

# THE ORGANIZATION AND FUNCTIONS OF THE INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (I.U.P.A.C.)

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## CONSTITUTION

The International Union of Pure and Applied Chemistry is a voluntary organization. Its chief purpose is to establish and promote co-operation between the Chemical Societies of the member countries, and to co-ordinate their scientific and technical activities. The governing body of the Union, its Council, is composed of delegates appointed by national agencies concerned with fundamental and applied chemistry in the participating countries. These agencies, which represent the chemical interests of the country concerned (e.g., Comité National de la Chimie, under the aegis of the Académie des Sciences, France; British National Committee for Chemistry of the Royal Society, England; Division of Chemistry and Chemical Technology of the National Research Council, U.S.A.; The Academy of Sciences in Moscow, U.S.S.R.) are the adhering bodies to I.U.P.A.C. At present there are 37 national adhering bodies (see p. 9).

Internationally, the importance of chemistry has long been recognized and during the fifty years preceding the First World War there were many attempts at collaborative action. The Union, as we know it today, originated in London in November 1918, through the joint action of Sir William Pope, then President of the Society of Chemical Industry, and Paul Kestner, at that time President of the Société de Chimie Industrielle. It was formally constituted at a meeting in Rome in June 1920.

## FUNCTION

The Union is essentially concerned with those aspects of chemistry, both pure and applied, about which international agreement or uniform practice is desirable. Examples are nomenclature, atomic weights, symbols and terminology, physicochemical constants, and certain methods of analysis and assay. At the biennial conferences of the Union reports on such subjects are presented for discussion by the appropriate Commissions dealing with them and, after approval, are published.

Thus, the Union, through its Commissions, offers an international forum where outstanding specialists in many fields of interest can meet to exchange opinions and experiences with the object of reaching agreements which will promote the progress of chemistry throughout the world. The adoption of these agreements or recommendations is not mandatory for the adhering countries and remains voluntary. Nevertheless, the expert

judgment which goes into them, and the care taken to consider all points of view has usually led to their general acceptance.

The Union also sponsors international congresses and symposia organized by its Sections or Commissions in their respective fields of interest. A general international Congress was held in New York City in 1951, in conjunction with the Diamond Jubilee meetings of the American Chemical Society. In Sweden in 1953, there were held a Congress of Physical Chemistry, and Symposia on Macromolecules and on the Chemistry of Wood and its Constituents. The XVIIIth International Conference and the XIVth International Congress of Pure and Applied Chemistry (Organic Chemistry) took place in Zurich in 1955. The XVth International Congress dealing with Analytical Chemistry was held in 1956 in Lisbon. The XIXth International Conference and the XVIth International Congress were held in Paris in 1957 following the Centenary Celebration of the Société chimique de France. The Congress covered the subjects of Physical, Inorganic and Organic Chemistry. The XXth International Conference and XVIIth International Congress of Pure and Applied Chemistry were held in Munich between August 25 and September 6 1959. The XVIIth International Congress dealt mainly with Inorganic Chemistry, but also with Biological Chemistry. The XVIIIth International Congress will be held in Montreal, at the invitation of the Canadian National Research Council in 1961.

## MECHANISM

The structure of the Union is shown on p. 10. The executive agency of the Council is the Bureau, composed of the President, two past Presidents, the Secretary-General, the Treasurer, the Presidents of the six Sections, three Vice-Presidents (elected by the Council) and eight Members elected by the Council. Thus the total membership of the Bureau is now 22. The Executive Committee of seven members, consisting of the President, Secretary-General, Treasurer and four members of the Bureau acts between meetings of the Bureau.

At the XXth Conference the following Executive Committee was appointed:

W. A. Noyes, Jr., President of the Union, The University of Rochester, Rochester 20, New York (U.S.A.)

Sir Charles Dodds, Treasurer, Courtauld Institute of Biochemistry, The Middlesex Hospital Medical School, London, W.1 (U.K.)

B. A. Kasanski, Section de Chimie de l'Académie des Sciences, Moscow (U.S.S.R.)

W. Klemm, Anorganisch-chemisches Institut der Universität, Hindenburgplatz 55, Münster, Westf. (Federal German Republic)

M. Letort, Director-General, Cerchar, 35 rue St-Dominique, Paris 7-e (France)

R. Morf, Secretary-General, c/o F. Hoffmann-La Roche & Co. Ltd., Basle 2 (Switzerland)

Sir Alexander Todd, Chemical Laboratory of the University, Lensfield Road, Cambridge (U.K.)

## THE ORGANIZATION AND FUNCTIONS OF I.U.P.A.C.

The Union is divided into six Sections, five of which are concerned with the five principal branches of fundamental chemistry, and the sixth with the general field of applied chemistry. The Sections are practically autonomous, except in respect of financial matters. They elect their own officers and can, subject to the approval of the Bureau, form or dissolve Commissions. A Section may organize itself by Divisions, each of which may sponsor several Commissions. The only Section which thus far has made use of the divisional organization is that of Applied Chemistry. The titles of the Divisions (see p. 10) indicate the reason for this type of organization in the very broad field of applied chemistry.

The ultimate working units of the Union are the Commissions, and in a number of cases Sub-Commissions. Each Commission is associated with, and responsible to, a Section of the Union. Much of the work of the Commissions is conducted by correspondence, but it is obviously necessary, for effective collaboration, for Commissions to convene at intervals, preferably at least once in two years. To promote such meetings the Union grants a partial subsidy of travel expenses so far as its meagre funds allow.

During the past few years I.U.P.A.C. activity was concentrated on the establishment of Nomenclature Rules and the compilation of data on atomic weights.

The Physical Chemistry Section has published a *Manual of Physico-Chemical Symbols and Terminology* (in English and French) by the appropriate Commission.

The Inorganic Chemistry Section has elaborated *Definitive Rules for Nomenclature of Inorganic Chemistry*.

The Commission on Atomic Weights brought up to date the *Table of Atomic Weights* of 1957, and a *Table of the Radio-active Elements* in 1957.

The new scale for atomic weights and nuclear masses will be established in 1961.

The Organic Chemistry and Biological Chemistry Sections have issued the *Definitive Rules for Nomenclature of Organic Chemistry*.

With the aim of better dissemination of scientific knowledge a new international journal, *Pure and Applied Chemistry*, has now been created by the Union.

## FINANCIAL SUPPORT

All the officers of I.U.P.A.C. carry out their duties on an honorary basis and without cost to the Union. Administrative expenses are therefore small. The Union's funds are derived from two sources, namely national contributions, and grants-in-aid from U.N.E.S.C.O., with which the Union is affiliated through the International Council of Scientific Unions (I.C.S.U.). National contributions are in three categories. At the 1953 Conference in Stockholm the national contributions were fixed as follows: member countries in Category A, \$1,300; member countries in Category B, \$800; member countries in Category C, \$450. A revision of these contributions is now under discussion. The expanding programme of U.N.E.S.C.O. has meant that successive budgets approved by General

Conferences of U.N.E.S.C.O. have scarcely kept up with inflation, and grants to the International Council of Scientific Unions are actually smaller than they were ten years ago. Since there are now 13 member Unions (two new ones were admitted in 1955) and an increasing amount of activity directly under the aegis of I.C.S.U., it is evident that contributions from U.N.E.S.C.O. (through I.C.S.U.) to the Union of Pure and Applied Chemistry do not cover more than a small fraction of total costs. Added income must be found if the Union and its Sections and Commissions are to do more effective work.

## APPENDIX I

## I.U.P.A.C.—NATIONAL ADHERING BODIES

- ARGENTINA Asociación Química Argentina, Hipólito Yrigoyen 679, Buenos Aires
- AUSTRALIA Australian Academy of Science, Gordon Street, Canberra City, A.C.T.
- AUSTRIA Verein Österreichischer Chemiker, Eschenbachgasse 9, III. Stock, Wien 1
- BELGIUM Comité National Belge de Chimie, Prof. J. GILLIS, 22, rue J. Plateau, Gand
- BRAZIL Associação Brasileira de Química, Caixa Postal 550, Rio de Janeiro
- BULGARIA Académie des Sciences de Bulgarie, Sofia
- CANADA National Research Council, Division of Chemistry, Ottawa
- CHINA (TAIWAN) Chinese Chemical Society, P.O.B. 609, Taipei/Taiwan
- COLOMBIA Ministerio de Minas y Petroleos, Laboratorio Químico Nacional, Apartado 2577, Bogotá
- CZECHOSLOVAKIA Chemical Society of Czechoslovakia, Dr JAN JELINEK, Gregova 12, Prague 12
- DENMARK Danske Kemiske Foreningers Faellesraad for internationalts Samarbejde, 83, Sölvgade, Copenhagen K
- FINLAND Suomen Kemistien Valtuuskunta, P.O.B. 58, Helsinki
- FRANCE Comité National de la Chimie, 28, rue St-Dominique, Paris-7<sup>e</sup>
- GERMAN FEDERAL REPUBLIC Deutscher Zentralausschuss für Chemie, Haus der Chemie, Karlstrasse 21, Frankfurt/Main
- HUNGARY M. le Prof. Dr GEZA SCHAY, Président de l'Organisation Nationale, Müegyetem XI, Stoczek u. II, Budapest
- INDIA Department of Scientific Research and Technical Education, Ministry of Education and Scientific Research, Government of India, New Delhi
- IRELAND Prof. J. M. O'CONNOR M.D., D.Sc., Nat. Adhering Org., The Royal Irish Acad., 19, Dawson Street, Dublin
- ISRAEL Israel Chemical Society, 30 Jehuda Halevi Str., Tel-Aviv
- ITALY Consiglio Nazionale delle Ricerche, Comitato per la Chimica, Piazzale delle Scienze 7, Rome
- JAPAN Science Council of Japan, Ueno Park, Tokyo
- LUXEMBOURG M. RENÉ WEISS, Dr ès sciences chimiques, 33, rue de la Libération, Esch-sur-Alzette
- NETHERLANDS Dr A. STAVERMAN, Fruinlaan 6, Leiden
- NORWAY Norks Kjemisk Selskap, Universitetets Kjemiske Institutt, Blindern-Oslo
- POLAND Prof. T. URBANSKI, Koszykowa 75, Warsaw
- PORTUGAL Sociedade Chimica Portuguesa, Faculdade das Ciencias da Universidade, Rua do Vale a Jesus 6, Lisbon
- RUMANIA Académie de la République populaire roumaine. Spl. Independenței 89, Bucarest
- SPAIN Consejo Superior de Investigaciones Científicas, Instituto Alonso Barba de Química, Serrano 121, Madrid
- SWEDEN Svenska National Kommitteen for Kemi, Postfack 30017, Stockholm 30
- SWITZERLAND Comité suisse de la Chimie, Ecole de Chimie, 22, bd des Philosophes, Genève
- SOUTH AFRICA UNION of South African Council for Scientific and Industrial Research, P.O. Box 395-Posbus, Pretoria
- TURKEY Türkije Kimya Cemiyeti Merkezi, Istiklâl Caddesi, Imam Sodak n° 22, Kat. I-Beyoglu, Istanbul 829
- UNITED ARAB REPUBLIC National Research Council, Ministry of Education Sh. al-Tahrir, Dokki, Cairo
- UNITED KINGDOM British National Committee for Chemistry, Burlington House, Piccadilly, London W.1
- UNITED STATES National Research Council, Division of Chemistry and Chemical Technology, 2101 Constitution Avenue, Washington 25 D.C.
- U.S.S.R. Academy of Sciences, B. Kaluzskaya 14, Moscow
- VENEZUELA Sociedad Venezolana de Química, Apartado 3895, Caracas
- YUGOSLAVIA Union des Soc. chim. de la R.P.F.Y., Dr P. Tutundžić, boîte postale 494, Belgrade

APPENDIX 2

THE STRUCTURE OF THE UNION

THE COUNCIL

THE BUREAU

THE EXECUTIVE COMMITTEE

THE EDITORIAL BOARD

| SECTIONS   | COMMISSIONS  | SUBCOMMISSIONS |  |                      |   |                                     |                       |  |  |
|--|--|----------------|--|----------------------|---|-------------------------------------|-----------------------|--|--|
| ANALYTICAL<br>CHEMISTRY                          | Analytical Reactions<br>Microchemical Techniques<br>Terminology and Expression of Analytical Results<br>Optical Data<br>Electrochemical Data<br>Equilibrium Data |                |  |                      |   |                                     |                       |  |  |
|  |  |                | APPLIED<br>CHEMISTRY<br>DIVISIONS:   | SUBDIVISIONS:        | Vitamin Assay<br>Trace Elements<br>Additives to Food  |                                     |                       |  |  |
|  |  |                |  |                      |   | Food                                |                       |  |  |
|  |  |                |  |                      |   | Water, Sewage and Industrial Wastes |                       |  |  |
|  |  |                |  |                      |   | Oils and Fats                       |                       |  |  |
| Pulp, Paper and Board                            |  |                |  |                      |   |                                     |                       |  |  |
| Plastics and High Polymers                       |  |                |  |                      |   |                                     |                       |  |  |
| Pesticides                                       |  |                |  |                      |   |                                     |                       |  |  |
| Organic Coatings                                 |  |                |  |                      |   |                                     |                       |  |  |
| Fermentation                                     |  |                |  |                      |   |                                     |                       |  |  |
| Toxicology and Industrial Hygiene                |  |                |  |                      |   |                                     |                       |  |  |
| Ad Hoc Committee on Chemical Engineering         |  |                |  |                      |   |                                     |                       |  |  |
| Ad Hoc Committee on Surface Activants            |  |                |  |                      |   |                                     |                       |  |  |
| BIOLOGICAL<br>CHEMISTRY                          | Nomenclature of Biological Chemistry   |                | Nomenclature of Phosphatides<br>Nomenclature of Pectin-<br>Hydrolysing Enzymes |                      |   |                                     |                       |  |  |
|  |  |                |  | Protein Standards    | Standardization of Enzyme Analysis  |                                     |                       |  |  |
|  |  |                |  | Clinical Chemistry   |   |                                     |                       |  |  |
| INORGANIC<br>CHEMISTRY                           | Atomic Weights<br>Nomenclature of Inorganic Chemistry<br>High Temperatures and Refractories<br>Geochemistry  |                | Gases<br>Condensed States  |                      |   |                                     |                       |  |  |
|  |  |                |  | ORGANIC<br>CHEMISTRY | Nomenclature of Organic Chemistry<br>Codification, Ciphering and<br>Punched-card Techniques |                                     |                       |  |  |
|  |  |                |  |                      |   |                                     | PHYSICAL<br>CHEMISTRY | Physico-Chemical Symbols and<br>Terminology<br>Chemical Thermodynamics<br>Electrochemistry<br>Affiliated Commission: International<br>Committee for Electrochemical<br>Thermodynamics and Kinetics |  |
|  |  |                |  |                      |   |                                     |                       |  |  |
| Standard Samples<br>Nomenclature<br>Publications |  |                |  |                      |   |                                     |                       |  |  |
|  | Macromolecules<br>Physico-Chemical Data and Standards<br>Molecular Structure and Spectroscopy<br>Applied Radioactivity (Joint)                                   |                |  |                      |   |                                     |                       |  |  |