

## Reports from IUPAC sponsored symposia

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Fifteenth international conference on chemical education: chemistry and global environmental change. Cairo, Egypt, 9–14 August 1998

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### **Symposium: tertiary vocational training in chemistry related to health care**

The International Conferences on Chemical Education, are held biennially under the auspices of UNESCO and the International Union of Pure and Applied Chemistry (IUPAC). The 15th Conference was held in Cairo from 9–14 August 1998, organized by the Chemistry Department in the Faculty of Science at Ain Shams University, Cairo, Egypt. The theme for this conference was '*Chemistry and Global Environmental Change*'. The pivotal role of IUPAC in the development, and education in, chemistry means that IUPAC has an inevitable and essential role in these conferences. It follows that its Committee on the Teaching of Chemistry (CTC) is the essential interface between IUPAC and the organizers of the International Conferences on Chemical Education.

In 1995, as part of a reorganization within IUPAC, the Clinical Chemistry Division and the Medicinal Chemistry Section were amalgamated into a new Division of Chemistry and Human Health. Up to this point both the Medicinal Chemistry Section and the Clinical Chemistry Division were represented at CTC by Prof. C.R. Ganellin and Dr H.G.J. Worth, respectively. When the theme for the 15th Conference was announced, it was agreed that it would be appropriate for the new Division (which was in a gestational stage at this point), to make a contribution. Professor Ganellin and Dr Worth agreed to organize a joint symposium on behalf of the new Division. Their programme, which was endorsed by both the CTC and the Chemistry and Human Health Division, is shown in the Appendix. The symposium was presented on the morning of Wednesday 12 August 1998.

Both Clinical Chemistry and Medicinal Chemistry are important areas of science, where chemistry graduates can (and do) make major contributions in the application and development of the science. They are areas that are not always well understood by teachers of chemistry, and consequently students are not always encouraged to embark upon careers in these challenging areas. This was the general theme of the symposium with specific areas highlighted in each of the individual presentations. Dr Worth defined the role of the clinical

chemistry department within the hospital laboratory service, and indicated the interrelation between chemists and other professional groups, particularly medical graduates, and the role of the chemist within this. Dr Khatami's presentation indicated the difficulties of the development of clinical chemistry within developing countries. These problems are often similar to those in so-called developed countries, but perhaps more intense. Finally, Dr Duffus considered toxicology as a speciality within clinical chemistry, and indicated the particular problems that there are in training in toxicology for chemists. With the increasing awareness of the relationship between chemicals and the environment, it is the chemist whose advice is frequently sought, but who is often poorly educated in this respect, as toxicology does not feature in the curriculum of many chemistry graduates.

In the section on Medicinal Chemistry, Professor Ganellin indicated the essential role that is played by chemists in the development of drugs within the pharmaceutical industry. It is well recognized that pharmaceutical companies prefer to recruit competent organic chemists with good potential and train them in medicinal chemistry. This emphasizes the importance in training good synthetic organic chemists and to include some insight into the requirements of medicinal chemistry in order to encourage the good chemists to look for careers within the pharmaceutical industry. Dr Kobayashi gave a comprehensive overview of the pharmaceutical industry world-wide, and indicated the role of Asia within that context. This includes conventional medicinal chemistry as practised by the pharmaceutical industry, but also Chinese and herbal medicines based upon traditional Asian practices. Medicinal chemistry has an important role in combining these approaches, particularly in identifying active components in herb medicine. In Latin America there is perhaps less output for medicinal chemists within the pharmaceutical industry, as it tends to concentrate its research and development in other geographical areas. However, there is an important role in the teaching of medicinal chemistry within university faculties and these are concentrated primarily in chemistry departments and schools of pharmacy. Professor Gupta described a major programme throughout Latin America where data on curricula for the teaching of medicinal chemistry is being correlated across about 30 institutions.

Unfortunately, Dr Khatami was unable to attend the conference and could therefore not make her presenta-

tion. This was read on her behalf by Dr Worth.

The overall attendance of the symposium was about 30–40 participants, which the speakers felt was disappointing, but in fact was typical of most of the symposia. However, some useful discussion was generated which may well lead to further discussion and developments outside the conference.

On of us (H.G.J.W.) would like to acknowledge the support of the British Council.

H.G.J. Worth

## Appendix

### Clinical chemistry—Chairman Prof. C. R. Ganellin

#### *Postgraduate Curriculum for Training in Clinical Chemistry*

**Dr H.G.J. Worth**, Department of Clinical Chemistry, The King's Mill Centre for Health Care Services, Sutton in Ashfield, Nottinghamshire, NG17 4JL, UK.

#### *Clinical Chemistry Training in Developing Countries*

**Dr Z. Khatami**, Officer in Charge of QC and Biochemistry Department, WHO Collaborating Centre, National Reference Laboratories of Iran.

#### *Toxicology for Clinical Chemists*

**Dr J.H. Duffus**, The Edinburgh Centre for Toxicology, 43 Mansionhouse Road, Edinburgh, EH9 2JD, Scotland, UK.

### Medicinal chemistry—Chairman Dr H.G.J. Worth

#### *Training Medicinal Chemists for Research in Industry*

**Prof. C.R. Ganellin**, Department of Chemistry, University College of London, 20 Gordon Street, London EC1H 0AJ, UK.

#### *The Situation for Educating Medicinal Chemists in Asia*

**Dr T. Kobayashi**, Lilly Research Laboratories, Eli Lilly, Kobe, Japan

#### *Teaching of Medicinal Chemistry in Latin America*

**Prof. M.P. Gupta**, College of Pharmacy, Pharmacognosy Research Center, Estafeta Universitaria, University of Panama, Panama, Republic of Panama

### 7th International chemistry conference in Africa and 34th convention of the South African Chemical Institute. University of Natal, Durban, 6–10 July 1998

The 7th International Chemistry Conference in Africa (7ICCA) combined with the 34th South African Chemical Institute (SACI) Convention was held at Natal University, Durban (Shepstone Building) from 6 to 10 July 1998. It was the first time that an ICCA meeting had been held in South Africa.

It was the largest chemistry conference ever held in Africa, and attracted over 600 delegates. The Plenary lecturers included Nobel Laureate, Prof. Jean-Marie Lehn of France, Prof. Peter Day, FRS, Director of the Royal Institution of Great Britain, Prof. Peter Atkins, the well known Physical Chemist and Philosopher from Lincoln College, Oxford, and Prof. Krishna V. Sane of the Jawaharlal Nehru Centre for Advanced Scientific Research in Bangalore, India. His work on cost effective education in science in the 21st century is relevant to Africa today. The keynote speakers included Prof. David King, FRS, Head of Chemistry at the University of Cambridge, UK.

The conference was sponsored by the International Union of Pure and Applied Chemistry (IUPAC) and was



Delegates at the opening ceremony, 7ICCA. From left to right: Prof. Ernst Breed, President of the South African Chemical Institute, Prof. Paul Walter, President of the American Chemical Society, Dr. L.P.H.M. Mtshali, Minister of Arts, Science, Culture and Technology, Republic of South Africa, Prof. Trevor Letcher, Chairman of the Organizing Committee and Prof. Joshua Jortner, President of IUPAC.

attended by the President of IUPAC, the eminent chemist, Prof. Joshua Jortner of Israel and the Secretary General, Dr Ted Becker.

Financial support for the conference came from many sources including the American Chemical Society, whose President, Prof. Paul Walter, and Director of the Office of International Activities, Dr J. Malin, attended the conference.

The 12 plenary and two keynote lectures were the highlights of the conference. One hundred and thirty-five oral presentations in the form of parallel sessions were also given and two hundred and fifty posters were presented in two sessions.

The conference was organized by a team of chemists from the University of Natal, Durban (UND) and local Universities and Technikon and was chaired by Prof. Trevor Letcher and Dr Bice Martincigh of UND. The theme of the conference was 'Chemistry for the Development of Africa in the 21st Century'. An exhibition of books, chemicals and equipment was presented and was well patronized by the delegates. The conference was honoured in having Beilstein, the well known German chemical information service company, display their products.

The conference was also host to a number of other meetings, including a special meeting of the International Organization for Chemical Sciences in Development (IOCD), an historic meeting of IUPAC and the African Association of Pure and Applied Chemistry (AAPAC), a session given by the Chemical and Allied Industries Association on Responsible Care: Managing Health, Safety and Environmental Performance in the Chemical Industry, and a special meeting on low cost chemical education for local educators.

**T. M. Letcher**

### 8th International Symposium on Solubility Phenomena 5–8 August 1998, Niigata, Japan

The city of Niigata, due north of Tokyo on the Sea of Japan, was the site of the *8th International Symposium on Solubility Phenomena*. The Symposium was chaired by Hideo Akaiwa, President of Gunma University, with Hiroshi Miyamoto of Niigata University as Vice-Chairman and Kyoshi Sawada of Niigata University as General Secretary. Joint organizers were IUPAC



**Opening ceremony of the 8th International Symposium on Solubility Phenomena. From left to right: Prof. Hideo Akaiwa, Chairman of the Symposium; Prof. John Lorimer, Representative of IUPAC; Prof. Kosuke Izutsu, President of the Japan Society for Analytical Chemistry; Prof. David Shaw, Chairman of the Commission on Solubility Data, IUPAC; Prof. Masaaki Arakawa, President of Niigata University.**

Commission V.8 (Solubility Data), The Japan Society for Analytical Chemistry and Niigata University. The Symposium also welcomed the sponsorship of IUPAC, The Science Council of Japan, The Chemical Society of Japan, The Japan Association of Solution Chemistry and the Japan Society of Coordination Chemistry. Financial support from The Ministry of Education, Science, Sports and Culture, Japan, four other foundations and two industries is acknowledged.

One hundred and fifty-four participants from 22 countries (Australia, Austria, Bulgaria, Canada, China, Czech Republic, Egypt, Finland, France, Germany, Hungary, Israel, Japan, Poland, Portugal, Russia, Sweden, Switzerland, Tunisia, Turkey, UK and USA) took part. Of the scientific participants, 102 were from Japan and 40 from elsewhere. There were also 12 accompanying persons. The Symposium was reported in the local Niigata newspaper, with a photograph and mention of IUPAC.

Two days before the Symposium, Niigata was hit by a record 25 cm of rain in a few hours, flooding the storm sewer system and making many streets impassable, including that in front of the Bandai Civic Hall, the venue of the Symposium. Fortunately, everything but the elevator had dried out in time, and the main disruptions were to the annual meeting of Commission V.8 preceding the Symposium and the opening mixer.

Those taking part in the opening ceremonies were Hideo Akaiwa, President, Gunma University and Symposium chair; Masaaki Arakawa, President, Niigata University; Kosuke Izutsu, President, The Japan Society for Analytical Chemistry; David Shaw, Chair of IUPAC Commission V.8; and Jack Lorimer, IUPAC representative.

Plenary lectures were given by George H. Nancollas (USA), 'The dissolution and growth of sparingly soluble inorganic salts: a kinetics and surface energy approach', and Kosuke Isutsu (Japan), 'Studies on the electrochemical approach to ion solvation'. Eight invited lectures were given by Mihaly Beck (Hungary), Hotoshi Watarai (Japan), Boris Spivakov (Russia), Pirketta Scharlin (Finland), Mark Salomon (USA), Heinz Gamsjäger (Austria), Jean-Claude Bollinger (France) and Masaaki Tabata (Japan). In addition, there were 37 contributed papers and 68 posters. H.L. Clever (USA) presented a special poster on the history of the Solubility Data Project. The invited lectures, contributed papers and posters covered the general areas of: chemistry of crystallization and dissolution; analytical chemistry related to phase transfer; thermodynamics and kinetics in solution; biomineralization; and compilation and evaluation of solubility data. Lectures and contributed papers were given in six sessions, and there was a very lively half-day poster session. It is planned to publish the plenary and invited lectures in *Pure and Applied Chemistry* under the editorship of Peter Fogg (UK).

Participants enjoyed an evening reception and the Symposium banquet, as well as a rainy and foggy half-day excursion to Yahiko Shrine and Mountain followed by a seaside barbecue. Accompanying persons were well looked after, with tours to a wealthy farmer's house and of Niigata City, as well as taking part in the traditional Japanese arts of flower arranging and the tea ceremony.

The organizers are to be congratulated on providing an excellently organized meeting that provided valuable new information on many aspects of solubility phenomena. The informal, friendly atmosphere during both the scientific meetings and social events left the participants with a deep appreciation of Japanese hospitality.

**J. Lorimer**

## The 14th IUPAC International Conference on Physical Organic Chemistry

The 14th IUPAC International Conference on Physical Organic Chemistry (ICPOC-14) was held from the 16th



**Opening Ceremony of the 14th IUPAC Conference on Physical Organic Chemistry.** From left to right: interpreter; Sergio Gargoni, Director Superintendent of the Institute Euvaldo Lodi; Francisco E. Viera, General Director of the Foundation of Science and Technology of the State of Santa Catarina; Prof. Rodolfo Pinto da Luz, Rector of the Federal University of Santa Catarina; Prof. Eduardo Humeres, UFSC, Organizer of the Conference; Prof. Thomas T. Tidwell, representative of IUPAC; and Prof. Carlos Alberto Kuhnen, Director of the Center of Physical and Mathematical Sciences, UFSC.

to the 21st August 1998, in Florianopolis, Santa Catarina, Brazil, with an attendance of 260 people from 43 countries. With 14 meetings since 1972, ICPOC is one of the longest-running conferences sponsored by IUPAC, and has now met in Asia, New Zealand, the Middle East, North and South America, and Europe, and fulfills the IUPAC mandates of globalization and diversification.

The plenary lectures at the Florianopolis Conference illustrated the breadth of this field. By way of example, the keynote lecture by Professor Ronald Breslow (USA) 'The Hydrophobic Effect as a Mechanistic Tool' and others lectures by Professors Norma Nudelman (Argentina) 'The Role of Complexing Effects in Defining the Mechanisms of Some Organometallic Reactions', and Jose Riveros (Brazil) 'Recent Advances in the Energetics and Mechanisms of Gas Phase Ionic Reactions'. Other plenary lectures by K. Houk (USA), H. Iwamura (Japan), U. Tonellato (Italy), L. Radom (Australia), and D. Reinhoudt (the Netherlands), dealt with theoretical studies of molecules and reactions, reactions in aggregates, magnetic properties of radicals, and supramolecular chemistry.

The broad scope of the field has been presented in the Symposium-in-Print 'Physical Organic Chemistry for the 21st Century' (*Pure Appl. Chem.* 1997, 69, 211–292), and copies of this report were distributed at this meeting, as has been done already at Conferences in Italy, Japan, Belgium and the USA, in addition to Internet posting <<http://www.iupac.org>>.

The Florianopolis Conference had 216 scientific contributions which were submitted from 43 countries. The Chair of the National Committee was Professor Eduardo Humeres of the Universidade Federal de Santa Catarina, the host institution of the meeting. There were also Pre-conference and Post-conference Symposia in Mexico City and Puerto Iguazu (Argen-

tina), respectively.

Together, these meetings showed not only the worldwide dynamism of Physical Organic Chemistry, but also the strength and maturity of the chemical sciences in Latin America.

**Prof. Thomas Tidwell**