Heterocyclic Chemistry

by Irina P. Beletskaya

The **XXI European Colloquium on Heterocyclic Chemistry** (ECHC) was held 12–15 September 2004 in Sopron, Hungary. The conference, which was organized by the Chemical Research Center of Hungarian Academy of Sciences and the Hungarian Chemical Society, drew over 300 participants, including 100 young chemists from 24 countries. The program included 12 invited lectures and 180 posters, of which 12 were selected for oral presentation. The conference chairman Gyorgy Hajos and co-chairman Peter Matyus helped create a highly organized event with a very creative and friendly atmosphere.

The chemistry of heterocyclic compounds comprises a very broad field as is clearly seen from this partial list of invited lectures:

- F. Diederich (Switzerland), "Heterocycles in the design of nonpeptidic enzyme inhibitors"
- I.P. Beletskaya (Russia), "Transition metal catalysis in heterocyclic chemistry"
- J. Alvarez-Builla (Spain), "Pd-reactions in charged heterocyclic species"
- G. Keglevich (Hungary), "P-Heterocyclic chemistry"
- K.R. Seddon (Ireland), "Heterocyclic cations for ionic liquids"
- J.A. Gladysz (Germany), "Design of molecular devises ("rotors", "gyroscopes") using alkene and alkyne metathesis reactions"
- I.E. Marco (Belgium), "Tandem pericyclic reactions of 2-pyrone derivatives"
- J.M. Bakke (Norway), "Synthesis of nitropyridines using N_2O_5/SO_2"
- N. Haider (Austria), "Cycloaddition routes to condensed carbazoles"
- P.J. Dunn (Pfizer), "The history of the discovery of Viagra and other PDE 5 inhibitors"
- K. Hideg (Hungary), "The chemistry and biology of heterocyclic nitroxide radicals"
- S. Florio (Italy), "Utilization of oxiranyllithiums in various interesting asymmetric syntheses"

The conference demonstrated that innovative methods of modern chemistry (new synthetic methodologies, new reaction media, novel catalytic methods, metal-catalyzed and metal-mediated processes, new physical methods of activation [microwave, for instance]) are widely used in the chemistry of heterocyclic compounds. The potential of this chemistry for the synthesis of new and useful compounds is truly inexhaustible.

The next Heterocyclic Colloquium will be held in Italy in 2006.

Irina P. Beletskaya <beletska@org.chem.msu.su> is a professor in the Department of Chemistry at Moscow State University. She served as IUPAC representative at the ECHC and is also a former president of the Organic and Biomolecular Chemistry Division of IUPAC.

Soil Science

by Qiaoyun Huang

The **4th International Symposium on Interactions of Soil Minerals with Organic Components and Microorganisms** (ISMOM2004) was held 20–23 September 2004 at the Huazhong Agricultural University in Wuhan, China. The conference was sponsored by the International Union of Soil Sciences (IUSS) and IUPAC. The meeting attracted 135 delegates from 21 countries. The theme of ISMOM2004 was the "Environmental Significance of Mineral-Organic Component-Microorganism Interactions in Terrestrial Systems." The conference program was divided into the following six sessions:

- Transformation and Dynamics of Pollutants in Soil Environments
- Chemical, Biological and Biochemical Processes in the Rhizosphere
- Bioavailability of Metals, Nonmetals and Xenobiotics Immobilized on Soil Components
- Distribution and Activity of Biomolecules in Terrestrial Systems
- Interactions between Soil Microbial Biomass and Organic Matter/Nutrient Transformations
- Impact of Interactions among Soil Mineral Colloids, Organic Matter and Biota on Risk Assessment and Restoration of Terrestrial Ecosystems

All sessions consisted of oral and poster presentations. There were 2 plenary lectures, 9 invited speakers, 36 oral presentations and 45 posters. Nicola Senesi, from the University of Bari, Italy, presented an IUPAC lecture on "Metal-Humic Substance Complexes in Soil." Pan Ming Huang from the University of Saskatchewan, Canada, gave a plenary lecture on

"Physical-Chemical-Biological Interfacial Interactions in Soil Environments."

The symposium served as a forum for interactions among soil scientists, chemists, geochemists, biologists, microbiologists, mineralogists, ecologists, and environmental scientists. Papers presented at the symposium covered mechanisms of transformations, dynamics and bioavailability of heavy metals, radionuclides, biomolecules and nutrients immobilized on soil minerals, humic substances, mineral-humic complexes, and microorganisms and their impact on plant, animal, and human health.

A selection of the plenary and invited lectures will be published in a special book by Springer-Verlag. Papers from volunteered oral and poster speakers will be published in a special issue of the international journal *Geoderma*.

The 5th ISMOM conference is planned for Chile in 2008.

Qiaoyun Huang <qyhuang@mail.hzau.edu.cn> is a professor of soil biochemistry at Huazhong Agricultural University in Wuhan, China. Dr. Huang served as the conference chairman for ISMOM 2004.

Chemical Engineering

by A.J. Núñez Sellés

The **5th International Congress on Chemistry and Chemical Engineering** was held in Havana, Cuba, 18–22 October 2004, under the sponsorship of the Cuban Chemical Society, Academy of Sciences of Cuba, and IUPAC. The event drew 700 participants (400 Cuban chemists) from 32 countries. The congress comprised the II International Symposium on Biochemistry and Molecular Biology, IV International Workshop on Natural Products Chemistry, and sessions on Chemical Education, History of Chemistry, Chemical Engineering, and Environmental, Organic, Inorganic, and Analytical Chemistry.

Opening remarks were given by Alberto J. Núñez Sellés, president of the Organizing Committee; Ernest Eliel, IUPAC representative (USA); Paulo C. Vieira, president of the Federación Latinoamericana de Asociaciones Químicas, Charles Casey, president of the American Chemical Society; William Byers, president of the American Institute of Chemical Engineers, and Irma Castro Méndez, scientific secretary of the organizing committee.

Outstanding chemists from many different countries delivered more than 800 presentations, including plenary and session lectures. Ernest Eliel delivered a welcoming lecture on the "History of Stereochemistry, 1850–2004." Later, the University of Havana presented Eliel with the title of *Doctor Honoris Causa,* honoring his distinguished career in chemistry (he received a chemistry degree from the University of Havana in 1946) and his contributions to chemistry development in Cuba. Vicente Vérez Bencomo (Cuba) discussed how chemists worked with other disciplines during the research, development, production, and introduction into the Cuban health system of the first synthetic vaccine produced in Cuba against *H. influenzae* B. The auditorium honored both presentations with a standing ovation.

Ramón Pomés Hernández (Cuba) presented a very interesting lecture about the contributions of chemistry to the development of tourism in Cuba. Adamo Fini (Italy) presented his results about the solubility and polymorphism phenomena of pharmaceutical salts from diclofenac. Fini received an Honorary Membership in the Cuban Chemical Society for his distinguished career in chemistry and cooperation with the Cuban chemical community. V. Turk (Slovenia) discussed the function, structure, and regulation of cysteine-proteinases. Nazario Martin (Spain) presented an interesting approach to photosynthesis mimics through fullerene chemistry.

C. Hidalgo (Chile) focused his lecture on the redox signaling cascades in calcium release channels (CRC), with an interesting approach regarding oxidative stress and CRC. C.P. Casey (USA) presented his views on the challenges for chemists in this century. W. Byers (USA) summarized the American Institute of Chemical Engineers response to the changing nature of chemical engineering. L. Echegoyen (USA) deliv-