

News from the Extraordinary Session of the ICSU General Assembly, 25 April 1998, Vienna, Austria

The Extraordinary General Assembly of ICSU was held to consider proposed changes to the organization of ICSU as a result of an Assessment Report made by a group of eminent scientists. Given below are excerpts from the Summary of Proposals provided the members before the meeting and excerpts from the revised Statutes adopted by the General Assembly.

Recommendations for proposed action as a follow-up to the report on the assessment of ICSU

Introduction and summary of proposals

I. Introduction

The recommendations contained in this document are proposed by the Executive Board of ICSU as a result of

a wide consultation undertaken immediately following the 25th General Assembly. Specifically, the sources for this document are as follows.

- The recommendations in the Assessment Report (which itself was based on exhaustive consultations with ICSU family members).
- Responses from Members to the Assessment sent to Paris in April–May 1997.
- Recommendations of the January meeting of the Executive Board.
- Recommendations of the March meeting of the Standing Finance Committee.
- Recommendations of the March meeting of the Standing Committee on Membership, Structure and Statutes.
- Discussion by the Officers of ICSU in June.

II. Summary of proposals

- (a) ICSU's **name** to be changed to better reflect the organization's aims and membership.

(b) **Objectives:** somewhat expanded to better reflect today's reality.

(c) **Links with ICSU's Members and non-Members**

- Creation of the category of Multinational Scientific Member.
- Designated role for Ordinary Members of EB.
- Creation of Committee on National Participation.
- Creation of Committee on Union Participation.
- Encouragement of formation of national committees open to a variety of national organizations.

(d) **Governance Structure**

GA to remain essentially as is, however, there would be no need for an Assembly Finance Committee nor an Assembly Nominating Committee.

General Committee to be eliminated, and its function of priority setting and review transferred to a new Committee: Committee on Scientific Planning and Review (CSPR).

Executive Board to be enlarged to include six Officers and eight Ordinary Members (present EB has six plus six) and EB given additional responsibilities, with each person having specific duties.

Body of Officers to be given specific responsibilities and each person given a specific duty.

Secretariat to be slightly enlarged.

(e) **Priority setting and review process**

- Vice-President for Scientific Planning and Review.
- Committee on Scientific Planning and Review.

(f) **Grants**

- Elimination of automatic grants.
- Grants used as seed money in support of selected focused activities.

(g) **Interdisciplinary Bodies:** set up by the GA as either Scientific Committees, Programmes or joint initiatives with other bodies.

(h) **Science for Policy, Policy for Science**

- Increased responsibility to EB.
- EB to issue position papers when appropriate.
- Organization of forums for discussions involving national policy-makers.
- Standing Committees to be renamed (and some new ones created) as Policy Committees, addressing issues of policy and common concern for the well-being of science. These Policy Committees would be set up for 3-year periods, with the possibility of renewal by the GA.

Proposed Committees on:

- scientific planning and review (previously GC's duties);
- public understanding of science (new);
- governance (previously SCMSS);
- finance and fund-raising (previously SFC);

- National participation (new, although some aspects previously covered by OC);
- Union participation (new, although some aspects previously covered by GC);
- ethics and freedom in the conduct of science (previously SCFCS and SCRES);
- dissemination of scientific information (renaming of ICSU Press and its INASP, and including electronic publishing);
- developing countries (COSTED);
- the FSU and Central and Eastern Europe (COMSCEE);
- environment (ACE).

(i) **Voice and Outreach**

- Vice-President for External Relations;
- Creation of a Committee on the Public Understanding of Science;
- Dedicated staff person.

III. Recommendations for proposed action

1. ICSU's name

The name of the ICSU should be changed to reflect more accurately the type of organization it is:

ICS

INTERNATIONAL COUNCIL FOR SCIENCE

The organisation of International Scientific Unions and National and Multinational scientific bodies: formerly the International Council of Scientific Unions (ICSU).

CIS

CONSEIL INTERNATIONAL DES SCIENCES

L'organisation des Unions scientifiques et Institutions nationales et multinationales:

auparavant le Conseil International des Unions Scientifiques (CIUS).

The above recommendations were adopted by the General Assembly, with the exception of the change of the acronym by which the International Council for Science will be known. While the name change was accepted, the acronym will remain ICSU.

The following excerpts highlight the changes in statutes and governance resulting from the decisions taken at the General Assembly.

Statutes

I. Denomination and domicile

- 1 The International Council for Science, hereinafter called 'ICSU', is an international nongovernmental and nonprofit making scientific organization.
- 2 The International Council of Scientific Unions (ICSU) was created, following the dissolution of the International Research Council, in Brussels in 1931 where it had its first legal domicile. The name of the

Council was changed to ICSU: The International Council for Science at an Extraordinary General Assembly in 1998, but the acronym ICSU has been maintained. The present legal domicile of the ICSU is in Paris, France, where its Secretariat is located.

II. Objectives

3 The principal objectives of ICSU are:

- (a) to encourage and promote international scientific and technological activity for the benefit and well-being of humanity;
- (b) to facilitate coordination of the international scientific activities of its Scientific Union Members (see Statute 7) and of its National Scientific Members (see Statute 8);
- (c) to stimulate, design, coordinate or participate in the implementation of international interdisciplinary scientific programmes;
- (d) to act as a consultative body on scientific issues that have an international dimension;
- (e) to encourage the strengthening of human and physical scientific resources world-wide with particular emphasis on the developing world;
- (f) to promote the public understanding of science;
- (g) to engage in any related activities.

4 In order to further the attainment of these objectives ICSU may, whenever appropriate:

- (a) enter, through the intermediary of the national adhering organizations, into relations with the governments of their respective countries in order to promote scientific research in these countries;
- (b) cooperate with the United Nations and its agencies, and with other international intergovernmental or nongovernmental organizations;
- (c) provide, through suitable channels, information to interested parties and the public at large about progress in science and technology and its impact on society;
- (d) undertake actions to strengthen the well-being and effectiveness of science and scientists;
- (e) establish and promote programmes either within the ICSU family or in partnership with others.

The term 'National' as used in these Statutes and Rules of Procedure has no connotation other than denoting a Member admitted under the provisions of Statute 8.

5 In pursuing its objectives in respect of the rights and responsibilities of scientists, ICSU, as an international nongovernmental body, shall observe and actively uphold the principle of the universality of science. This principle entails freedom of association and expression, access to data and information, and freedom of communication and movement in

connection with international scientific activities, without any discrimination on the basis of such factors as citizenship, religion, creed, political stance, ethnic origin, race, colour, language, age or sex. ICSU shall recognize and respect the independence of the internal science policies of its National Scientific Members. ICSU shall not permit any of its activities to be disturbed by statements or actions of a political nature.

III. Membership

6 Each Member has the obligation to support the objectives of ICSU, uphold the principle of the universality of science, and meet its financial obligations as appropriate. Members shall normally adhere to ICSU in one of two categories:

(a) *Scientific Union Members, or*

(b) *National Scientific Members.*

7 A Scientific Union Member shall be an international nongovernmental organization devoted to the promotion of activities in a particular area of science and shall have been in existence for at least 6 years.

8 A National Scientific Member shall be a scientific academy, research council, scientific institution or association of such institutions. Institutions effectively representing the range of scientific activities in a definite territory may be accepted as National Scientific Members, provided they can be listed under a name that will avoid any misunderstanding about the territory represented, and have been in existence in some form for at least 4 years.

9 The scientists of more than one nation may form a scientific body (academy, research council, etc.) for application as a National Scientific Member. No organization of scientists may adhere through more than one national membership.

10 Exceptionally, any other grouping of institutions acceptable to ICSU may be admitted to membership in category a) or b) on a case by case basis.

IV. Associates

11 Each Associate has the obligation to support the objectives of ICSU, uphold the principle of the universality of science, and meet its financial obligations as appropriate. Associates shall adhere to ICSU in one of three categories:

- (a) National Scientific Associates
- (b) International Scientific Associates
- (c) Regional Scientific Associates

12 A National Scientific Associate shall be a scientific academy, research council or other comparable scientific organization that is potentially qualified, but not yet ready, for full national membership. National Scientific Associates shall normally be expected to apply for full membership after 6 years in this category.

In these Statutes and Rules of Procedure, international bodies are taken to mean those bodies to which appropriate organizations in all countries of the world are eligible to adhere.

13 An International Scientific Associate shall be an international nongovernmental organization in the natural sciences or an organization in a field cognate to those of ICSU, such as the humanistic, medical, social and technical sciences, whose association with ICSU is likely to be of mutual benefit or to advance the cause of science, and whose scientific activities do not fall primarily within the scope of a single Scientific Union Member. An International Scientific Associate shall have been in existence for at least 6 years. Such bodies shall not have voting rights.

14 A Regional Scientific Associate shall be a nongovernmental Scientific Academy, Science Council, or other scientific institution, to which scientists or scientific bodies from more than one nation adhere, whose association with ICSU is likely to be of mutual benefit and will facilitate the attainment of ICSU's objectives, and whose scientific activities do not fall primarily within the scope of a single Scientific Union Member. Such bodies shall not have voting rights.

V. Observers

15 A Member that has failed to fulfil its financial obligations (see Rule of Procedure 10.2) shall only have Observer status. Observers shall be expected to resume full membership in ICSU as soon as possible. Normally no Observer shall be allowed to remain so for more than 6 years.

VI. Decision-making bodies

16 The decision-making bodies of ICSU shall be:

- (a) The General Assembly
- (b) The Executive Board
- (c) The Officers

...

X. Officers

32 (a) The **Officers** of ICSU are:

- i. The President
- ii. the Vice-President for Scientific Planning and Review
- iii. the Vice-President for External Relations
- iv. the Secretary-General
- v. the Treasurer
- vi. the Past-President or President-Elect

(b) The Officers are responsible for the day-to-day affairs of ICSU between meetings of the Executive Board. They shall meet as often as is deemed necessary, normally twice a year.

(c) The **President** shall hold office until the end of the ordinary session of the General Assembly following his or her election, this Officer shall not be eligible for re-election unless he or she had assumed the office of President as a result of a vacancy arising from the inability of his or her predecessor to complete a full term;

(d) The **Vice-Presidents** shall hold office for one term of 3 years, nonrenewable,

(e) The **Secretary General** and the **Treasurer** shall hold office for terms of 3 years, renewable once;

(f) The **immediate Past-President** shall serve as an Officer for a period of 18 months following the termination of the period of office held as President, to be succeeded until the next General Assembly by the **President-Elect**.

Circular letter to the ICSU unions from SCRES: the Standing Committee on Responsibility and Ethics in Science. Oslo, 19 April 1998

The International Council of Scientific Unions (ICSU) decided at its General Assembly in Washington DC, 24–27 September 1996, to establish a Standing Committee on Responsibility and Ethics in Science (SCRES). This decision represented a shift of attention from the freedom of scientists and scientific pursuits to the responsibility of science and technology. The Norwegian Research Council (NFR) offered to fund the secretariat, which was placed in Norway, a country with a developed research–ethical tradition. The director of SCRES is a Swedish philosopher of science and logic (Kathinka Evers), the chairman of the committee is a Norwegian philosopher of science (Matthias Kaiser). The other members of the committee are prominent scientists in the fields of physics (Hu Qiheng, China), genetics (Jose Cantu, Mexico), genetics and philosophy (Philip Kitcher, USA), neurobiology (Jean-Didier Vincent,

France) and one legal specialist (Joseph Onek, USA).

The committee of SCRES intends to hold one meeting annually, each time in a different country. The first meeting took place in Oslo, Norway, 19–22 June 1997, by invitation from the Norwegian Academy of Science. The second meeting will be held in Beijing, China, 8–13 June 1998, by invitation from the Chinese Academy of Science and Technology (CAST). The main task of the Oslo meeting was to establish the precise role that SCRES should play in the future: What are its main goals? What does SCRES aim to produce? Who is the intended audience?, etc. The initial discussion focused on how the committee intends to operate, and how it should communicate with other ICSU members. A web-site has been opened:

<http://www.lmcip.jussieu.fr/icsu/SCRES/>

The issues that SCRES most urgently needs to deal with are here made public in order to invite comments, information, and generally useful ideas from other parties; notably (though by no means exclusively), ICSU member-units. SCRES directs itself to all scientific communities, obviously, but not to them alone: it is vital that SCRES also succeed in addressing the general public and those politicians who represent the general public. SCRES is supposed to function as a focal point of discussions both within and beyond the scientific communities. One of its most important tasks is to improve the public understanding of science, and of problematic issues with respect to responsibility and ethics in science.

There are a wide variety of ethical issues which are important to science today, and they are likely to increase in number and complexity in the future. These issues include problems both of an internal nature and of an external one. Internal problems affect the conduct of science itself and the freedom of scientific inquiry, such as plagiarism and limitations on access to data. External problems concern developments in science and their effects on society, such as research on the human genome, the environment, race and intelligence, gender stereotyping, gene manipulation, embryo research, and weapons research.

SCRES' primary task is to help the scientific communities formulate general codes of conduct for scientific research: to see where such guidelines have already been developed, and, in those areas where none have yet been formulated, to assist in filling these gaps. If these codes, or standards, are not followed in a specific case, there must be special justifying grounds for this omission; grounds that should, upon request, clearly be stated. One issue of interest will concern the reasons for an apparent absence of ethical/legal guidelines: whether it is intentional (and, if so, by what and whose intentions), to what particular problems the gap is due, etc. ICSU has the mechanisms for adopting resolutions,

and member-units may provide an entrée to many of the issues that SCRES needs to discuss.

So far, SCRES has found six topics especially provocative of problems of responsibility and ethics in science: (1) biotechnology and genetic engineering (e.g. cloning), (2) technology transfers with adverse environmental effects, (3) recent developments in the sciences of mind/brain, (4) standards for peer review and authorship in science, (5) the future of medical practice, and (6) quality assurance of scientific information on the Internet. Naturally, SCRES is open to further suggestions, and that is the main reason why we are writing this letter to you. We depend on scientists in all fields to inform us about ethical dilemmas, and perhaps about their possible resolutions. The committee has, for example, recently been faced with a concrete request from the Austrian embassy. They wish to know whether an international 'code of conduct' exists, that regulates the handling of biological material similar to the code of conduct for chemical weapons. SCRES knows of no such internationally valid code. There may be a lack of legislation and guidelines here, and we should be grateful if the appropriate ICSU member organizations and biological unions would contact us and give us their comments and suggestions.

We should also be interested in knowing about those of your meetings at which the presence of SCRES might be relevant and useful.

Thus with this letter we cordially invite you to inform us about

- (a) any ethical dilemma that you conceive within your particular field of science, and that you should like to bring to SCRES' attention,
- (b) any other view that you might have about SCRES: its structure, goals or methods, or anything else that you wish to comment on,
- (c) those of your meetings at which the presence of a representative of SCRES might be relevant and useful.

We look forward to hearing from you.

Yours sincerely,

Dr Kathinka Evers, Executive Secretary, SCRES, The Research Park, Gaustadalléen 21, 0371 Oslo, Norway, Tel.: +47 2295 8778/fax: +47 2295 8492.

In related news, the following item describes a new European Group on Ethics in Science and New Technologies

Following a decision of the European Commission, a European Group on Ethics in Science and New Technologies will replace the Group of Advisers on the Ethical Implications of Biotechnology, set up in 1991. Delivering opinions on ethical implications of 'science and new technologies' in the framework of Community

legislation the new Group will have a broader mandate. Above the ethical implications of biotechnology, other fields such as the new information technologies, science and research will be covered. The new member, Prof. Ina Wagner from Austria, will be responsible for the fields 'Sociology-Informatics, Information Society'. Appointed for a period of three years, the 12 members will be completely independent of any political, economic and national interest and of the Commission. Their personal abilities and experience guarantees the multidisciplinary and multicultural composition of the group. The Commission will ask the European Group on Ethics in Science and New Technologies to deliver opinions, but the Group will also have the opportunity to adopt opinions on its own initiative. The Commission will appreciate a close co-operation with other European Union institutions.

Federation of European Chemical Societies, Annual Report, 1997

The Federation of European Chemical Societies is a voluntary association, the object of which is to promote cooperation in Europe between those nonprofit-making scientific and technical societies in the field of chemistry whose membership consists largely of individual qualified chemists and whose interests include the science and/or practice of chemistry. It was founded in 1970.

A powerful voice for chemists and chemistry: The Federation of European Chemical Societies (FECS), with the European Communities Chemistry Council (ECCC), through about 50 member societies together represent some 200 000 individual chemists in academia, industry and government in Europe.

The Structure of FECS: The scientific work of FECS is carried out through its Divisions (Analytical Chemistry, Food Chemistry, Chemical Education) and Working Parties. The EUCHEM Committee, operating within FECS, organizes high-level conferences and advises the European Science Foundation on its chemistry conferences. The European Communities Chemistry Council, reconstituted in 1996 in association with FECS, was founded in 1973, its primary object being to act in an advisory or representative capacity in matters relating to the science and practice of chemistry, particularly in relation to the European Commission.

The FECS Lecture 'Farbenspiel einer Ionenpumpe' (Colour changes of an ion pump) was given by Prof. Dieter Oesterhelt, Max-Planck-Institut für Biochemie, in September in Vienna during the 100th anniversary meeting of the Gesellschaft Österreichischer Chemiker.

The Award for Service to FECS was presented to Prof. Erno Pungor, Hungary, one of the founders and former Chairman of the Working Party on Analytical Chemistry.

The General Assembly of FECS met on 11–12 September in Vienna as the guests of the Gesellschaft Österreichischer Chemiker.

Analytical chemistry

Chairman: Prof. L. Niinisto, Helsinki University of Technology, Kemistintie 1, FIN-02150 Espoo, Finland. Tel.: +3589 4512600, fax: +3589 462373, e-mail: lauri.niinisto@hut.fi

Plans were made to launch the textbook on *Analytical Chemistry* in March 1998. A Who's Who in analytical chemistry in Europe is being prepared to help the ACTIVE and other student exchange programmes. Eurocourses planned include a joint Euro-American-Japanese course in Vienna in July 1998, courses on Quality matters and on Micro total analysis systems.

Much work is being undertaken in quality assurance and accreditation. The history of the Division will be published to mark its 25th anniversary in 1997.

The proceedings of Euroanalysis IX held in Bologna in 1996, with 700 participants, have been published in *Annali di Chimica*, the *Journal of Analytical and Environmental Chemistry*, Vol. 87, 1997. Euroanalysis X will be held in Basle on 6–11 September 1998.

Prof. L. Niinisto, past chairman of the Division, took over the Chairmanship in October, following the untimely death of Prof. Robert Kellner, Chairman of the Division since 1993 and an active participant for over 20 years.

Food chemistry

Chairman: Dr R. Battaglia, Migros Laboratories, Postfach 266, CH-8031 Zurich, Switzerland. Tel.: +41 1277 3140, Fax: +41 1277 3170, e-mail: Reto.Battaglia@mgb.ch

Conferences organized during 1997 included: 'Alimentacao Mediterranea' in Algarve in March; 'Bioavailability III' in Wageningen in May; 'In Vino Analytica Scientia' in Bordeaux in June; Laboratory Quality Assessment Issues Roundtable at AOAC meeting in US in September, 'EUROFOODCHEM IX' in Interlaken in September. The round table on Laboratory Quality Assessment Issues at the AOAC international meeting in San Diego continued the development of a close relationship between the Division and AOAC International.

Conferences in 1998: 'Structure and Functionality of Food Products', in Mrogowo in May; international symposium on immunology 'Chemical and Clinical Problems of Food Allergy', in Taormina in October. The publication Food Chem Window provides a compendium of student exchange programmes involving 36 research groups in 17 countries.

The second edition of the successful *Who's Who in Food Chemistry—Europe* will be extended to include relevant consulting/analytical/service laboratories.

Chemical education

Chairman Dr J.M.F. Gagan, Open University, 70 Manchester Road, Chorlton-cum-Hardy, Manchester M21 9UN, UK. Tel.: +44 (0)161 861 9823, fax: +44 (0)161 956 6811, e-mail: jm.gagan@open.ac.uk

The 4th European Conference on Research in Chemical Education (ECRICE) was held in York in September. Plans were made for the 1st European Conference in Chemical Education (ECCE) in Budapest in September 1998 for practitioners of chemical education at degree level. The 1998 FECS Lecture entitled 'Using the results of chemical education research' will be delivered by Prof. Alex H. Johnstone, University of Glasgow, Scotland, on 28 August during ECCE.

In 1998 a special edition of the *International Journal of Science Education* will publish papers illustrating current chemical education research activity in Europe.

Chemistry and the environment

Chairman: Dr A. Astrup Jensen, dk-TEKNIK Energy and Environment, 15 Gladsaxe Møllevej, DK-2860 Søborg, Copenhagen, Denmark. Tel.: +45 39 555904, fax: +45 39 696002, e-mail: aajensen@dk-teknik.dk

FECS societies have demonstrated increased interest in FECS activity in chemistry and the environment.

Plans were made for the conference 'Atmospheric Chemistry and Air Pollution', in Copenhagen on 26–28 August 1998. There is cooperation with the Italian Chemical Society in the planning of symposia for the conference 'Water in the Mediterranean Area, Conference on Quality and Quantity of Mediterranean Water Resources' in Sardinia on 11–18 October 1998.

An association with the journal *Environmental Science and Pollution Research* assists publicity—URL: <http://www.ecomed.de/naturw/bereiche/titel/espr/welcome.htm>

Plans were made to compile major textbooks in environmental chemistry. Contacts were developed with the European Environment Agency.

Computational chemistry

Chairman: Dr G. Naray Szabo, Hungarian Chemical Society, H-1027 Budapest, Fő u 68, Hungary. Tel.: +36 1201 6883, fax: +36 1201 8056, e-mail: naray@para.chem.elte.hu

The 2nd European Conference on Computational Chemistry (EUCCO-CC2) was held in Lisbon in September, with about 200 participants. Plans are being made to organize a series of biannual summer schools on

computational chemistry, the first being in Perugia, Italy in 1999.

Organometallic chemistry

Chairman: Prof. S. Pasykiewicz, Warsaw, Technical University, Faculty of Chemistry, Koszykowa 75, PL-00-662 Warsaw, Poland. Tel.: +48 22 6286599, fax: +48 22 6605462, e-mail: pasyn@ch.pw.edu.pl

The XIth FECCHEM Conference on Organometallic Chemistry was held in September in Prague with 400 participants from 35 countries, including 120 students. The booklet *Organometallic Research Centres in Europe* contains details of over 2000 European organometallic chemists: <http://www.vub.ac.be/ond/aosc/eoc/default.htm>

History of chemistry

Chairman: Prof. H.A. Deelstra, University of Antwerp (UIA), Universiteitsplein 1, B-2610 Wilrijk, Belgium. Tel.: +32 38202 715, fax: +32 38202 734, e-mail: Labrom@uia.ac.be

The third edition of the highly successful *Guide for Museums with Collections on History of Chemistry and of Pharmacy* has been published. Preliminary plans are being made for publishing a history of European chemical societies.

Chemistry in the conservation of the cultural heritage

Chairman: Prof. F. Piacenti, Università di Firenze, Dipartimento di Chimica Organica 'Ugo Schiff', Via Gino Capponi 9, I-50121 Firenze, Italy. Tel.: +39 55 2757 647, fax: +39 55 2757 660.

A programme has been launched to compile a 'Data Bank on Conservation Procedures of Stone, Metals Paintings'. Forms for this purpose have been published in *Science and Technology for Cultural Heritage*, 6(1), 1997, edited by the CNR, Rome. A first set of data on the conservation of monumental buildings are compiled in an interactive databank. Conservation organizations in Italy have adopted the forms.

Electrochemistry

Chairman: Prof. J.W. Schultze, Heinrich-Heine Universität-Düsseldorf, Institut für Physikalische Chemie und Electrochemie, D-40225 Düsseldorf, Germany. Tel.: +49 211 811 4750, fax: +49 211 811 2803.

Plans were made for a meeting on 'Electrified Interfaces' in Porto on 5–10 July 1998, to consider the structure and dynamics of the solid/electrolyte interface. Contacts were developed with the European Commission to discuss relevant aspects of the Framework Pro-

gramme V. The development of a Eurocurriculum on electrochemistry is underway.

European Communities Chemistry Council

Chairman: Prof. F. Alderweireldt, University of Antwerp, Department of Chemistry, Groenenborgerlaan 171, B-2020 Antwerp, Belgium.

Secretary: Ms E.K. McEwan, Royal Society of Chemistry.

The ECCC comprises national societies, both learned societies and professional associations, representing 150 000 chemists, of whom 50% are under 35 years of age.

The designation European Chemist—EurChem

The professional designation, European Chemist (EurChem), is open to members of FECS member societies. European Chemist denotes academic qualification plus approved professional experience. There were 656 European Chemists at the end of 1997. The category-A schedule of qualifications lists the approved academic qualification requirements for candidates. Schedules of category-B and -C level qualifications are also maintained.

PhD training

Collaboration with the CEFIC led to a highly successful joint Seminar on PhD training in chemistry in Europe, with contributions from senior representatives of academia and industry and the European Commission. Participants considered how the providers of PhD training could best respond to the challenges of the future.

AllChemE

AllChemE mounted a highly successful Workshop on *University/Industry interaction—meeting the needs of the future through chemistry and chemical engineering*. It provided a valuable opportunity for chemists and chemical engineers to share information on good practice and highlighted innovative ways of matching post-graduate training with the research needs of a wide spectrum of industry.

The AllChemE report *Chemistry: Europe and the Future* was translated and published in French, German and Italian. Subtitled 'Science and technology to improve the quality of life in Europe', it aims to influence the future strategies of the European Commission and national bodies. It illustrates research activity in health and agriculture, new materials, energy and protection of the environment, likely to lead to inventions of high significance.

AllChemE. Alliance for Chemical Sciences and Technologies in Europe, comprising FECS/ECCC, CEFIC, CERC3 (Chairmen of European Research Councils Chemistry Committees), COST Technical Committee for Chemistry, EFCE (European Federation of Chemical Engineering), coordinates activities of mutual interest and promotes chemistry/chemical engineering in Europe.

Organization for the Prohibition of Chemical Weapons (OPCW)

The regulation of the international transfer of chemicals by the chemical weapons convention

The Chemical Weapons Convention prohibits the transfer, directly or indirectly, of chemical weapons to anyone. It also bans the use of chemical weapons and any involvement in preparations to use chemical weapons. In addition, the Convention regulates the production, processing, consumption, and—to some degree—the international transfer of toxic chemicals which can be converted into or used to produce chemical weapons. The majority of these chemicals are dual-use compounds, i.e. they have legitimate commercial applications. It follows from this that a substantial segment of the global chemical industry could be affected by the Convention's provisions. Compliance with the provisions of the Convention is monitored by a new international organisation, the Organisation for the Prohibition of Chemical Weapons (OPCW), based in The Hague, the Netherlands. Each State Party must also establish or designate a National Authority, which will be entrusted with ensuring compliance within its own territory with the obligations assumed.

For an adequate understanding of the Conventions scope, it is important to emphasise that, in accordance with its purposes, the expression 'chemical industry' comprises all chemical, pharmaceutical and agrochemical enterprises and other related sectors, which produce, process and/or consume those chemicals identified in the Convention for the purposes of declarations and routine inspections. This means that not only those firms or plants grouped within the traditional chemical industry sector may be subject to the Convention's provisions. A considerable number of companies from other industrial sectors will probably also be affected by the obligations arising from the Convention, and should therefore prepare themselves adequately if this is the case.

Chemicals to be monitored

The chemicals which are explicitly specified in the Convention for monitoring purposes cover a wide range and

include chemical warfare agents, as well as key precursors and more distant precursors. These chemical compounds or families of compounds are listed in the three Schedules of the Convention's Annex on Chemicals. Each of these Schedules has a different system of information and inspection requirements which is specified in the Verification Annex itself. These requirements are more stringent in the case of those chemicals which are deemed to pose a greater risk. The Verification Annex also includes restrictions on the international transfer of scheduled chemicals which are summarised below. Basic information on the three Schedules is as follows:

- **Schedule 1** includes toxic chemicals and some precursors, and groups of these, with very limited or no commercial use. It includes known chemical weapons agents such as sulphur mustards, nitrogen mustards, lewisites, and the nerve agents tabun, sarin, soman and VX.
- **Schedule 2** includes toxic chemicals and precursors, as well as groups of chemicals which have limited commercial use. This Schedule includes chemicals with some degree of warfare potential, as well as several precursors, or groups of compounds, which may be part of the final stages of production of chemical weapons. An example of the chemicals included is thiodiglycol, an immediate precursor of sulphur mustards, which is used in several industrial processes such as the production of inks, metal plating, etc.
- **Schedule 3** includes, dual-use chemicals produced in large volumes, for industrial activities, and precursors which may be part of the initial stages of production of chemical agents. This category comprises highly toxic gases such as phosgene and hydrogen cyanide which were used as chemical warfare agents during World War I, but which at present are produced in large quantities for industrial and commercial use.

Restrictions on the international transfer of scheduled chemicals

The Verification Annex of the Convention establishes the following restrictions on the international transfer of scheduled chemicals:

Schedule 1 chemicals:

Export:

- Exports to States not Party to the Convention are prohibited;
- Exports can, be made to other States Parties only for justified non-prohibited (research, medical, pharmaceutical or protective) purposes and within a quantity which allows the purchasing State Party to keep an aggregate amount of such chemicals equal

to or less than one tonne at any given time, and for such purposes.

Import:

- Imports from States not Party to the Convention are prohibited;
- Imports from other States Parties for justified non-prohibited (research, medical, pharmaceutical, or protective) purposes are allowed, and only within a quantity which allows the importing State Party to keep an aggregate amount of such chemicals equal to or less than one tonne at any given time, and for such purposes.

Other requirements:

- Any transfer of a Schedule 1 chemical from one State Party to another is required to be notified by both States Parties to the Technical Secretariat (OPCW) at least 30 days before the planned transfer;
- Every year, each State Party has to make a detailed annual declaration on transfers during the previous year. This declaration shall be submitted not later than 90 days after the end of that year and shall include specific information on each Schedule 1 chemical that has been transferred;
- Schedule 1 chemicals that have been transferred shall not be re-transferred to a third State.

Schedule 2 chemicals

Export:

- Three years after the entry into force of the Convention, the export of Schedule 2 chemicals to States not Party will be prohibited;
- During the interim three-year period, each State Party shall adopt the measures necessary to ensure that transfers of Schedule 2 chemicals to States not Party shall be used only for purposes not prohibited by the Convention. Such measures shall include requesting a certificate from the recipient State, which has to state, *inter alia*, that the transferred chemicals will be used only for purposes not prohibited by the Convention; that they will not be re-transferred; the types and quantities of the chemicals; their end-use(s); and the name(s) and address(es) of the end-user(s).

Import:

- Three years after the entry into, force of-the Convention, the import of Schedule 2 chemicals from States not Party will be prohibited.

Other requirements:

- States Parties are required to make initial and annual declarations on aggregate national data for the previous calendar year on: (a) the quantities of each Schedule 2 chemical produced, processed, consumed, imported and exported; and (b) a quantitative specification of import and export for each country involved.

Schedule 3 chemicals

Export:

- Each State Party shall adopt the measures necessary to ensure that transfers of Schedule 3 chemicals to States not Party shall be used only for purposes not prohibited by the Convention. Such measures shall include requesting from the recipient State a certificate which has to state, inter alia, that the transferred chemicals will be used only for purposes not prohibited by the Convention; that they will not be re-transferred; the types and quantities of the chemicals; their end-use(s); and the name(s) and address(es) of the end-user(s);
- Five years after the entry into force of the Convention, the need to establish other measures regarding transfers of Schedule 3 chemicals to States not Party will be considered.

Other requirements:

- States Parties are required to make initial and annual declarations of aggregate national data for the previous calendar year on: (a) the quantities of each Schedule 3 chemical produced, imported and exported; and (b) a quantitative specification of import and export for each country involved.

Further requirements

The Convention also establishes further requirements in relation to activities to be carried out with scheduled chemicals, as well as with other chemicals which are widely used in industry. These requirements—in particular, those related to the production, processing, and consumption of the above-mentioned chemicals—should be taken into account as complementary information when the international transfer of such chemicals is being considered. These requirements are included in the Verification Annex of the Convention. Some comments on them follow:

Schedule 1 chemicals: Large-scale production of these chemicals is prohibited, and any existing stocks exceeding one tonne must be destroyed. However, each State Party may, at any given moment, retain a total of up to one tonne of these chemicals for the development of means of protection and for medical, pharmaceutical or research activities. The production of these chemicals is authorised only for research, medical, pharmaceutical or protective purposes, and shall be carried out only in a single small-scale facility approved by the State Party, and in other facilities as set forth in Part VI of the Verification Annex, in the context of restrictions which are clearly established in the Convention. These facilities are subject to systematic inspections by the Technical Secretariat of the OPCW

Schedule 2 chemicals: Those companies which produce, process or consume chemicals listed in Schedule 2 in annual amounts surpassing the thresholds established in the Convention must declare to their National Authority both the production facilities and the production volumes. Declared plant sites that comprise one or more plants which, during any of the previous three calendar years, have produced, processed or consumed Schedule 2 chemicals above inspection thresholds, or which are anticipated to produce, process or consume Schedule 2 chemicals above inspection thresholds in the next calendar year, are liable to inspections from the Technical Secretariat of the OPCW

Schedule 3 chemicals: The Convention also includes in this category production thresholds which, when surpassed, render declarable the facilities which produce them. In addition, declared facilities which produce Schedule 3 chemicals in excess of inspection thresholds are subject to random inspections.

The Convention also includes provisions for another group of chemicals which is of considerable importance to the chemical industry: the group of (unscheduled) 'discrete organic chemicals' (DOCs). These are understood to mean any chemical belonging to the class of chemical compounds consisting of all compounds of carbon which are identifiable by means of their chemical name, structural formula, if known, and by their Chemical Abstracts Service registry number if assigned.

In the case of such DOCs, production facilities must be declared whenever annual production surpasses 200 tonnes of all DOCs produced together. The exceptions are those facilities dedicated exclusively to the production of hydrocarbons or explosives, and the definition of DOCs itself makes an exception for all oxides, sulphides and metal carbonates. The First Session of the Conference of States Parties to the Convention, which met in The Hague in May 1997, also agreed with the recommendations of the Preparatory Commission for the OPM, that polymers and oligomers of all compounds of carbon, are excluded from these declarations. Should these compounds contain phosphorus, sulphur or fluorine, the declaration threshold for each chemical will be 30 tonnes per year. The verification of these facilities will commence at the beginning of the fourth year after the entry into force of the Convention (entry into force was 29 April 1997), unless the Conference of the States Parties decides otherwise at its regular session in the third year after entry into force.

More information is available at OPCW's Web Site, URL: <http://www.opcw.nl/ptshome.htm>

IOCD Annual Report

International Organization for Chemical Sciences in Development

Programme Activities, 1998

For up-to-date Information about IOCD activities, please see the Web Site: www.iocd.unam.mx

(1) IOCD's vision and mission.

After reviewing 17 years of IOCD activities, from its creation in 1981 to the present, the IOCD's principal officers prepared the following vision and mission statements:

The IOCD Vision: We envision IOCD as a global network of scientists committed to building capacity in the chemical sciences in developing countries and to employing this capacity in practical undertakings that contribute to the well-being of the people in these countries.

IOCD's mission is to provide a vehicle for the ethical concerns of distinguished scientists wishing to assist their fellow chemical and biological scientists in developing nations, to utilize their resources and capacities in practical ways that will serve the needs of their communities, and to influence these scientists' career decisions based upon appropriate originality, entrepreneurialism and practicality.

(2) Activities of the IOCD Working Groups.

IOCD pursues its mission through four working groups, each focused on a specific field: *Plant Chemistry*, *Tropical Diseases*, *Environmental Analytical Chemistry*, and *Fertility Regulation*.

These working groups:

- organize symposia in developing countries that serve as catalysts for change by bringing together commercial, academic and basic scientific researchers to focus on practical solutions to developing world needs;
- provide opportunities for developing world scientists to work within world renowned laboratories, for short periods, in order to gain experience with modern methods and techniques;
- carry on workshops within developing world laboratories, in order to enhance proficiency in relevant techniques by providing hands-on research experience.

(a) Joint IOCD/IUPAC Working Group on Environmental Analytical Chemistry.

This working group convened the Workshop on Environmental Analytical Chemistry in Montevideo, Uru-

guay, from 19 to 22 March 1998 for between 20 and 30 analytical chemists in Latin American countries. The workshop took place in association with CHEMRAWN XI (Regional Conference on Environmental Chemistry for Latin America) that also convened in Montevideo from 15 to 21 March 1998. A description of the workshop (lecturers and topics) and CHEMRAWN may be requested from IOCD (see also p. 99 of this issue).

Funding of this workshop was made possible through grants from IUPAC and the Chemical Manufacturers Association (CMA), enabling the IOCD to cover the costs of air travel, hotel and meals of many of the participants. IOCD will also meet the cost of air travel and hotel and meals for several of the lecturers, although many have received support from their institutions or governments. IOCD also received a grant from UNESCO for reprinting of the 700-page Spanish language version of the EPA/FDA Central American Pesticide Laboratory Training Manual for distribution to analytical chemists in Latin America.

(b) IOCD Working Group on Plant Chemistry.

As a cosponsor with CYTED, a Latin American nongovernmental organization, IOCD organized the International Symposium on the Chemistry, Biological and Pharmacological Properties of Medicinal Plants from the Americas on 23–26 February 1997 in Panama City, Panama. Over 200 participants from 29 countries gathered to hear updated information concerning different aspects of research on phytochemistry and pharmacology of plants in North and South America. Prior to the symposium, a workshop on chemical screening methods for plants was held in Lima, Peru for natural products chemists from Latin American countries. IOCD will publish the proceedings of the symposium as a book through Harwood Publishing Company within one year. (The proceedings of the previous international symposium organized by this working group in Zimbabwe in 1996 are available as a book: *Chemistry, Biological and Pharmacological Properties of African Medicinal Plants*. University of Zimbabwe Press, Harare, Zimbabwe. Price: US\$50.00.)

Reviewing this book in the *Journal of Natural Products* (Vol. 60, no. 20, 1997), Dr Maurice Iwu of Walter Reed Army Institute of Research states that this book 'will remain a reference for a long time.'

Throughout 1998, the IOCD Working Group on Plant Chemistry will collaborate with other organizations in supporting symposia and workshops for natural products chemists in developing countries. With CYTED, IOCD is co-sponsoring the Workshop on Methodologies in the Search for New Lead Compounds from Plants (28 September—2 October 1998) in Santiago, Chile. IOCD expects to provide travel grants to three or four young chemists from Latin American countries as participants in the workshop.

At the 7th International Chemistry Conference in Africa (ICCA), 6–10 July 1998, in Durban, South Africa, IOCD is organizing a satellite symposium with two noted African research scientists, the President of IOCD, Dr Jean-Marie Lehn of Strasbourg and Paris, France, and the Chairman of the IOCD Plant Chemistry Working Group, Dr Kurt Hostettmann, Lausanne, Switzerland, who will review 10 years of research into African medicinal plants.

In a third collaboration in 1998, IOCD is co-sponsoring with ARRT International, Inc., publisher of the *Screening Forum*, the international conference CYPRUS 1998, on 'New Technologies and Frontiers in Drug Research,' 4–8 May 1998, in Limasol, Cyprus. The conference addresses emerging technologies in drug discovery with special attention to their impact on the chemical and biochemical sciences. ARRT International Inc. is meeting the full costs (registration fee and hotels and meals) for five scientists from developing countries (to be selected by IOCD) to participate in the conference. The complete programme of CYPRUS '98 is available from IOCD.

(c) IOCD Working Group on Tropical Diseases.

The Chairman of this working group, Dr Fred Opperdoes, Research Unit for Tropical Diseases, Brussels, Belgium, is also leader of COST-B9 'Action on Chemotherapy of Protozoal Infections.' COST is the acronym for the European Cooperation in Scientific and Technical Research, a programme of cooperative research among European universities that is funded by the European Union. At the request of Dr Opperdoes, the group of five European laboratories co-operating as COST-B9 have extended observer status to the IOCD Working Group on Tropical Diseases with the expectation that IOCD will facilitate participation of chemists from developing countries in COST programmes.

As the first collaborative activity between COST and IOCD, IOCD will convene a workshop on medicinal chemistry from 4 to 6 June 1998. This will follow the first COST-B9 Congress on Antiprotozoal Chemotherapy that meets 31 May to 3 June 1998, in Sierra Nevada, Granada (Spain). The medicinal chemistry workshop will help chemists from developing countries who are specialists in synthetic organic chemistry to acquire knowledge of the principles of contemporary medicinal chemistry and therefore become capable of moving from mere synthesis of an analogue of a lead compound that someone else has identified, to actual identification of that lead compound itself. A grant from the National Academy of Sciences and the American Chemical Society ensures that travel costs are covered so that chemists from developing countries may participate in this workshop. Instruction will be provided by both IOCD and COST scientists, including Dr Lester A. Mitscher, University of Kansas, a member of the Senior Advisory

Council of IOCD and a Titular Member of the Commission on Training and Development, Chemistry and Human Health Division, IUPAC.

(3) IOCD support of biodiversity exploration and conservation.

In June 1994, IOCD responded to a request from the National Academy of Sciences to assist Dr Thomas Eisner of Cornell University in establishing a global organization for promoting exploration and conservation of biodiversity resources in developing countries. Dr Eisner is convinced that only a focused global effort can hope to stop the rapid disappearance of these critical resources under the continuing pressures of development. Under a grant from the MacArthur Foundation, IOCD obtained the services of Dr Charles Weiss, the former Science and Technology Adviser of the World Bank, to form the Biotic Exploration Fund as an instrument through which IOCD can collaborate with developing countries in building local scientific and entrepreneurial capacities needed for chemical and biological exploration of biodiversity, including eventually establishing production capacities for commercialization of findings from explorations.

South Africa. In early 1996, South Africa was the first country to request IOCD assistance through the Biotic Exploration Fund. IOCD used funds from the MacArthur Foundation grant and additional grants from UNESCO and the National Academy of Sciences to send Dr Weiss and another IOCD scientist to South Africa to work for six weeks with the South African Council for Scientific and Industrial Research (CSIR). This joint project preparation mission prepared a business plan for the CSIR that called for establishment of major commercial enterprises based on outcomes of exploration with biodiversity resources in South Africa.

Nepal. In 1997, the Royal Nepal Academy of Science and Technology requested IOCD to assist them in building local capacity for bioprospecting in Nepal. A grant from the Novartis Foundation for Sustainable Development enabled IOCD to respond to this request. In September 1997, IOCD scientist, Dr Maurice Iwu, traveled to Nepal to join members of the Nepal Traditional Medicine Promotion Group (TWPG) in a joint mission of several weeks.

While in Nepal, Dr Iwu and his colleagues:

- 1 conducted an initial workshop with the Traditional Medicine Promotion Group to explain the process of drug discovery and outline the operations and policies for bioprospecting;
- 2 visited relevant research laboratories and local private pharmaceutical, cosmetic and other manufacturing facilities based on biodiversity resources in Nepal;

- 3 interviewed government officials concerned with access to biodiversity resources, scientific research, and promotion of biotechnology business;
- 4 obtained information about traditional healers in order to learn about their resources and determine their capabilities;
- 5 discussed a specific local action that TWPG will implement. (IOCD has given a small grant to the TWPG for implementation of this local action and urged TMPG to recognize it must be a basic component of the long-term programme for developing the capacity and infrastructure in Nepal for bioprospecting).

Kenya. Also in 1997, the International Centre for Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya, has requested IOCD assistance in preparing a bioprospecting programme focused on insect diversity. IOCD has allocated funds in a 1997 grant from the Na-

tional Academy of Sciences and the American Chemical Society to the costs of a joint project preparation mission in Kenya for three weeks in June 1998.

In all its work through the Biotic Exploration Fund, IOCD is committed to dealing equitably and respectfully with indigenous peoples and to being guided by the following policy:

IOCD intends to honour the letter and spirit of the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other international, regional and national laws and policies concerning biodiversity.

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