From toxicological Research in Estonia to Estonian Society of Toxicology

Anne Kahru[1,2] Angela Ivask [1,2,3]

[1]Estonian Society of Toxicology; [2]Laboratory of Molecular Genetics, National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, Tallinn 12618, Estonia.; [3] UC CEIN, 570 westwood Plaza, 90095 Los Angeles, USA
E-mail: anne.kahru@kbfi.ee

Poster to be presented in SOT 2011 50th anniversary meeting.

To congratulate the Society of Toxicology on behalf of Estonian Society of Toxicology, we present here a short overview of toxicological research in Estonia and the history of Estonian Society of Toxicology.

Estonia and toxicological research

Since 1980-2010, in Thomson-Reuters ISI Web of Science the top 10 most cited Estonian toxicological papers concern various toxicological disciplines and many of them are produced in international cooperation (**Fig. 1**)

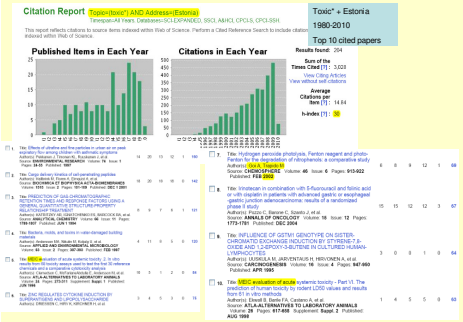

Fig. 1. The top 10 most cited Estonian toxicological papers according to Thomson-Reuters ISI Web of Science. 1980-2010. Papers that are published by the members of Estonian Society of Toxicology, are in yellow backgtound

Estonia is a small country of 1.3 million people. From 1944-1992 Estonia was under Soviet occupation. The first experiments on industrial toxicology in Estonia originate from Soviet time (since the 1950s). Although there was a pressure to publish in Russian and in Soviet scientific journals, Estonian toxicologists have been publishing even during Soviet time, also in international journals e.g., on toxicological properties of various oil-shale chemicals as well as on occupational health issues. Prof. H. Kahn in the paper "Research results of Soviet scientists in some problems of occupational medicine. Review of the years 1981-1984" states: "*We have set MAC values for more than 800 chemical substances…/.. the research has become more complicated because the traditional toxicological experiments must now be supplemented by studies of various other biological effects, such as the sensitization of the organism and mutagenic, teratogenic, carcinogenic, and other effects… ".* The information on the development of Research on occupational health in Estonia is summarised in the recent book of H. Kahn (summaries also in English and Russian) (**Fig. 2**).

Fig. 2. Book on history of research on occupational health in Estonia. *Author Hubert KAHN signing the book for Anne Kahru. Tallinn, 2009*

From the Soviet time, in the libraries of Estonia there is a large collection of Russian language toxicological literature preserved. Within the FP6 OSIRIS project these data are collected into a web-database E-SOVTOX (http://kbfi-databases.eu/database). The latter involves toxicity data from in vivo experiments with rodents, performed mostly for setting of human occupational health limit values for industrial chemicals in the former Soviet Union. Due to the language barrier as well as poor digitalisation of these papers, this information may remain unreached by not-Russian speaking audience (M. Sihtmäe et al., Toxicology 262 (2009) (**Fig. 3**).

Fig. 3. In the libraries of Estonia there is a large collection of Russian language toxicological literature preserved. *Read more from the paper.*

Estonian Society of Toxicology (ETS)

Preambula

Optimistic ideas that came up at Finnish-Estonian congress of toxicology in spring 1997, in Tartu, led to foundation of Estonian Society of Toxicology (http://www.kbfi.ee/ets) on 17th October 1997. The "godmother" of the Society was Finnish Society of Toxicology, and especially Prof. Hanna Tähti, who encouraged Estonian toxicologists to form a Society of our own. There was 26 founding members (**Fig. 4**).

Fig. 4. Foundation of Estonian Society of Toxicology on 17th October 1997. Members of the Board and H. Kahn are separately noted. First chair-person: Dr. Anne Kahru

The role and position of ETS in Estonia

Due to joining the European Union, Estonia is facing new legislatory needs, thus there is a growing need for toxicological knowledge in environmental risk assessment, evaluation of food and cosmetic products etc. Toxicological research also plays a significant part in working out Estonian sustainable development strategy. ETS is contributing by promoting networking and exchange of know-how among its members and their colleagues, thereby helping them to cooperate more effectively and achieve better outcome.

The aims of ETS:

- to join specialists of various fields of toxicological research,
- to encourage participation of its active members, especially post-graduate, PhD
- students and young researches in scientific events abroad and to conduct their
- research,
- to organize conferences,
- to promote scientific contacts between Estonian toxicologists and their foreign colleagues,
- to consult and provide professional advice to legal entities and private persons,
- to provide toxicological expertise on sustainable management of Estonian natural
- resources and on environmental protection problems.

The main events of ETS:

Scandinavian Society of Cell Toxicology -ETS 1998 Conference (Fig. 5 A and B)

A Joint Conference of Scandinavian Society of Cell Toxicology (SSCT) and Estonian Society of Toxicology in 1998, in Tallinn. The meeting was very successful:

- 86 participants from 17 countries.
- 31 oral and 27 poster presentations
- proceedings published in ATLA
- Key-note speakers Prof. E. Dybing (Norway), Prof. G. Persoone (Belgium) and Prof. J. Timbrell (King's College, London)

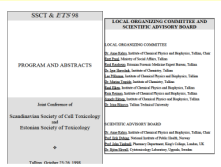

Fig. 5 A. SSCT-ETS 1998 Conference, Tallinn

Fig. 5B Moments from ETS-SSCT conference. Tallinn, 1998

GLP Course at 2003

In April 2003, a course on Good Laboratory Practice was organised with the help of IUTOX (lecturer Dr. Andrew Waddell).

BTox Programme

During 2003-2004 ETS was involved in the Btox program, started by University of Uppsala, to initiate toxicology education in the Baltic countries. Altogether about 30 students attended cources for 3-6 weeks. Indeed, with an exception of a few courses in pharmacological departments, toxicological disciplines were not yet taught in Estonian universities. Currently the situation is improving.

Scandinavian Society of Cell Toxicology -ETS 2005 Conference (Fig. 6 A and B)

Joint SSCT-ETS conference "Chemicals, Human & Environment"
Toila, 20-23rd Oct. 2005

- 82 participants from 18 countries.
- 28 oral and 40 poster presentations, 2 poster socials
- proceedings published in ATLA
- Key-note speaker: Prof. John Timbrell (King's College, London)

Fig. 6A Moments from ETS-SSCT conference Toila, 2005

"Cafe Scientifique"

"Cafe Scientifique" - an event organised jointly and with a sponsorship with British Council in "Klooshi Ait" on Wednesday, October 19, 2005, at 17.00.

The guest of the Cafe is Prof. John Timbrell (King's College, London). Prof. Timbrell is the author of the books "Principles of Biochemical Toxicology" and "Introduction to Toxicology".

The discussion in the Cafe will be wind around Prof. Timbrell's brand new book about the history of Toxicology "The Poison Paradox. How and when chemicals are toxic".

Fig. 6B. ETS-SSCT 2005 pre-conference event – Cafe Scientifique

IUTOX-supported seminar "The three R-s and the impliction of REACH", May 26, 2006

Invited speaker Dr. Robert Combes (FRAME, UK)

Estonian Society of Toxicology, anno 2011

At present (2011), ETS has 51 members, mostly scientists and students dealing with chemical safety, occupational health and environmental risk assessment. Currently ETS is the member of EUROTOX (since June 6, 1998) and IUTOX (since June 28 2004). Since 1999 ETS annually awards scholarships for PhD students and young scientists to support their attending to scientific conferences and courses on toxicology. **Fig. 7** shows the participants of the Annual Meeting of ETS 2010 at Võrtsjärve Limnology Station.

Since beginning, the virtual Headquarters for ETS is provided by National Institute of Chemical Physics and Biophysics, NICPB, and its server is hosting also the website of ETS; **http://www.kbfi.ee/ets/ (Fig. 8).**

The current members of the Board: Anne Kahru (chair-person since 1997), Monika Mortimer (secretary), Villem Aruoja, Angela Ivask, Toomas Veidebaum and Reet Pruul.

Fig. 7. ETS Annual Meeting 2010. Võrtsjärv Limnology Station.

Fig. 8. ETS website