ORGANIC CHEMISTRY DIVISION (III)

(REPORT 1999)

The current program of the Division of Organic Chemistry is being carried out within three commissions (III.1 - Nomenclature of Organic Chemistry; III.2 - Physical Organic Chemistry; III.3 - Photochemistry) and the Subcommittees on Bio-organic Chemistry, Organic Synthesis and Nomenclature in the 21st Century.

In line with IUPAC planning, the Division has accentuated its profile in the bio-related areas of organic chemistry. This is illustrated by thepublication of the Symposium-in-print on "Highlights in Bio-organic Chemistry" PAC - 1996; the initiation of a new series of IUPAC International Conferences on Bio-diversity (Thailand - 1997); the organization of the IUPAC Symposia on Bio-organic Chemistry; the initiation of a project on "Molecular Basis of Bio-diversity, Conservation and Sustained Innovative Utilization" and the organization of a Mini-symposium on "Novel Porphyrinoids and their Metal Complexes" at the 37th IUPAC Congress/27th GDCh General Meeting, Berlin 1999. These activities have been carried out by the Subcommittee on Bio-organic Chemistry and the Working Party on Bio-molecular Chemistry.

In recognition of the role of Organic Chemistry as the core discipline in our understanding of the "Molecular Basis of Life Sciences", it is proposed that starting from the new millennium (January 2000) the name of the Division be changed from the Division of Organic Chemistry to the:

"Division of Organic and Bio-organic Chemistry"

The Division has been charged with the task of coordinating the interdivisional activities of the Working Party on Bio-molecular chemistry.

The working groups of the Organic Chemistry Division have consciously aligned their efforts with the Goals and Thrusts of IUPAC, as outlined in the "Strategic Plan". For the Division, the relevant features of the plan involve "advancement of research", "global issues", "sustainable development", "exchange of scientific information and effective channels of communication", "education and career development of young chemists" and insuring that the "human capital is drawn from all segments of the world chemistry community".

Division III has already been operating with the concept of work within well-defined, time-limited projects. The highlights of the activities of the various groups are presented in the sequel.

<u>Commission on Nomenclature of Organic Chemistry (III.1)</u>

Nomenclature is an effective channel of communication within the international chemistry community. It is one of the most widely appreciated activities of the Union. The commission has recently (1998) published two documents (Nomenclature of Fused and Bridged Fused Ring Systems, and Phane Nomenclature Part I); while in the press are: Extension and Revision of the Nomenclature for Spiro Compounds; Extension and Revision of the von Baeyer System for naming Polycyclic Compounds and the Revised Nomenclature of Natural Products. Furthermore, several important projects, such as in the rapidly developing fields of fullerenes and stereochemistry, are either near completion or well underway.

Commission on Physical Organic Chemistry (III.2)
The commission has recently published Guidelines for Publication of Results from Empirical Force Field Calculations, while a document on Critical Compilations of Scales of Solvent Parameters is in press. A Glossary of Terms Used in Theoretical Organic Chemistry has also been completed. Projects on terms used in supramolecular chemistry and in methods for obtaining physicochemical properties of environmentally important organic compounds, are underway. The project on Reaction Pathways and Processes in Green Chemistry has made considerable progress. The working party has met twice (Washington, Venice) and is planning a symposium-in-print on Green Chemistry, jointly with the subcommittee on Organic Synthesis.

Commission on Photochemistry (III.3)
The commission has produced several highly useful IUPAC reports; amongst which the updated Glossary of Terms in Photochemistry deserves special mention. Other areas of active interest are Photochromism and Ultraviolet Disinfection. Many projects in the field of photochemistry require an interdisciplinary approach. It is consequently visualized that photochemistry-driven projects will, in the future, be best carried out in an interdivisional context. Coordination with photochemistry-oriented chemists in other Divisions will be the most effective way forward.

Subcommittee on Bioorganic Chemistry
The activities of the subcommittee have been described in the beginning of this report.

Subcommittee on Organic Synthesis
The subcommittee in its new composition was nominated in January 1998. It has undertaken a project on the development of guidelines for transmission of information on organic synthesis and is engaged in completing the previously initiated activity on standard abbreviations for chiral auxillaries and protecting groups.
The subcommittee is coordinating its activities in the area of combinatorial chemistry with Division VII and is co-sponsoring a symposium-in-print with the working party from commission III.2.

Subcommittee on Nomenclature in the 21st Century
The object of the project was to establish future needs for organic chemical nomenclature, by means of a survey of nomenclature users. The subcommittee presented a report in which it recommended the setting up of a Nomenclature Systems Standing Committee or a committee within the Division to deal specifically with organic nomenclature.

Congresses
The Division assumes the primary responsibility for future planning of IUPAC International Symposia on the following topics [listed alphabetically]:

Bio-diversity (Brazil 1999, Turkey 2001, Russia 2003);
Bio-organic Chemistry (India 2000, Canada 2002, United Kingdom 2004);
Natural Products (Brazil 2000; several countries are being considered for 2002);
Organic Synthesis (Poland 2000, New Zealand 2002);
Physical Organic Chemistry (Sweden 2000, USA 2002).

The Division has shared responsibility in the organization of the series of IUPAC Symposia on

Photochemistry (Germany 2000, USA 2002).

It is expected that the commissions and the subcommittees will continue in the biennial 2000-2001, during which period they will guide the transition to a "project-driven" organization of their activities after 2001, when these bodies will be dissolved.

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