FECS Lecture on the subject of 'Farbenspiel einer lonenpumpe'—'Colour changes of an ion pump' on 8 September at the celebratory meeting marking the occasion of the GÖCh 100th anniversary.

The 1998 Lecture will be given by Professor Alex Johnstone, University of Glasgow, at the First European Conference on Chemical Education in Budapest in August 1998.

FECS Award

The FECS President, Professor L Niinisto, presented the FECS Award for 1997 to Professor Ernö Pungor, one of the founders of the former Working Party on Analytical Chemistry, for his very valuable contribution to the work of FECS over many years. Professor Pungor (b. 1923) has had an extensive university career, having been first Professor of Analytical Chemistry at the Technical University in Veszprem and then in a similar position in Budapest. He has also served as Minister for Science and Technology and is currently Director General of Bay Zoltán Foundation for Applied Research. Within FECS, he served as Chairman for the Working Party on Analytical Chemistry in 1981–87 and organized the 2nd Euroanalysis Conference in Budapest in 1975. His best known research accomplishments involve the theory and applications of ion-selective electrodes.

Chemistry and the environment

The FECS Working Party on Chemistry and the Environment, under its new chairman Prof. A. Astrup Jensen, Danish Chemical Society, is developing a major action programme with a number of

new activities, including aspects of water chemistry. The Working Party aims to create subgroups in specialist areas which will help to strengthen networks and involve other existing European groupings. Contact with the European Environment Agency in Copenhagen is being developed. The involvement of all FECS member societies is strongly encouraged.

Younger chemists

An enthusiastic welcome was given to proposals that the FECS should take a greater responsibility for meeting the needs of younger members of national chemical societies and clearly demonstrate to them an interest in helping to promote their ideas. In the first place, statistics and other information on the levels of involvement of younger chemists in national chemical societies will be collected and a report produced for wide circulation and discussion. At the same time, ways of promoting internet discussion groups will be explored and a small group of younger chemist representatives from national societies will assist in this project.

Euchem

FECS believes there is an urgent need to improve its approach to promoting conference activity, bearing in mind the variety of activity carried out by, for example, Euchem, Euresco, NATO Workshops and Gordon Conferences in Europe. For some years, the Euchem Committee has been an integral part of FECS and therefore has a remit to operate on a pan-European basis. Some encouragement will be given to the Euchem Committee to help it develop the involvement of a greater number of FECS member societies and thus more visibly represent the aims and objectives of FECS. (A link between the Euchem Committee and Euresco already exists.)

Guide of European Museums with collections on the History of Chemistry. The *Guide*, which is produced by the FECS Working Party on History of Chemistry, is being updated and reprinted. Further information on the new issue is available from Prof. H.A. Deelstra, University of Antwerp (UIA), Tel.: +32 3 820 2715, fax: +32 3 820 2734, e-mail: Labrom@uia.ac.be

Conference Calendar

1998

Environmental Chemistry

15–20 March1998
CHEMRAWN XIˇ—Latin American Symposium on Environmental Chemistry, 15–20 March 1998, Montevideo, Uruguay
Prof. Patrick Moyna, Decano, Facultad de Quimica, Avda. General Flores 2124, Montevideo, Uruguay. Tel.: 598 2 924 18 84, fax: 598 2 924 19 06, email: gueiqa@bilbo.edu.uy, Web Page: http://bilbo.edu.uy/reunion98

Chemical thermodynamics and calorimetry

5–9 April 1998
International Conference on Chemical Thermodynamics and Calorimetry, Campinas, Brazil.
Watson Loh, Instituto de Quimica-UNICAMP, Caixa Postal 6154, 13081-970, Campinas, Brazil. Tel.: +55 192397881, fax: +55 192393805, e-mail: wloh@iqm.unicamp.br, Web Page: http://circe.iqm.unicamp.br/~whol/conf

Trace element speciation in biomedical, nutritional and environmental sciences

4–7 May 1998
1st International Conference on Trace Element Speciation in Biomedical, Nutritional and Environmental Sciences, Neuherberg, Munich, Germany.
Prof. Dr Peter Schramel, GSF-Forschungszentrum fur, Urnwelt und Gesundhuit GmbH, Institut fur Okologische Chemie, Neuherberg, D-85758 Oberschleissheim, Germany. Tel.: +08931874062.

Secretariat: Ulla Schrödel, GSF-Forschungszentrum, Postfach 1129, D-85758 Oberschelißheim, Germany. Tel.: +49 89 3187 3030, fax: +49 89 3187 3362.

Automation and new technology for the clinical laboratory

24–27 May 1998
International Congress on Automation and New Technology for the Clinical Laboratory, Santiago de Compostela, Spain.
Dr Ramon Galimany, Sociedad Espanola de Bioquimica Clinica y Patalogica Molecular, Padilla 323-325 Desp 68, ES 08025 Barcelona, Spain. Tel.: +34 3 446 26 70, fax: +34 3 446 26 72.

Degradation processes in the environment

24–28 May 1998
Measuring, Modelling, and Predicting Degradation Processes in the Environment, Dubronik (Cavtat),

Croatia.
Dr Aleksandar Sabijic, Institute Rudjer Boskovic, PO Box 1016, HR-10001 Zagreb, Croatia. Tel.: +385 1 456 1089, fax: +385 1 272 648, e-mail: sabljic@olimp.irb.hr

Organic synthesis

28 June–2 July 1998
12th International Conference on Organic Synthesis (12-ICOS), Venice, Italy.
Prof. Carlo Scolastico, Dip.to di Chimica Organica e Industiale, Università di Milano, Via G. Venezian 21, I-20133 Milano, Italy. Tel.: +39 2 236 7613, fax: +39 2 236 4369, e-mail: nicotra@imiucca.csi.unimi.it

Heteroatom chemistry

5–11 July 1998
Fifth International Conference on Heteroatom Chemistry, London, Ontario, Canada.
Prof. Kim M. Baines, Department of Chemistry, University of Western Ontario, London, Ontario, Canada, London, Ontario N6A 5B7, Canada. Tel.: (519) 661-2166, fax: (519) 661-3022, e-mail: kbaines2@julian.uwo.ca

How to apply for IUPAC sponsorship

To apply for IUPAC sponsorship, conference organizers should write to the IUPAC Secretariat (see inside back cover for address) requesting an Advanced Information Questionnaire (AIQ). Completed AIQs should be returned to the Secretariat preferably 2 YEARS and at least 12 months before the conference. Late applications will not be considered. Further information on granting of IUPAC sponsorship was published in *Chem. Intl.* 1992, **14**, 203.

Chemistry in Africa

6–10 July 1998
7th International Conference on Chemistry in Africa, South Africa.
Prof. T. M. Letcher, Department of Chemistry & Applied Chemistry, University of Natal, Durban 4041, South Africa. Tel.: +31 260 3090, fax: +31 260 3091, e-mail: letcher@che.und.ac.za

Macromolecules

13–17 July 1998
37th International Conference on Macromolecules (MACRO '98), Gold Coast, Australia.
Prof. R. Gilbert, Chemistry School, Sydney University, NSW 2006, Australia. Tel.: +612 9351 3366, fax: +612 9351 3329

Photochemistry

19–24 July 1998
XVII IUPAC Symposium on Photochemistry, Sitges, Spain.
Prof. Josep Font i Cierco, Departament de Quimica, Universitàt Autonoma de Barcelona, Bellaterra, 08193 Barcelona, Spain. Tel.: +34 3 581 1255, fax: +34 3 581 1265, e-mail: iqorfont@cc.uab.es

Polymeric materials

20–23 July 1998
Mechanical Behaviour of Polymeric Materials, 18th Discussion Conference.
Dr Jaroslav Kahovec, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Heyrovského nám. 2, 162 06 Prague 6 - Petriny, Czech Republic. Tel.: +4202360341, fax: +4202367981, e-mail: sympo@imc.cas.cz

Chemical thermodynamics

26 July–1 August 1998
15th International Conference on Chemical Thermodynamics, Porto, Portugal.
Prof. Manuel A.V. Riberio da Silva, Department of Chemistry, Faculty of Science, Rua do Campo Allegre, 687, P-4150 Porto. Tel.: +35 12 6082821, fax: +35 12 2008628, e-mail: risilva@fc.up.pt

Novel aromatic compounds

2–7 August 1998
9th International Symposium on Novel Aromatic Compounds (ISNA-9), Hong Kong.
Prof. Henry N.C. Wong, Department of Chemistry, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong. Tel.: +852 2609 6344, fax: +852 2603 5057, e-mail: hncwong@cuhk.edu.hk

Pesticide chemistry

2–7 August 1998
9th International Congress on Pesticide Chemistry, London
Dr John F. Gibson, Scientific Secretary, The Royal Society of Chemistry, Burlington House, London W1V 0BN.

Solubility phenomena

5–8 August 1998
Eighth International Symposium on Solubility Phenomena, Niigata, Japan.
Kiyoshi Sawada, General Secretary of the 8th ISSP, Department of Chemistry, Faculty of Science, Niigata University, Niigata 950-21, Japan. Tel.: +81 25 262 6265, fax: +81 25 262 6116, e-mail: issp@sc.niigata-u.ac.jp

Chemical education

9–14 August 1998
15th International Conference on Chemical Education: Chemistry and Global Environmental Change,

Egypt.
Prof. Saad S.M. Hassan, Department of Chemistry, Faculty of Science, Ain Shams University, Cairo, Egypt. Fax: +20 2 831836, e-mail: iupac15@asunet.shams.eun.eg

Carbohydrate symposium

9–14 August 1998
19th International Carbohydrate Symposium, San Diego, CA, USA.
Prof. David A. Brant, ICS 98 Symposium Secretariat, Department of Chemistry, University of California, Irvine, CA 92697-2025, USA. Tel.: (714) 824-8976, fax: (714) 824-1372, e-mail: ics98@uci.edu, Web Page: http://www.ics98.uci.edu

Physical organic chemistry

16–21 August 1998
14th International Conference Physical Organic Chemistry, Florianopolis, Brazil.
Prof. Eduardo Humeres, Department of Chemistry, Universidade Federal de Santa Catarina, Campus Univeritario-Trindade, 88040-900 Florianopolis, Brazil. Tel.: +55 48 231 9219, fax: +55 48 231 9711/231 9688, e-mail: humeres@mbox1.ufsc.br

Co-ordination chemistry

31 August–September 1998
33rd International Conference on Co-ordination Chemistry
Dr Ivano Bertini, Chairman, University of Florence, 33rd ICCC Secretariat, Department of Chemistry, FLorence 50121, Italy. Tel.: +39 55 2757 549, fax: +39 55 2757 555, e-mail: ICCC@rics.lrm.fi.cnr.it

Electrochemistry

13–18 September 1998
International Society of Electrochemistry, Kitakyushu, Japan.
Prof. Erika Kalman, 1025 Budapest, Central Research Institute for Chemistry of the Hungarian Academy of, Sciences, Pusztaszeri út 59-67, Hungary. Tel.: +36 1 325 7548, fax: +36 1 325 7509, e-mail: kale@cric.chemres.hu

Chemistry of germanium, tin and lead

20–25 September 1998
9th International Conference on the Coordination and Organometallic Chemistry of Germanium, Tin & Lead (ICC0C GTL-9) Melbourne, Australia.
Prof. Dainis Dakternieks, Deakin University, Biological & Chemical Sciences, Geelong 3217, Australia.

Supramolecular science and technology

27 September–3 October 1998
1st International Conference on Supramolecular Science & Technology, Zakopane, Poland.
Marek Pietraszkiewicz, Chairman of the ICSS&T, Polish Academy of Sciences, Kasprzaka 44/52, 01224 Warsaw. e-mail: pictrasz@ichf.edu.pl

Chemistry of natural products

11–16 October 1998
21st IUPAC symposium on the Chemistry of Natural Products, Beijing, China.
Prof. Xiao-Tian Liang Institute of Materia Medica Chinese Academy of Medical Sciences 1 Xian Nong Tan Street Beijing 100050 China. Tel.: +86 10 6 301 3366-245, fax: +86 10 6 301 7757.

Excitonic processes in condensed matter

2–5 November 1998
Third International Conference on Excitonic Processes in Condensed Matter, Boston, MA, USA/
Prof. William M. Yen, Department of Physics and Astronomy, University of Georgia, Athens, GA, USA. 30602-2451. Tel.: (706) 542-2491, fax: (706) 542-2492, e-mail: wyen@hal.physast.uga.edu

1999

Functional dyes

31 May–4 June 1999
4th International Symposium on Functional Dyes (I8FD4), Osaka, Japan.
Prof. Yasuhiko Shirota, Osaka University, Faculty of Engineering, Yamadaoka, Suita, Osaka 565, Japan. Tel.: 81 6 879 7364, fax 81 6 877 7367, e-mail: shirota@ap.chem.eng.osaka-u.ac.jp

CHEMRAWN

20–25 June 1999
CHEMRAWN XII—African Food Security and Natural Resource Management: The New Scientific Frontiers, Nairobi, Kenya.
Dr Pedro Sanchez, Director Gen-

Visas

It is a condition of sponsorship that organizers of meetings under the auspices of IUPAC, in considering the locations of such meetings, should take all possible steps to ensure the freedom of all *bona fide* chemists from throughout the world to attend irrespective of race, religion, or political philosophy. IUPAC sponsorship implies that entry visas will be granted to all *bona fide* chemists provided application is made not less than three months in advance. If a visa is not granted one month before the meeting the IUPAC Secretariat should be notified without delay by the applicant.

eral, International Center for Research in Agroforestry, PO Box 30677, Nairobi, Kenya. Tel.: [254] 2 521003, fax [254] 2 520023 e-mail: p.sanchez@cgnet.com

Polymerization methods

12–15 July 1999
Advances in Polymerization Methods, 39th Microsymposium, Prague, Czech Republic.
Dr Jaromir Lukas, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Heyovskeho na. 2, 162 06 Praha 6-Petriny, Czech Republic. Tel.: +42 2 360341, fax: +42 2 367981, e-mail: sympo@imc.cas.cz

Carotenoids

18–23 July 1999
12th International Symposium on Carotenoids, Cairns, Australia.
Prof. George Britton, School of Biological Sciences, The University of Liverpool, Crown Street, Liverpool, L69 3BX, UK. Tel.: +44 (151) 794, fax: +44 (151) 794 4349.

Rheology of polymer systems

19–22 July 1999
19th Discussion Conference on the Rheology of Polymer Systems, Prague, Czech Republic.
Dr Jaromir Lukas, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Heyovskeho na. 2, 162 06 Praha 6-Petriny, Czech Republic. Tel.: +42 2 360341, fax: +42 2 367981, e-mail: sympo@imc.cas.cz

Ionic polymerization

19–23 July 1999
International Symposium on Ionic Polymerization, Kyoto, Japan.
Dr Shiro Kobayashi, Department of Materials Chemistry, Graduate School of Engineering, Sendai 606-01, Japan. Tel.: +81 75 753 5608, fax: +81 75 753 4911, e-mail: kobayashi@mat.polym.kyoto-u.ac.jp

Analytical science

25–30 July 1999
Analytical Science into the Next Millennium, SAC 99, Dublin, Ireland.
Prof. Malcolm R. Smyth, School of Chemical Sciences, Dublin City University, Dublin 9, Ireland. Tel.: +353 1 7045308, fax: +353 1 7045032, e-mail: smyth@ccmail.dcu.ie

Solution chemistry

26–31 July 1999
XXVI International Conference on Solution Chemistry, Fukuoka City, Kyushu, Japan.
Prof. Hitoshi Ohtaki, Department of Chemistry, Faculty of Science and Engineering, Ritsumeikan University, 1-1-1 Noji-Higashi, Kusatsu 525, Japan. Tel.: +81 775 61 2777, fax: +81 775 61 2659, e-mail: ohtaki@bkc.ritsumei.ac.jp

Macromolecule–metal complexes

6–10 September 1999
8th International Symposium on Macromolecule–Metal Complexes (MWIC–VIII) Tokyo, Japan.
Prof. Eishun Tsuchida, Waseda University, Tokyo 169, Japan. Tel.: 81 3 5286 3120, fax: 81 3 3209 5522.

2000

High temperature materials chemistry

1 January 2000
International Conference on High Temperature Materials Chemistry, Aachen, Germany.
Prof. K. Hilpert, Forschungszentrum Julich GmbH, Institut fur Werkstoffe der Energietechnik (IWE 1), D-52425 Julich, Germany. Tel.: +49 2461 61 3280, fax: +49 2461 61 3699, e-mail: k.hilpert@fz-juelich.de

Bio-organic chemistry

First quarter 2000
5th IUPAC Symposium on Bio-Organic Chemistry, (ISBOC-V), New Delhi, India.
Prof. S. Ranganathan, Biomolecular Research Unit, Regional Research Laboratory, Trivandrum 695 019, India. Tel.: +91 (471) 491 459, fax: +91 (471) 490 186.

Macromolecules

9–14 July 2000
International Symposium on Macromolecules (MACRO 2000), Warsaw, Poland.
Dr Stanislaw Penczek, 90-363 Lodz, Sienkiewicza 112, Poland. Tel.: +48-42 819815, fax: +48-42 847126.

Natural products

1 September 2000
22nd International Symposium on Chemistry of Natural Products, Sao Paulo, Brazil.
Prof. Dr Otto R. Gottlieb Rua 5 de julho 323, Apt. 1001, 22051-030, Rio de Janeiro 22051-030, Brazil.

Biotechnology

3–8 September 2000
11th International Biotechnology Symposium, Berlin, Germany.
Prof. G. Kreysa, DECHEMA eV, Postfach 150104, Theodor-Heuss Allee 25, D-60061 Frankfurt/Main, Germany. Tel.: +49 (69) 7564 205, fax: +49 (69) 7564 302.