



Scientific toxicology societies in Europe

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Received 15.12.2017

Accepted 28.02.2018

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Summary

With the development of toxicology as a science, the second half of the 20th century saw the establishment of scientific societies, such as the International Society of Ecotoxicology and Environmental Safety (SECOTOX), the Federation of European Toxicologists and European Societies of Toxicology (EUROTOX), the Polish Society of Toxicology, and the European Society of Toxicologic Pathology (ESTP). This study describes their development, organizational structure and mission. The scope of their interest, in addition to toxicology, also includes ecotoxicology, which protects the natural environment and public health.

Keywords: scientific societies, toxicology, SECOTOX, EUROTOX, ESTP, PTTTox

The development of civilization has made our lives easier and more comfortable, but has also led to increasing pollution of the environment (8, 9). The growing awareness of this fact has resulted in protests and intensified pro-environmental activities (3, 5). The awareness of the human cost of environmental contamination gives political prominence to the issue, not only in highly industrialised countries (1). Scientists have also become involved in environmental protection broadly understood, as the opinions of those involved in research on environmental pollution and the resultant poisoning of living organisms appears to be most reliable and necessary (2, 4, 6, 7).

SECOTOX – The International Society of Ecotoxicology and Environmental Safety

SECOTOX is a scientific society established in 1972 at the Institute of Ecological Chemistry in Munich, Germany, specifically focused on the toxicological aspects of environmental protection (www.secotox.uth.gr).

The main objective of SECOTOX is to identify the current toxicological problems of the environment and to search for solutions at local, regional, national and global levels. In pursuing these aims, the organisation deals with issues related to the quality of water, soil and the air, the safety of food additives and the adverse

effects of medicines on humans and animals. It also collects data allowing particular countries to carry out an overall assessment of the effects of toxic agents on the environment. Another task of the society is to contribute to the protection of public health against the adverse effect of chemical and physical agents, both natural and man-made. In accordance with its motto “to think globally, to act regionally,” the society seeks to integrate environmental protection by showing scientists and politicians the importance of regional ecotoxicological policy in achieving global objectives.

Initially, SECOTOX was an international association, and its members originated from countries of Europe, the Far East and both Americas. Changes in the organisation were inspired by the Society of Environmental Toxicology and Chemistry (SETAC), established in 1979. In the years 1989-1990, assisting bodies of the SECOTOX were formed: SETAC-UK in the United Kingdom and SETAC-Europe in continental Europe. Cooperation between these units has resulted in limiting the interest of SECOTOX to ecotoxicological problems in Europe. Consequently, SECOTOX separated from the International Academy of Environmental Safety (IEAS) and became an organisation of an academic nature.

The Society’s activities in the field of ecotoxicology in the years 1988-1991 were linked to political

transformations in Europe, which promoted contacts and cooperation with scientists from East European countries.

Within the framework of SECOTOX, European-wide ecotoxicological conferences and numerous regional symposia and workshops have been held on local issues of public health and environmental degradation. After the 2nd SECOTOX European Conference (Amsterdam, the Netherlands, 1992), the Society began intensive activities in Eastern Europe; its first meeting in this part of the continent was already held in the same year in Nitra (Slovakia). Shortly afterwards, the first regional section, known as the Central and Eastern European Regional Section of SECOTOX (CEERS-SECOTOX), was established by representatives of Slovakia, the Czech Republic, Poland, Hungary and Ukraine. The next regional meeting "Environmental Toxicology: Pathways of Anthropogenic Pollution in the Environment, and their Toxic Effects" was held in Poland (Kraków, 2001). It was attended by representatives of nearly all Central and East European countries.

Parallel to the formation of the Central and Eastern European Regional Section of SECOTOX and to its meetings, another regional section was being developed. In 1993, a workshop called "Environmental Toxicology: Environmental and Human Hazards in the Mediterranean Region" was held in Rome, Italy. The main participants in the workshop were scientists from Spain, Portugal, France, Croatia, Greece, Israel, Morocco, Cyprus, Malta, Libya and Italy, in addition to representatives of both Americas, Thailand, India, Bangladesh and Yemen. In later years, SECOTOX's activities attracted the interest of African countries, which resulted in the organisation of an international symposium in Morocco in 1991. Two years later, the 1st conference of the Asian branch of the Society was held in China.

Two periods may be distinguished in SECOTOX's organisational activities: the first, lasting until 2007, was characterised by diversity in both the subject matter and the location of meetings, while the second was dedicated to structured activities. In 2007, SECOTOX organised the first joint conference with the CEMEPE (Conference on Environmental Management, Engineering, Planning and Economics). In the next year, the Symposium on Green Chemistry for Environment and Health was held (co-organised with, among others, the Hellenic Green Chemistry Network). Since then, conventions have been held on a cyclical basis: symposia in even-numbered years and conferences in odd-numbered years; in addition, international meetings took place in Greece (on the Skiathos and Mykonos islands).

The subsequent regional conventions have attracted an increasing number of international organisations, including the WHO European Centre for Environment and Health, the International Register of Potentially Toxic Chemicals of the United Nations Environment

Programme, the European Environmental Research Organization (EERO) and the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC). In addition to scientists and representatives of international organizations, SECOTOX conventions are attended by representatives of industry and governments of many countries, which makes it possible to discuss interdisciplinary matters related to environmental protection.

The activities of SECOTOX are not limited to the exchange of scientific data. Great emphasis is also placed on the improvement of analytical methods to better assess and predict the effect of chemical contaminants on the environment and health of humans and animals. Moreover, strategies to combat chemical contaminants are also being developed. Such analyses lead to a better understanding of the dependence of human health on the condition of the environment.

SECOTOX presidents are elected from among members originating from various countries: for example, in 1999, Professor Irena Twardowska, PhD, from Poland was elected to perform this function (<http://www.secotox.uth.gr/History.html>).

EUROTOX – Federation of European Toxicologists and European Societies of Toxicology

EUROTOX (<http://www.eurotox.com>) is a federation of national societies of toxicology, which together have approximately 7,000 members from 50 European countries, mostly from Western Europe. It has worldwide recognition and since 1989 has operated under the auspices of the International Union of Toxicology (IUTOX).

EUROTOX emerged from the European Society for the Study of Drug Toxicity established in Zurich in 1962. Over several years, the Society's scope of interest extended beyond the toxicology of drugs, which necessitated a change in the name of the organisation to the European Society of Toxicology (EST) at a conference in Carlsbad in 1974. In the late 1970s and early 1980s, there was a rapid development in toxicology in Europe, which resulted in the emergence of many new national associations connecting scientists in this field of research. At a congress in Kuopio in 1985, fourteen national societies of toxicology (Finland, France, the German Federal Republic, the German Democratic Republic, Hungary, Ireland, Italy, The Netherlands, Norway, Poland, Spain, Sweden, Switzerland and the United Kingdom) and the EST decided to establish the Federation of European Societies of Toxicology (Federation of European Societies of Toxicology – FEST). Due to the strong similarity of both organisations, the EST soon changed its name to EUROTOX, and in 1989 the EST and the FEST merged at the IUTOX congress in Brighton, the UK. In subsequent years, EUROTOX was joined by national toxicological organisations from Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Denmark,

Estonia, Greece, Lithuania, Macedonia, Portugal, Romania, Russia, Slovakia, Slovenia, Turkey, Ukraine and Serbia.

The main task of EUROTOX is toxicological education in both a scientific and promotional sense. Numerous scientific congresses, workshops and training courses for scientists have been organized. The Federation has established cooperation with biomedical and specialist organisations, thus increasing its contribution to the protection of public health, and encourages scientists from various disciplines to cooperate with toxicologists by establishing an international forum for discussion of global issues concerning human health and the environment.

Currently, EUROTOX congresses are scientific events which annually attract around 1,000 participants, not only from Europe. In 2014, the congress was held in Edinburgh for the 50th time. These conventions also provide an opportunity to promote young toxicologists who are presented with the Early Career Award for the best presentation of their scientific accomplishments. Once a year, outstanding scientists are presented with the Merit Award for valuable toxicological studies.

The numerous training courses and workshops organised by EUROTOX are directed not only at novice toxicologists; they also provide development opportunities for scientists working in many specialized areas of toxicology, including the Environmental Risk Assessment (ERA), neoplastic processes, immunological toxicology and chemical allergies, molecular toxicology and toxicological pathology.

The mission-related activities of EUROTOX are also pursued through the European Register of Toxicologists, established in 1994. The register lists data on professional toxicologists distinguished by their knowledge, skills and experience, who are authorities on toxicology. Their recruitment takes place in two stages: at the national level, by the recommendation of a national society of toxicology, which is followed by the acceptance of the candidate and the issuing of a EUROTOX certificate. Currently, the ERT lists approximately 1,500 toxicologists, including Professor Marek Murias, PhD, from the Department and Unit of Toxicology of the Poznań University of Medical Sciences in Poznań, Poland.

ESTP – The European Society of Toxicologic Pathology

The ESTP was established (in its current form) in October 2002 because of the need to create an international organization as a result of the transformation of the Society of Toxicologic Pathology (Gesellschaft für Toxikologische Pathologie – GTP) at a meeting in Giessen (www.eurotoxpath.org). The main tasks of the society include organizing annual scientific meetings, raising pro-environmental awareness among authorities and institutions, promoting toxicological pathology

and disseminating knowledge of this field; participating in the work of scientific groups, organising training courses and workshops in toxicological pathology and related sciences and cooperating with other societies dealing with similar issues.

The Committee for Scientific Standards (CSS) operates within the framework of the ESTP and promotes the flow of information and the exchange of data acquired in scientific studies by toxicological pathologists (toxipathologists) and scientists of related fields. Since 2006, the ESTP has been participating in a project of the International Harmonisation of Nomenclature and Diagnostic Criteria for Lesions in Rats and Mice (INHAND). Thus, it co-develops and disseminates guidelines on the standards of toxicological research. This is a domain of specialists in toxicological pathology who develop harmonised systems/guidelines for the morphological assessment of particular organs and systems, which are published, among others, in the *Journal of Toxicological Pathology*. On the other hand, the “external” activities of the CSS include, among others, the issuing of opinions on research projects in toxicological pathology.

Since 2003, the Society’s activities have been bearing fruit in the form of annual congresses. In organizing them, the ESTP cooperates with other societies, including the European Society of Veterinary Pathology (ESVP), the European College of Veterinary Pathologists (ECVP), the British Society of Toxicological Pathology (BSTP), the International Federation of Societies of Toxicologic Pathologists (IFIST) and the Charles Davis Foundation (2, 4, 6, 7).

The membership of the Society is open primarily to scientists in the field of toxicological pathology. In order to become a member of the Society, a candidate must be recommended by two ESTP members and his formal admission takes place at the annual General Convention. Members of the Society are presented with awards for best publications (the Publication Awards) and for outstanding scientific achievements (the Thesis Awards) in toxicopathology.

The Polish Society of Toxicology (PTTox)

The Polish Society of Toxicology (www.pttox.lodz.pl) is a national society of EUROTOX and the International Union of Toxicology (IUTOX). The organisation, established in March 1978, comprises 11 regional sections (Białystok, Gdańsk, Kraków, Lublin, Łódź, Poznań, Szczecin, Śląsk, Warmia and Mazury, Warszawa and Wrocław), and has approximately 300 members. The Society’s activities include the organisation of scientific conventions, conferences, training courses and seminars, at both the national and international levels. In addition, until 2009, the Society published its own scientific journal *Acta Poloniae Toxicologica* (renamed to *Acta Toxicologica* in 2003).

Until the Second World War, Polish toxicology involved mainly analytical toxicology, and the main field

of its activity was forensic medicine. Afterwards, the rapid development of the country posed new challenges to this discipline. The chemical-based approach to agriculture, along with the use of veterinary drugs, led to the extension of the scope of toxicologists' interest to include, among others, industrial, environmental, clinical and veterinary toxicology. Over the years, it has become necessary to establish an organisation to ensure scientific development and education of toxicologists as well as cooperation between specialists from various fields of toxicology. To this end, in 1966, on the initiative of Professor Władysław Rusiecki, PhD, the Toxicology Section of the Polish Pharmacological Society was formed. The Section's interests included mainly various aspects of the use of drugs: acute and chronic toxicity, interactions, drug dependence, analysis of new drugs, etc. In 1978, the Polish Society of Toxicology was established, which is an interdisciplinary society, operating under the auspices of the Polish Academy of Sciences. In the same year, at the General Organisational Convention, the authorities of the Society were elected, headed by Professor W. Rusiecki, PhD.

The main tasks of the Polish Society of Toxicology include organising and supporting activities aimed at the development of research in all fields of toxicology, promoting contacts between persons involved in both experimental and practical toxicology, disseminating the latest knowledge in toxicology and related sciences, informing the public of the current problems and achievements of modern toxicology for the benefit of the country and to protect the health of its citizens, and representing Polish toxicology at home and abroad. Since 1981, conventions of the Polish Society of Toxicology have been held regularly every three years, providing an opportunity to present scientific accomplishments. During the conventions, awards are given for outstanding scientific studies.

The Society organises annual workshops called "Nowe trendy w toksykologii" ("New Trends in Toxicology"). The Polish Society of Toxicology co-organised the 42nd International EUROTOX Convention held in Kraków, Poland, in 2005.

In order to become a member of the Polish Society of Toxicology, it is required that the candidate be educated and have scientific achievements in the field of toxicology or related sciences. The members include experts in various fields, such as pharmacy, medicine, chemistry, biology and veterinary medicine. In addition to regular members, the Society also has honorary and sustaining members. One may be selected as an honorary member in recognition of services to the Polish Society of Toxicology, and everyone who provides financial support for the Society may become its sustaining member.

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