

*Facta non solum verba*

ESTONIAN  
ACADEMY OF SCIENCES  
YEAR BOOK

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## FOREWORD

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For the Academy, the year of 2005 was the year of continuing traditions, but also the year preparing for new challenges. We commemorated with conferences the 200th anniversary of Ferdinand Johann Wiedemann, the 100th anniversary of Noor-Eesti and the 100th anniversary of Paul Ariste; we discussed the work of Centres of Excellence of Estonian Science, the situation with financing of the research, and the strategy for progress towards the knowledge-based society. In co-operation with European Court of Auditors we discussed the use of EU 5th and 6th Framework Programme funds, and reasonable changes in the 7th Framework Programme. The said, and other traditional activities of the Academy as well as the activity of institutions and societies associated with the Academy, have been recorded in this Year Book.

Preparation for changes is indirectly manifested in this Year Book – the clear-cut facts will only be published in Year Book 2006. And yet – the speculations about change of the role of the Academy in society, about the possibility to enhance the Academy's contribution in factually argumentative pre- and post-analysis of political decisions, has brought us to elaboration of the new development plan of the Academy, to be submitted to General Assembly of 2006 for pronouncement.

These discussions are reflected in this Year Book by public speeches of Members of Academy, especially by personal opinions of Members of Academy. Various opinions and proposals have a clear unifying constructive goal – to increase the Academy's responsibility and capacity, in order to elevate the level of Estonian science, to support the new generation of scientists and to promote the image of Estonian research, and research-intensive economy of the state of Estonia in the world. Opinions have been issued regarding the publishing policy, and the role of bibliometry in distributing the research funds. Still, the main topic regards the strongly non-supportive attitude of our political figures towards the science management and financing problems, and about insufficient use of research results in taking strategic political decisions that mould the future of Estonia.

A rather acrid drop of tar in the political jar of honey of the state of Estonia with its rapidly developing economy, is the fact that the budgetary support to Estonian Academy of Sciences in 2004–2006 has been steadily lower than it was in 2003. If the same trend continues in 2007, the Academy will have to markedly cut down its activities due to steadily decreasing financial support from the state budget.

Internationally, and in the European Union, our Academy and the Estonian research performs well. The Academy and the Estonian researchers participate in several advisory boards of European Commission, European Parliament, and in many international institutions managing research. An impressive token of recognition was the election of Jüri Engelbrecht to the post of President of European Federation of National Academies of Sciences and Humanities “All European Academies” (ALLEA) for the years 2006–2009.

*Leo Mõtus*

## CHRONICLE

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18 January – Board of Academy approved the first draft of the budget for 2005, approved the action plan of the Academy, job responsibilities to Board responsibilities members, and decided on necessary replacements of representatives in the commissions. The Board approved the theses of inauguration speech of President of the Academy Richard Villems on development strategy of the Academy and authorised President to hold necessary negotiations with appropriate ministries, organisations and institutions.

19-20 January – Vice-President Jüri Engelbrecht attended the session of European Research Advisory Board (EURAB) in Brussels and participated in meetings of two working groups: WG3 (improving the regional potential for research and innovation) and WG6 (science and society).

20 January – Academy House welcomed for the second time the international academic seminar “The Second Nordic Grid Neighbourhood Workshop” (see p. 40).

23-27 January – Secretary General Leo Mõtus sojourned in London, attending the meeting of European Academies’ Science Advisory Council (EASAC) and in Brussels, participating at the initiation meeting of the network DYNAMO being established in the framework of the European Co-operation in the Field of Scientific and Technical Research (COST).

25 January – Vice-President Jüri Engelbrecht participated at the meeting of the European Research Council (ERC) Identification Committee in Brussels.

28 January – inauguration ceremony of President of the Academy Richard Villems (see p. 58).

3 February – 100th anniversary of Paul Ariste, Member of Academy, was commemorated by a conference, organised by the University of Tartu and held in its premises. President Richard Villems handed over the first Paul Ariste medal to Professor Emeritus of the University of Tartu, Doctor of Philology Tiit-Rein Viitso (see p. 46).

7 February – Academy was visited by Ambassador of the Czech Republic in Estonia Miloš Lexa, who met Vice-President Jüri Engelbrecht.

8 February - presentation of the book “Scientific Thinking in Estonia. Medical Science” compiled under aegis of the Academy, in the hall of the Council of the University of Tartu (see p. 52).

10-11 February – Vice-President Jüri Engelbrecht delivered a presentation at the meeting of delegations of capitals of the Baltic countries in Berlin “Challenges for New EU Member States” and participated at the panel discussion

held in the Berlin Town Hall, as well as at the mini-symposium “Micro- and nanotechnologies in the Baltic countries” in the science park Adlershof.

24 February – national research, culture and sports prizes were handed over in the Academy Hall.

25 February – Vice-President Jüri Engelbrecht participated in Brussels at the meeting of the ERC Identification Committee.

3-4 March – Vice-President Jüri Engelbrecht participated at Finnish-Estonian joint seminar “Basic Research and Human Resources in the FP7” in Helsinki and was moderator on the second day of the said gathering.

7 March – Academy was visited by Ambassador of Belgium in Estonia Pierre Dubuisson, who met Vice-President Jüri Engelbrecht. Under discussion were links of Estonia with the Walloon region of Belgium.

8 March – Board of Academy had a meeting with Estonian Literary Museum associated with the Academy, in the house of the Museum in Tartu (see p. 43).

9-11 March – Vice-President Jüri Engelbrecht attended session of the special commission of European Science Foundation in Geneva.

15 March – Board of Academy approved the report of the commission on planning the development of IT infrastructure supporting Estonian research and educational institutions. Jaan Undusk was approved for the second period into office of Director of Under and Tuglas Literature Centre. The Board also approved the composition of scientific council of Under and Tuglas Literature Centre. The Board consented to the use of the name of Estonian Academy of Sciences in the list of organisations organising in Tallinn within the 6th Framework Programme the “Conference on Knowledge-based Materials and Technologies for Sustainable Chemistry”. The Board took cognisance of information on reorganisation plans of Estonian Science Foundation and Science Competence Council, and discussed the holding of Science Days of the Academy in Rakvere.

15 March – Academy was visited by Ambassador of the Ukraine in Estonia Mykola Makarevych, who met President Richard Villems.

17-18 March – Assistant Secretary General Galina Varlamova attended the international seminar “The Future of Scientific Information Chain” organised in co-operation between European Federation of National Academies of Sciences and Humanities (ALLEA) and Hungarian Academy of Sciences.

30 March – Peeter Saari, Member of Academy, delivered academic lecture in the Academy Hall on “Physics and Security”, pondering over several security problems of global implication. The event was held within framework of the International Year of Physics 2005.



1 April – Academy House witnessed an international conference “Ferdinand Johann Wiedemann 200” (see p. 37).

7-9 April – Vice-President Jüri Engelbrecht participated at the regular spring session of governing council of the European Science Foundation (ESF) in Luxembourg.

12 April – Board approved as nominee of Nikolai Alumäe medal Jüri Engelbrecht, Member of Academy; it also approved the statute of Wilhelm Ostwald medal. The Board approved the agenda of annual meeting of General Assembly of the Academy, the consolidated financial statements of the Academy for 2004, the consolidated budget for 2005 and submitted them to General Assembly for approval. The Board decided to announce the 2005 competition for students’ research prizes and to approve the regulation of the research grants of the Academy for 2005, with the aim to supporting completion and preparing for publication of monographic research works and popular science books. It was also decided to call the public competition for Bernhard Schmidt Prize 2005. Respective commissions were set up. Modernisation plans of the Academy’s technical infrastructure were also discussed.

12 April – conference “Centres of Excellence of Estonian Science 2005”, organised by the Academy and the Association of the Centres of Excellence of Estonian Science (see p. 37).

14-15 April – Academy House witnessed the ALLEA Steering Committee meeting.

27 April – at the annual meeting of General Assembly of the Academy, President Richard Villems presented the activities report of the Academy for 2004. The meeting was attended by President of the Republic Arnold Rüütel. The body of Members of Academy was given a welcoming speech by Prime Minister Andrus Ansip. The meeting approved the report of the Academy for 2004 and the budget for the current year. On the agenda of the General Assembly was also the paper “Ea Jansen and 50 years of research in Estonian nationalism”, which was delivered in commemoration of Doctor of History Ea Jansen, the recently acclaimed laureate of national science prize for long and productive research and development work, having untimely departed, by her pupil and former colleague Jaanus Arukaevu (see p. 21).

28 April – Vice-President Jüri Engelbrecht participated in Brussels at the meeting of the ERC Identification Committee.

29 April – on occasion of the European Day of Immunology Raivo Uibo, Member of Academy, delivered academic lecture in the Academy Hall “Immunity system: is it just for protection?”

30 April – Academy was visited by delegation of Board of Ernst Schering Research Foundation. The guests were received by Vice-Presidents of the Academy Jüri Engelbrecht and Ain-Elmar Kaasik (see p. 43).

1-4 May – Vice-President Jüri Engelbrecht and Assistant Secretary General Galina Varlamova attended the Days of Estonia organised by Czech Academy of Sciences and the opening of exhibition of Estonian Academy of Sciences in Prague. The expositions “Estonian Academy of Sciences in documents” and “Time of Chronicles” were prepared in co-operation with Estonian National Library, University of Tallinn and the Czech Academy of Sciences. The exhibition stayed open until 20 May.

2 May – Academy was visited by the delegation of the Swedish Parliamentary Committee on education, headed by chairman of the commission Jan Björkman. The meeting was attended by Ambassador of Sweden in Estonia Dag Hartelius. The Academy was represented at the meeting by President Richard Villems, Vice-President Ain-Elmar Kaasik and Members of Academy, sitting in Riigikogu – speaker Ene Ergma, Olav Aarna and Peeter Tulviste.

5 May – Day of Science in Rakvere, organised by Academy and County Government of Lääne-Virumaa (see p. 44).

9-11 May – Vice-Presidents Ain-Elmar Kaasik and Jüri Engelbrecht sojourned in Paris at the conference of Academies of Sciences of new EU members organised by French Academy of Sciences. Member of Academy Engelbrecht took the floor presenting the Estonian Academy of Sciences.

12 May – Academy hosted a seminar organised by Culture Commission of Riigikogu under the general title “Bodies and institutions funding research and development – the directions of development, strategies, problems” (see p. 40).

17-18 May – President Richard Villems attended the annual meeting of General Assembly of Russian Academy of Sciences in Moscow.

18-20 May – Vice-President Jüri Engelbrecht participated at conference organised by ALLEA “Common Values in the European Research Area” in Amsterdam.

18-20 May – Head of Division of the Humanities and Social Sciences Peeter Tulviste attended meeting of International Academic Human Rights Network in London.

23-29 May – Head of Division of the Humanities and Social Sciences Peeter Tulviste participated at 79th annual meeting of *Union Académique Internationale* in Ankara (see p. 53).

26-27 May – Academy organised jointly with Estonian Literary Museum and Estonian Writers Union a conference in Tartu, on occasion of the centenary of the movement “Noor-Eesti” (see p. 38).

31 May – Vice-President Jüri Engelbrecht participated at the meeting of a working group of European Research Advisory Board (EURAB) in Brussels.

8 June – Academy signed an agreement with Estonian National Library on digital archives, in order to provide for long-time preservation of the Academy publications, their continuing repeated use and availability in Internet.

8-10 June – Helsinki hosted the 10th Baltic States conference on intellectual co-operation, attended by representatives of the Academy Vice-President Jüri Engelbrecht, Members of Board of the Academy Mihkel Veiderma and Ene Ergma, Head of Division of the Humanities and Social Sciences Peeter Tulviste and Assistant Secretaries General Galina Varlamova and Anne Pöitel. Jüri Engelbrecht and Peeter Tulviste delivered papers. Galina Varlamova submitted a joint paper with Latvian and Lithuanian colleagues.

9 June – Vice-President Jüri Engelbrecht sojourned in Brussels, where he participated at a meeting of the ERC Identification Committee.

12-13 June – Assistant Secretary General for International Relations Anne Pöitel participated at the European Science Foundation Nordic Meeting in Oslo.

13-14 June - Vice-President Jüri Engelbrecht participated in Brussels at the meeting of European Research Advisory Board (EURAB) working group, and also at its general meeting.

14 June – session of the Board was held. The Board discussed the questions regarding appraisal of the Academy House; designated beneficiaries of grants for completion of research monographs and popular science books; approved a new member to the Energy Council, and the amended regulation of students research prizes; decided to fund, for the purpose of supporting young scientists, the trips to international conferences through Estonian Academy of Young Scientists in 2005; considered it expedient to deepen co-operation and to sign association agreement with Estonian Physical Society. The Board decided to present as candidate of President of ALLEA Jüri Engelbrecht, Member of Academy, and to nominate Enn Mellikov, Member of Academy, as representative of Estonia in the standing committee of physical and engineering sciences of European Science Foundation. The subsequently held extended session heard out the report of Estonian representative of NATO Research Committee (2002– April 2005), Member of Academy Ülo Jaaksoo “Overview of the security research system in NATO and the European Union”.

14 June – association agreement was signed between Estonian Academy of Sciences and Estonian Physical Society.

14 June – presentation of the book “Research prizes of the Republic of Estonia. 2005”.

19-22 June – Secretary General Leo Mõtus participated in Vienna at the meeting of European Academies’ Science Advisory Council (EASAC).

20 June – President Richard Villems sojourned in Helsinki, in order to discuss the science policy and research co-operation issues at meetings in the Academy of Finland, Finnish Ministry of Education and Helsinki University.

22 June – commemorative conference was held in Tallinn University of Technology, dedicated to 75th anniversary of Boris Tamm, Member of Academy, laying flowers at the bust sculpture of Boris Tamm in the inner courtyard of TUT, on Members of Academy Alley (see p. 39).

30 June-1 July – Secretary General Leo Mõtus participated in Amsterdam at the meeting organised by European Science Foundation, focusing on strategy and financial plan of the ESF for 2006–2010.

3-6 July – President Richard Villems and Vice-President Jüri Engelbrecht discussed in Kiev, with leadership of National Academy of Sciences of the Ukraine the directions and ways of further development of research co-operation.

5 September – information day was held in co-operation with the Archimedes Foundation “From students to top-level researchers: European political context and practical steps for supporting career development” (see p. 40).

12 September – Division of Informatics and Engineering and Estonian National Committee for Mechanics organised in Cybernetica House the Nikolai Alumäe academic session. President of the Academy Richard Villems handed over to Jüri Engelbrecht, Member of Academy, the first Nikolai Alumäe medal. Followed the presentation by Jüri Engelbrecht “Complexity, wholeness and physics”.

15-16 September – Secretary General Leo Mõtus attended as observer the working-level meeting of Central and Eastern European Network of Academies (CEN) and the European Commission services in Brussels.

20 September – session of the Board heard out reports of research professors Agu Laisk and Asko Uri for the third working year and made preparations to elect new research professors. The Board decided to accede to the Statement on Biosecurity of the InterAcademy Panel. The Board discussed the questions of renovation of composition of the Commission for International Exchanges and support to publication of the jubilee book (50) of Geographical Society.

20 September – seminar “Knowledge-based Estonia II” at the Estonian Academy of Sciences (see p. 41).

21 September – European Court of Auditors organised, in the Academy House the seminar “The management of EU funding under European 5th and 6th frame programmes and the feedback of scientific community to the effect” (see p. 41).

22-25 September – Vice-President Jüri Engelbrecht participated in Potsdam at 17th annual conference of *Academia Europaea* “The Scientific and Cultural Architecture of Man in Nature”.

28 September – Academy was visited by Consul General of Belarusia in Estonia Alexander Ostrovsky. The Consul General met Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus.

30 September – extended Board of Academy took an exploratory trip to the Järvamaa-based Finnforest Eesti LTD and the Imavere saw-mills (see p. 44).

3 October – newly appointed Ambassador of Republic of Hungary in Estonia István Mohácsi paid homage to the Academy by visiting it. At the meeting with Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus the parties discussed the science policy principles in structuring and funding research in both countries and the role of Academies in promotion of mutual scientific relations.

4-7 October – Vice-President Jüri Engelbrecht participated in Oxford at the final session of the ERC Identification Committee and in Brussels at European Research Advisory Board (EURAB) session.

5 October – Mihkel Veiderma, Member of Academy, delivered academic lecture “Energy as the pivot and pole”.

11-14 October – Vice-President Jüri Engelbrecht visited the Bulgarian Academy of Sciences in Sofia, for participation at the events of the Academy’s anniversary.

15-23 October – Vice-President Ain-Elmar Kaasik sojourned in Shanghai and Suzhou, in order to participate at 28th General Assembly of International Council for Science (ICSU), electing the new Board of ICSU. Vice-President of the Academy Ain-Elmar Kaasik acted as voting proxy also for the Latvian and the Lithuanian partner Academies.

16-19 October – President Richard Villems visited, upon invitation of Montenegrin Academy of Sciences and Arts, the capital city of Republic of Montenegro Podgorica. Villems had a short meeting with President of Republic of Montenegro Filip Vujanović. Presidents of the Academies signed the co-operation agreement thereafter Richard Villems visited the Marine Biology Institute in Kotor.

19 October – meeting in the Tallinn University of Technology by Members of Academy and representative of TUT (see p. 44).

20-21 October – Vice-President Jüri Engelbrecht participated in Manchester at conference “Co-ordination of National Research Programmes: Opportunities and Barriers”.

26-29 October – Vice-President Jüri Engelbrecht participated at the ALLEA Steering Committee meeting in Rome.

9 November – Academy Hall witnessed the 1st General Assembly of the youth association Estonian Academy of Young Scientists.

9-12 November – Vice-President Jüri Engelbrecht participated in Budapest at World Science Forum.

13-16 November – Secretary General Leo Mõtus sojourned in Gothenburg at the conference “Towards a Knowledge Society – the Nordic Experience” and in Munich at the meeting of the energy focused working group of European Academies’ Science Advisory Council.

14-17 November – Senior Reviewer of Scientific Information Department Ebe Pilt participated at conference “Communicating European Research 2005” in Brussels.

16 November – Member of Academy Karl Rebane delivered a public academic lecture “Phonon-free lines, spectroscopy of one molecule, retardation and suspension of light”. The lecture was delivered within the framework of the International Year of Physics 2005.

17 November – Estonian Academy of Sciences was visited by Gunnar Öquist, Secretary General of Royal Swedish Academy of Sciences. There was a meeting and the signing of co-operation agreement between the Academies by Professor Öquist and President Richard Villems. The meeting was attended by Ambassador of Kingdom of Sweden in Estonia Dag Hartelius.

22-26 November – Programme Manager of International Relations Department Lehti Veeväli participated at 2nd annual conference of European Network of Mobility Centres (ERA-MORE) in Bled (Slovenia).

23-26 November – Vice-President Jüri Engelbrecht participated at meeting of General Assembly of European Science Foundation in Strasbourg.

27-29 November – Member of Board of Academy Mihkel Veiderma participated at the first European Energy Policy Conference “Shaping the Future of the Energy Industry in Europe” in Brussels.

6 December – session of the Board, deciding to authorise President Richard Villems to recruit the help of lawyers to work out the draft new version of the Estonian Academy of Sciences Act. The Board approved the composition of commission to assess the candidates for the status of research professor. Professor Anne Lill was appointed as representative of the Academy in international commission “Thesaurus Linguae Latinae”. Bernhard Schmidt Prize for R&D applications in Estonian economy was awarded to collective of young scientists of Cybernetica AS for the work “Software solution for e-voting”. The Board heard out the first draft of development plan of the Academy (2006–2010).

6 December – winners of students’ research works conference was held, where the laureates of best works delivered papers and were handed over diplomas (see p. 39).

8–9 December – Secretary General Leo Mõtus participated at the meeting of European Academies' Science Advisory Council in Helsinki (EASAC).

9 December – meeting of the Commission for International Exchanges of the Estonian Academy of Sciences was held.

14 December – session of General Assembly was held. The keynote speech was delivered by President of the Academy Richard Villems. Vice-President Ain-Elmar Kaasik presented the draft development plan of the Academy for the years 2006–2010. The scientific presentation was delivered by Member of Academy Ilmar Koppel on the topic “Regarding the environmental effects to super-acids and super-alkalis”. Bernhard Schmidt Prize for R&D applications in Estonian economy was handed over to collective of young scientists from Cybernetica AS in the composition of Arne Ansper, Kristo Heero and Sven Heiberg for the work “Software solution for e-voting”. The session of the General Assembly was attended by President of the Republic Arnold Rüütel (see p. 22).

14 December – the special session of the Board elected to the position of research for three years professors Ilmar Koppel, Malle Krunks and Ülo Niinemets.

16 December – Vice-President of the Academy Jüri Engelbrecht was elected by member academies of European Federation of National Academies of Sciences and Humanities (ALLEA) the next ALLEA President for the period 2006–2009.

29 December – Vice-President Jüri Engelbrecht participated at the session of European Research Advisory Board in Brussels.

## **MEMBERSHIP OF THE ACADEMY**

As of beginning 2005, the Estonian Academy of Sciences numbered 60 Members of Academy and 17 Foreign Members of Academy.

On 31 May 2005, Member of Academy Viktor Maamägi deceased and 29 September Foreign Member of Academy Ivar Ugi (see pp. 150-151). On 8 March 2006 Member of Academy Pavel Bogovski and 14 March 2006 Member of Academy Lennart Meri departed.

As of 31 December 2005, the Estonian Academy of Sciences numbered 59 Members of Academy and 16 Foreign Members of Academy, who distributed between the four divisions as follows:

### **DIVISION OF ASTRONOMY AND PHYSICS**

(15 Members of Academy, 4 Foreign Members of Academy)

Members of Academy: Jaak Aaviksoo, Jaan Einasto, Ene Ergma, Vladimir Hizhnyakov, Harald Keres, Georg Liidja, Endel Lippmaa, Ülo Lumiste, Cheslav Lushchik, Karl Rebane, Peeter Saari (Head of Division), Mart Saarma, Arved-Ervin Sapar, Gennadi Vainikko, Richard Villems.

Foreign Members of Academy: Richard R. Ernst, Charles Gabriel Kurland, Jaan Laane, Indrek Martinson.

### **DIVISION OF INFORMATICS AND ENGINEERING**

(13 Members of Academy, 4 Foreign Members of Academy)

Members of Academy: Olav Aarna, Hillar Aben, Jüri Engelbrecht, Ülo Jaaksoo, Lembit Krumm, Valdek Kulbach, Rein Küttner (Head of Division), Ülo Lepik, Enn Mellikov, Leo Mõtus, Arvo Ots, Enn Tõugu, Raimund-Johannes Ubar.

Foreign Members of Academy: Antero Jahkola, Gérard A. Maugin, Endrik Nõges, Michael Godfrey Rodd.

### **DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY**

(18 Members of Academy, 4 Foreign Members of Academy)

Members of Academy: Jaak Järv, Ain-Elmar Kaasik, Dimitri Kaljo, Ilmar Koppel (Head of Division), Hans Kүүts, Agu Laisk, Ülo Lille, Udo Margna, Jüri Martin, Viktor Palm, Erast Parmasto, Anto Raukas, Loit Reintam, Valdur Saks, Hans-Voldemar Trass, Raivo Uibo, Mart Ustav, Mihkel Veiderma.

Foreign Members of Academy: Carl-Olof Jacobson, Johannes Piiper, Jānis Stradiņš, Helmut Schwarz.



DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES  
(11 Members of Academy, 4 Foreign Members of Academy)

Members of Academy: Mihhail Bronshtein, Raimund Hagelberg, Arvo Krikmann, Arno Kõörna, Uno Mereste, Juhan Peegel, Jaan Ross, Huno Rätsep, Karl Siilivask, Peeter Tulviste (Head of Division), Haldur Õim.

Foreign Members of Academy: Els Oksaar, Päiviö Tommila, Endel Tulving, Henn-Jüri Uibopuu.

In 2005, the majority of Members of Academy carried on as leading expert scientists, doing research and working as staff members in universities.

Research done by Members of Academy was very fruitful, as a whole, as revealed by numerous publications.

Besides their main occupation, many Members of Academy acted as experts and advisers. Following Members of Academy sit on national expert panels and councils:

Riigikogu – Ene Ergma (Speaker of Riigikogu), Olav Aarna (Chairman of Culture Commission of Riigikogu), Peeter Tulviste;

Academic Council of the President of the Republic – Jaak Aaviksoo, Jüri Engelbrecht, Ene Ergma, Ülo Jaaksoo, Ain-Elmar Kaasik, Endel Lippmaa, Mihkel Veiderma, Richard Villems;

Research and Development Council – Jaak Aaviksoo, Mart Saarma, Richard Villems;

Science Competence Council – Enn Mellikov;

Council of the Estonian Science Foundation – Ain-Elmar Kaasik, Ilmar Koppel and Rein Küttner;

Commission of National Science Prizes – Richard Villems (Chairman of Commission), Dimitri Kaljo, Rein Küttner, Enn Mellikov, Jaan Ross, Mart Saarma, Raimund-Johannes Ubar, Raivo Uibo.

Members of Academy Richard Villems and Ain-Elmar Kaasik sit on the Sustainable Development Commission, reporting to Government of the Republic.

Members of Academy Endel Lippmaa and Jaan Ross are members of Higher Education Quality Assessment Council.

Member of Academy Ülo Jaaksoo represented (from 2002 – April 2005) Estonia in NATO Research Committee and was member of European Security Research Advisory Board (ESRAB).

Member of Academy Richard Villems was Counsellor of the European Commission R&D Framework Programme.

Member of Academy Leo Mõtus is member of Estonian National Committee for UNESCO.

Member of Academy Mihkel Veiderma is member of Estonian National Committee of the World Energy Council (WEC).

Members of Academy Ülo Jaaksoo, Rein Küttner and Richard Villems are members of Innovation Policy Commission, reporting to Minister of Economic Affairs and Communications.

Members of Academy Jüri Engelbrecht (Chairman of Commission) and Rein Küttner sit on the Ministry of Education and Research Commission for R&D Strategy 2007–2010.

Members of Academy Olav Aarna, Ilmar Koppel, Rein Küttner, Peeter Saari and Peeter Tulviste sit on the Ministry of Education and Research Advisory Panel for Science Policy.

Member of Academy Ülo Jaaksoo is member of Informatics Council at Ministry of Economic Affairs and Communications.

Member of Academy Jaak Järv is member of Estonian-Russian inter-governmental co-operation commission.

Member of Academy Dimitri Kaljo is Chairman of Estonian Mineral Resources Commission.

Members of Academy Peeter Tulviste (Chairman), Ülo Jaaksoo, Leo Mõtus and Enn Tõugu are Members of Scientific Council of the Ministry of Defence.

Member of Academy Ain-Elmar Kaasik is Chairman of Registration Commission of State Agency of Medicines.

Member of Academy Ülo Jaaksoo is member of Board of Curators of Tallinn University of Technology.

Members of Academy Richard Villems (Chairman of Council), Ain-Elmar Kaasik, Jüri Martin and Mart Saarma are members of Supervisory Board of the Estonian Genome Project.

Member of Academy Haldur Õim is member of the Estonian Language Council.

Members of Academy Jaak Järv and Rein Küttner, Enn Mellikov and Richard Villems represent Estonia in committees of the sixth EU framework programme 2002-2006 for scientific research, technological development and promotion activities.

Many Members of Academy continue in editorial boards of international scientific organisations and scientific journals.

Heads of Centres of Excellence of Estonian Science are Members of Academy:

Jüri Engelbrecht – Centre for Nonlinear Studies;

Ilmar Koppel – Centre of Excellence in Chemistry and Materials Science;

Arvo Krikmann – The Centre of Cultural History and Folkloristics in Estonia;  
Endel Lippmaa – Centre of Excellence of Analytical Spectrometry;  
Raivo Uibo – Centre of Molecular and Clinical Medicine.

Member of Academy Ilmar Koppel was awarded, in the reporting year the national science prize for long and productive research and development work (see p. 77).

Member of Academy Haldur Õim was granted the F. J. Wiedemann linguistic prize.

Member of Academy Jüri Engelbrecht was elected President of European Federation of National Academies of Sciences (ALLEA – *All European Academies*) for the years 2006–2009.

Member of Academy Richard Villems was elected Foreign Member of Latvian Academy of Sciences.

Member of Academy Haldur Õim was elected Member of *Deutsche Gesellschaft für Kognitive Linguistik*.

Member of Academy Jüri Engelbrecht was granted the Service Order “Knight’s Cross” of the Republic of Poland and the Marin Drinov Medal of the Bulgarian Academy of Sciences.

Member of Academy Ene Ergma was granted the Service Order “Commander’s Cross with Star” of the Republic of Poland.

The Foundation of University of Tartu bestowed the Town Hall Prize on Members of Academy Mart Ustav and Peeter Tulviste.

The Foundation of Estonian National Culture granted to Member of Academy Harald Keres the commendation prize for the work of life.

Foreign Members of the Academy continued participation in the activity of Academy and research institutions of Estonia, maintaining the time honoured contacts and earlier scientific engagements.

## RESEARCH PROFESSORS OF THE ACADEMY

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In 2002, Estonian Academy of Sciences elected for the first time by contest three Research Professors. The three-year period has been completed successfully – both the expert assessments and opinions of base institutions were very high regarding the outcome of work of Research Professors. Short annotations of results of work performed by them and the groups whom they supervised follow.

Member of Academy *Agu Laisk*

Original optical and gas-exchange combined measurement methods were worked out making it possible to fully monitor the status of the photosynthetic processes in intact leaves. The obtained information was condensed in the form of a mathematical model for the biochemical essence of photosynthesis, designed to calculate the dependence of photosynthesis on environmental parameters and enzyme activities.

Member of Academy *Raimund-Johannes Ubar*

New efficient models, methods and algorithms were developed for diagnosis of digital systems, and for synthesis and analysis of tests to cope with new technological challenges. Efficient tools were created for designing self-testing systems and for estimating the quality of testing.

*Asko Uri*

New flexible solid state synthetic methods were developed for the production of non-phosphate nucleotide analogues. The biological activity of those novel compounds was tested as suppressors of the aggregation of blood platelets. Bifunctional inhibitors of basophilic protein kinases were designed. A fluorometric assay for measuring protein kinase activity was developed.

In 2005, a new contest was organised. For three positions of Research Professors there were elected for the period 2006–2008:

Extraordinary Professor of the University of Tartu, Member of Academy  
*Ilmar Koppel,*

Leading research scientist of Tallinn University of Technology  
*Malle Krunks,*

Professor of Estonian University of Life Sciences *Ülo Niinemets.*

# **GENERAL ASSEMBLY, BOARD, DIVISIONS, COUNCILS, COMMISSIONS**

## **GENERAL ASSEMBLY**

In 2005, the General Assembly of the Academy was convoked to a regular session two times:

- |             |   |
|-------------|---|
| 27 April    | annual meeting  |
|             | <ul style="list-style-type: none"><li>• Paper delivered by Jaanus Arukaevu “Ea Jansen – 50 years of research into Estonian nationalism”</li><li>• Report by President Richard Villems “Report for 2004 of Estonian Academy of Sciences”</li></ul>                                 |
| 14 December | <ul style="list-style-type: none"><li>• Research paper by Ilmar Koppel “Regarding the environmental effects to super-acids and super-alkalis”</li><li>• Presentation by Ain-Elmar Kaasik “Regarding the development plan of Estonian Academy of Sciences for 2006-2010”</li></ul> |

The annual meeting was the 59th in succession. As ever, the session focused on summing up the activities of the Academy in the previous year. General Assembly approved the consolidated report of financial activity of the Academy for 2004 and the budget for 2005. Detailed data on activities of the Academy in 2004 were made available in the newly published Estonian Academy of Sciences Year Book X (37), which had been previously mailed to Members of Academy.

The Academy’s annual meeting was attended by President of the Republic of Estonia Arnold Rüütel, Mrs. Ingrid Rüütel, and Prime Minister Andrus Ansip.

After the opening address by President of Academy Richard Villems, the floor was given to Prime Minister Andrus Ansip, who emphasised the joint efforts of Estonian scientific community, Academy of Sciences and Government of the Republic in development of the language of scientific research in Estonian, and who also considered it important for the basic textbooks of universities to be in Estonian.

General Assembly stood up in commemoration of the late Dr. Ea Jansen, whose paper as laureate of prize for the work of life for 2005 was on agenda of the General Assembly. The thoughts put down by Dr. Ea Jansen about her life and the last 50 years of research into Estonian nationalism were reported by her student Dr. Jaanus Arukaevu.

The keynote report of the annual meeting “Report for 2004 of Estonian Academy of Sciences” was made by President Richard Villems, who pointed

out the multifaceted obligations of Members of Academy in Estonia and internationally, indicative to the role of membership of the Academy in society. The speaker was asked questions by Members of Academy Karl Rebane, Udo Margna and Lembit Krumm.

Upon move by President, the General Assembly approved the report of 2005 of the Academy, based on the presentation by President and materials presented in Year Book.

Vice-President Ain-Elmar Kaasik, acting Secretary General, presented the budget of the Academy for 2005, which General Assembly approved. A question was posed by Member of Academy V. Kulbach.

Speaking during the negotiations were Members of Academy Karl Rebane, Jüri Engelbrecht, Jaak Aaviksoo, Hillar Aben, Enn Tõugu, Endel Lippmaa, Mihkel Veiderma, Peeter Tulviste, Karl Siilivask and Lembit Krumm.

The second regular session of General Assembly was held on 14 December. Attending the first half of the session were President of the Republic of Estonia Arnold Rüütel, Mrs. Ingrid Rüütel, and Prime Minister Andrus Ansip.

President Richard Villems delivered an extended speech. President Richard Villems handed over the Bernhard Schmidt prize to the collective of young scientists in the composition of Arne Ansper, Kristo Heero and Sven Heiberg for the work “Software solution of e-voting” (see p. 47).

The scientific paper on the topic “Regarding the environmental effects to super-acids and super-alkalis” was presented by laureate of the prize of 2005 for long-time research and development work, Member of Academy Ilmar Koppel. The questions were posed by Members of Academy Agu Laisk, Richard Villems and Viktor Palm and Dr. Tõnu Viik.

Vice-President Ain-Elmar Kaasik presented the draft of the “Development plan of Estonian Academy of Sciences for 2006-2010” and asked for proposals and additions from Members of Academy. He highlighted, as the most important tasks, the setting up at Academy of the Strategic Analysis Group and the Advanced Study Institute; involvement of young scientists in Academy’s work and recording the basic events in Academy and activities of Members of Academy in the annals of history. The questions were posed by Members of Academy Arved-Ervin Sapar, Dimitri Kaljo, Peeter Saari, Richard Villems, Viktor Palm, Haldur Õim and Valdek Kulbach.

Taking the floor during negotiations were Members of Academy Jüri Engelbrecht, Hillar Aben, Anto Raukas, Karl Siilivask, Agu Laisk, Richard Villems, Jaak Aaviksoo and Peeter Saari and Dr. Helle Martinson.

## BOARD

Board of the Estonian Academy of Sciences worked in 2005 in the following composition:

President	<i>Richard Villems</i>
Vice-President	<i>Ain-Elmar Kaasik</i>
Vice-President	<i>Jüri Engelbrecht</i>
Secretary General	<i>Leo Mõtus</i>
Head of Division of Astronomy and Physics	<i>Peeter Saari</i>
Head of Division of Informatics and Engineering	<i>Rein Küttner</i>
Head of Division of Biology, Geology and Chemistry	<i>Ilmar Koppel</i>
Head of Division of the Humanities and Social Sciences	<i>Peeter Tulviste</i>
Non-Executive Members	<i>Ene Ergma</i>
	<i>Endel Lippmaa</i>
	<i>Enn Mellikov</i>
	<i>Jaan Ross</i>
	<i>Enn Tõugu</i>
	<i>Mart Ustav</i>
	<i>Mihkel Veiderma</i>
	<i>Haldur Õim</i>

In that year the Board held five working meetings and one extended session. Once, the decisions were passed by electronically polling the opinions.

The first session discussed and approved the distribution of work between members of new Board elected at the end of past year. At the same session, the Board approved previously discussed calendar plan of events of Academy for 2005, taking into account the proposals of Divisions. The said plan was in broad outlines fulfilled, by the end of year.

In connection with inauguration of President Richard Villems, which took place at the beginning of the year, the Board considered and approved the theses of the inauguration speech on development strategy of Academy.

The extended session of 14 June heard out the report of Member of Academy Ülo Jaaksoo (Estonian representative of NATO Research Committee and Council of NATO Research and Technology Organisation from 2002–April 2005) “Overview of the security research system in NATO and the European Union”.

In connection with expiration of the third working year of research professors, on 20 September the Board heard out and approved the reports by research professors Agu Laisk and Asko Uri. The session discussed the conditions of electing new research professors and assigned to Divisions the task to discuss the experience of earlier contests of research professors and to appoint the representatives to the commission on supplementation of regulation of the

contest, whose composition was approved on 6 December (Chairman of the Commission Vice-President Ain-Elmar Kaasik). The said Commission discussed the applications received for contest of research professors and presented their own recommendations to the Board, who elected at the last session of the year, on 14 December, as research professors Professor of University of Tartu Ilmar Koppel, leading research scientist of Tallinn University of Technology Malle Krunks and senior research scientist of University of Tartu Ülo Niinemets.

Of named medals of the Academy, it was decided to award the Nikolai Alumäe medal to Member of Academy Jüri Engelbrecht for achievements in the area of mechanics; the Board approved the statute of Wilhelm Ostwald medal.

Board deemed it expedient to deepen co-operation with Estonian Physical Society and agreed with the proposal of the Society to sign the association agreement with the Academy. In connection with liquidation of Institute of Zoology and Botany of the Estonian University of Life Sciences as an independent R&D institution, the Board decided to consider the association agreement between the Institute and Academy as terminated on 1 January 2005.

The session of the Board held on 6 December heard out information of Chairman of Commission on contest of students' works Member of Academy Georg Liidja about the results of contest of the best students' works. After the session, at the conference held, the winners of the contest of the students' works delivered three papers (see p. 39); the winners were handed over diplomas. The Board decided to grant at its session, by contest, the scholarships for completion of research monographs and popular science books, and for getting them ready to publication; a respective commission was set up for consideration of the applications (Chairman Member of Academy Loit Reintam), upon whose proposition the scholarships were assigned (see p. 48). The Board approved the composition of the Commission (Chairman Member of Academy Hillar Aben) for consideration of works submitted for B. Schmidt Prize (see p. 47). The Board passed a decision on extending the composition of Energy Council of the Academy.

A considerable part of the Board's work was constituted by discussions and taking decisions in issues, related with current activities. For instance, the Board considered the financial report for 2004 of the Academy and presented it to approval by General Assembly. Board considered the principles of composing the Academy budget. The budget composed under those principles was presented for approval to General Assembly, and at the end of the year the amendments to the budget were approved. The Board established the salaries of the management and assigned the annual bonuses and approved the structural changes of the Academy Office. The Board discussed the use of



Academy name and logo by organisers of international conferences. It was decided to support the assignment trips of young scientists to international conferences. The Board approved the decision of scientific council of Under and Tuglas Literature Centre on re-election of Jaan Undusk to the office of Director for the subsequent five years. It also approved the new composition of scientific council of the Centre. The Board discussed holding the Science Day of the Academy in Rakvere. It decided to support monetarily the issue of 50th jubilee yearbook of Geographical Society. Under discussion was modernisation of technical basis of the Academy and reassessment of value of the Academy House. The Board agreed with the expert appraisal by *OÜ Vanalinna Kinnisvarakeskus*. The Board started work on elaboration of new version of Academy Act and authorised President R. Villems to engage lawyers in that work. In the reporting year, the Board also started composing the development plan of the Academy (2006–2010), the draft of which was considered for the first time at the session of 6 December. After that the Board decided to present the draft development plan to General Assembly for consideration and to request proposals of Members of Academy. It discussed and approved the agendas of sessions of General Assembly.

In connection with election of the new Board of Academy, Vice-President Ain-Elmar Kaasik was nominated representative of Academy in Council of Estonian Science Foundation and Sustainable Development Commission, reporting to Government of the Republic. Nominated as representative of Academy in Publishing Council of Estonian Academy of Sciences, besides Jüri Engelbrecht, was Secretary General Leo Mõtus. Secretary General Leo Mõtus was nominated representative of Academy also in Council of Associated Scientific Societies and in Estonian National Committee for UNESCO. Continuing as representative of Academy in Estonian-Russian inter-governmental co-operation commission is Member of Academy Jaak Järv. The Board approved the new composition of Council for International Exchanges (Chairman Member of Academy Jüri Engelbrecht).

In several occasions, the sessions of Board subjected to consideration the issues related to work of international science organisations and nomination of Estonian representatives to respective commissions. It was decided to present Member of Academy Jüri Engelbrecht to the post of a candidate to Presidency of European Federation of National Academies of Sciences and Humanities (ALLEA). The Board deemed it expedient to present candidates from Estonia to European Research Council (ERC) and to support suitable candidates from Nordic countries. Appointed as representative of Estonian Academy of Sciences in international Commission “Thesaurus linguae Latinae” was Professor Anne Lill of University of Tartu.

The sessions of Board heard out the President’s information about EU’s financial perspectives in the years 2007–2013, as well as the overview of present situation and needs of data communication of R&D activities, of budget of

Estonian R&D activity in 2006, overview of activities of Estonian Science Foundation, Science Competence Council and R&D Council.

Board passed the decision to join the statement of InterAcademy Panel on International Issues (IAP) on biosecurity. Member of Academy E. Lippmaa drew the attention of the Board to the obligation to observe the positions of the IAP memorandum and made a proposition to refer with a letter to the Government of the Republic, in this issue.

## DIVISIONS\*

### DIVISION OF ASTRONOMY AND PHYSICS

Pointed out separately in the activities of the Division may be:

- Joining to statement on biosecurity of InterAcademy Panel on International Issues (IAP), prepared by Endel Lippmaa;
- Formation of a Commission headed by Jaak Aaviksoo, to formulate the position of Academy on compatibility of the activity of the bio-engineering company *Celecur* with the IAP statement on biosecurity (proposal of Peeter Saari);
- Compilation of the volume “Scientific thinking in Estonia. Exact sciences” together with Division of Biology, Geology and Chemistry;
- Academic lectures in the framework of World Year of Physics 2005: K. Rebane – 1 lecture, P. Saari – 2 lectures.

Georg Liidja is Chairman of editorial board of the series “Physics. Mathematics” of Proceedings of Academy of Sciences, Ülo Lumiste and Gennadi Vainikko – members.

The events held with participation from Division and members of Division:

- Upon initiative of Ene Ergma, there was held a joint session in spring of leadership of the National Institute of Chemical Physics and Biophysics and Board of Physicum of the University of Tartu with the aim of deepening further co-operation.
- By contribution from Division, there was an association agreement made between Estonian Physical Society and Academy of Sciences.
- According to decision by assembly of the Division of 2004 to support celebration of World Year of Physics 2005, Peeter Saari has contributed to respective undertakings by young students of physics.
- There was a virtual dispute with Board of Professors’ Club of the University of Tartu in the issue, whether it is befitting to Professors’ Club to propagate the pseudoscience.

Decisions of Meeting of Division taken through Internet:

- Election of Georg Liidja Deputy Head of Division;
- Presentation of candidacy of Endel Lippmaa to Commission of National Thinking Prize at the University of Tartu;
- Creation wide resonance to the problem range of reform of curricula.

Members of Division represented Academy or Division in several science organisation decision-making bodies (see “Membership”).

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\* Composed on the basis of materials submitted by Heads of Divisions Peeter Saari, Rein Küttner, Ilmar Koppel and Peeter Tulviste

## DIVISION OF INFORMATICS AND ENGINEERING

In March 2005 the Meeting of Division decided to present as candidate for Nikolai Alumäe medal Member of Academy Jüri Engelbrecht. Medal was handed over to J. Engelbrecht in September at the seminar related to Estonian Days of Mechanics.

In connection with 75th anniversary of Member of Academy Boris Tamm the Division organised, together with Tallinn University of Technology, on 21 June 2005 conference to commemorate Boris Tamm. Conference heard out scientific papers in the domain of IT and computer science. In the foyer of Tallinn University of Technology, there was set up an exhibition presenting the activity of Member of Academy Tamm, published anew were some research works of Member of Academy Tamm, seconded by those of his students and a volume presenting their activity.

In November 2005 the Meeting of Division discussed the activity of organisations financing research, in particular the financing of engineering sciences. The members of Division submitted several recommendations to representatives of engineering sciences in respective funding bodies:

- To take into account, in funding bodies (Science Competence Council, Estonian Science Foundation), full texts of papers published in the proceedings of large international conferences, characteristic specifically to engineering sciences;
- To support wider use of foreign reviewers when assessing grant applications submitted to Estonian Science Foundation. The foreign reviews of applications for 2006 show that the quality of applications in engineering sciences falls between grades “good” and “very good”, while the monetary means allocated have not actually increased in the past three years and they are sufficient to fund only ca. 1/3 of new applications. Meeting of the Division recommended to draw the attention of heads of Estonian Science Foundation and Ministry of Education and Research to inadequacy of Estonian Science Foundation moneys;
- Regarding the Foundation Enterprise Estonia, the Estonian research community is perceptibly lacking information about options of funding.

In November 2005 Meeting of the Division discussed the present situation with R&D strategy “Knowledge-based Estonia II”. A report was made by Jüri Engelbrecht. In the ensuing discussion members of Division emphasised the need to more specifically determine the strategy of funding the R&D activity up to 2013 and to identify and highlight specifically, besides funding the development activity and innovation, the funding of research. The main problem of applied science (including engineering) in Estonia is inadequate funding of applied research by Foundation Enterprise Estonia. The document

of strategy should more precisely determine specific developments in this area. It was suggested that the Division should support the existing priority of research domains, as listed in the strategy.

Upon moderation and direct participation of members of Division there were organised several larger conferences and seminars, e.g. seminars on activity and problems of development of bodies and institutions funding the R&D (see p. 40), on strategy of R&D for 2007–2013 and on organisation of research in protection and security in Estonia.

Members of Division participated in organisation of following scientific conferences and seminars in Estonia:

- May “10th IEEE European Test Symposium”, Raimund Ubar;
- May “5th Glass Stress Summer School”, Hillar Aben;
- June “NATO workshop “Data Fusion”, Ülo Jaaksoo;
- September “Estonian Days of Mechanics”, Jüri Engelbrecht;
- September “9th East-European Conference on Advances in Databases and Information Systems”, Enn Tõugu.

Members of Division represented Academy or Division in several science organisation decision taking bodies (see “Membership”).

#### DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

In 2005, there were two extended meetings of Council of Division and one extended General Meeting of the Division.

Extended meetings of Council of Division held on 18 February and 10 March (electronic) were dedicated to making and specifying the working plan 2005 of the Division, to hearing out and discussion of the 2004 report of Division and to issues related to granting the named medals of Academy. The members discussed and assessed the proposals and positions of Division in connection with Estonia’s strategy of R&D activity for 2007–2010.

On 27 March, there was held the extended General Meeting of the Division, in the first half of which the options of furthering the school instruction in the form of conference/seminar, including the discovery instruction (Professor T. Tenno), use of computer in teaching natural sciences (Member of Academy Jaak Järv). Extended meeting/seminars were attended by officials of Ministry of Education and Research, teachers of upper-secondary schools and other interested academic persons. The papers were followed by lively discussion and several interventions. In view of the topicality and vital importance of the subject, it was decided to set up a commission headed by Jaak Järv, to further handle the issue.

In the second part of the General Meeting of 27 March (with Members of Academy only) it was decided to approve the report for 2004 of Division and

after a discussion and additions, the plan of important events of Division in 2005. It was decided to make a proposal to Board of Academy to establish the Wilhelm Ostwald Medal, issued for outstanding achievements in chemistry and related areas.

Upon initiative of Division, on 12 April there was held an inter-Division conference dedicated to the present status of centres of excellence in research and perspectives for development (see p. 37), where heads of all 10 centres of excellence or their representatives submitted papers. Indisputably, the centres of excellence called to life in 2001–2002 are important institutions for promotion of high level R&D activity. The successes and shortcomings of all centres of excellence were given a competent assessment by the international expert commission of competition for bolstering the infrastructure of centres of excellence (November 2005).

In April 2005, the commemorative conference on occasion of Viktor Masing's 80th anniversary was held, organised with participation of Members of Academy Hans-Voldemar Trass and Erast Parmasto.

In June there was held in Tallinn an international conference with *ca* 250 participants "Science-intensive materials and technologies and sustainable chemistry", a sponsor of which was Estonian Academy of Sciences. The international steering committee of the conference included Ilmar Koppel (Chairman) and Mihkel Veiderma, from the Division.

Delivering public academic lectures, among members of Division were Raivo Uiho "Immune system: for protection only?" and Mihkel Veiderma "Energetics as pivot and pole".

A lecture at Academy's General Assembly on 14 December "Regarding the environmental effects to super-acids and super-alkalis" was delivered by laureate of national science prize 2005 for the work of life Ilmar Koppel.

On 8 February, there was presentation of volume "Scientific thinking in Estonia. Medical science" edited by Members of Academy Ain-Elmar Kaasik and Raivo Uiho and belonging to the series of the so-called "Blue books".

Members of Division represented the Academy or Division in several science organisation decision-making bodies (see "Membership").

Continuing activity at Division were Nature Protection Commission and Commission of Meteoritics.

NATURE PROTECTION COMMISSION (chaired by Urmas Tartes) is continuing, as a result of latest reorganisations, the activity under the name of Institute of Agriculture and Environmental Protection of Estonian University of Life Sciences, however in the former premises in Baer House.

There were organised the 44th Day with Papers and three general meetings, and celebration of the 50th year in action of the Commission. Several public exhibitions were composed to celebrate the jubilees of the nature protection activists. From print appeared the volume edited by Loit Reintam "Soil in ecosystem, monitoring and protection".

The general meetings focused on issues related to reform of nature protection, and the respective proposals were submitted to Ministry of the Environment. The 44th Day with Papers dedicated to genetically engineered organisms was held in the hall of Ministry of the Environment in Tallinn on 27 May 2005 in co-operation with Estonian University of Life Sciences and Ministry of the Environment. Speaking were Urmas Tartes, Viive Rosenberg, Lilika Käis, Erkki Truve, Alar Karis, Mati Koppel, Anne Luik, Nastja Pertsjonok, Kaul Nurm, Kalevi Kull. Displayed for the attention of participants was an exposition from earlier Days with Papers and publications of Commission (compiled by V. Hang).

On 23 November 2005 Commission celebrated the 50th anniversary of its activity. A respective meeting was held in Baer House, analysing the historical aspects of activity of the Commission and peering into the future. Delivering papers were Urmas Tartes, Richard Villems, Hans Trass (founding member of Commission), Loit Reintam, Tiit Sillaots (Ministry of the Environment) and Meelis Tambets.

The year of 2005 was the year of anniversaries of Estonian nature protection movement. In view of that the Nature Protection Commission of Estonian Academy of Sciences staged several public expositions (compiler and arranger V. Hang), like Gustav Vilbaste 120, Endel Varep 90, Viktor Masing 80, the first nature protection act of Estonia 70, Vilsandi national park 95, Enn Pirrus (laureate of Kumari prize), Kuulo Kalamees 70. The exposition Nature Protection Commission 50 provided a thorough overview of activity of Commission in word and picture.

COMMISSION OF METEORITICS (chaired by Member of Academy Anto Raukas) continued in co-operation with French scientists (Dr. F. Marini) the research of morphology of pulverised spherules of Kaali, their chemical composition and genesis, collecting for comparison also technogenic spherules from the Kiviõli semicoke tailingspile. On the basis of co-operation project and exchange programme between Academy of Sciences of Poland and Estonian Academy of Sciences, a comparative study of Kaali crater and Morasko crater was carried out.

The Commission continued research of craters of Neugrund and Kärddla and the pulverised matter originating from them, and modelling of the craters.

With support from Wihuri Foundation there was the first fieldwork carried out of the non-formal association European Students for Impact Research (ESIR)

in Ilumetsa crater field, where the possibilities of seismometry, magnetometry, electrometry and georadar were considered, in research of Holocene craters.

With participation of the Commission, on 17 June there was opened the Kaali visiting centre and museum of meteoritics, the selection of exhibits of which was made by scientific secretary of the Commission Reet Tiirmaa. In print, an overview was presented about the morphology of Kaali main crater. Kaali craters were presented to Presidents of Poland and Lithuania, to Prime Minister of Latvia and to numerous sightseers from many countries.

Members of Commission participated in organisation of the 10th national gathering of amateur astronomers in Kaali. It also participated in preparation of materials for UNESCO World Heritage Committee for recording the North Estonian bluff (limestone shore) in the list of UNESCO World Heritage.

#### DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

There was one meeting of the Division on 4 November 2005.

The meeting discussed in-depth the project, having earlier repeatedly been under consideration, on recording the memoirs of Members of Academy and on concrete starting therewith. For that purpose, a preliminary meeting had been held between Head of Division Peeter Tulviste with Professor in History of the University of Tartu Tiit Rosenberg and with Mrs Ene Kõresaar, directly co-ordinating the project. In view of the idea to collect memoirs of Members of Academy, a thought evolved to set up again in Academy of Sciences the Historical Commission, in particular considering the approaching jubilee of Academy in 2008.

The visions for the future of the Division were considered, too. The Division planned celebration of 120th anniversary of Member of Academy Fr. Tuglas together with Under and Tuglas Literature Museum, taking into consideration the context that the said anniversary is in a unified framework with “Noor-Eesti” and events of the 100th anniversary of the 1905 revolution, which merit solid celebration, as an important benchmark to the Estonian people.

Worthy mentioning of larger events is the series of events of the 100th jubilee anniversary of Member of Academy Paul Ariste.

Memory of Member of Academy Jüri Uluots was celebrated in co-operation with Ministry of Foreign Affairs of Republic of Estonia, by laying a wreath on his grave in Stockholm cemetery.

8 March – Board of Academy visited the Estonian Literary Museum (see p. 43).



1 April - F. J. Wiedemann's 200th jubilee anniversary was celebrated with a scientific conference in the Academy House, with papers from Members of Academy Arvo Krikmann and Huno Rätsep (see p. 37).

5 May – a Day of Science in Lääne-Virumaa, Rakvere, with a paper also from Member of Academy Arvo Krikmann (see p. 43). Because of impressive acclaim accorded to the event locally, the County Government expressed its wish to hold a follow-up event in the following year, which has also been planned for 5 May.

Peeter Tulviste spoke to the regular conference in Ankara of *Union Académique Internationale* (UAI), making a proposal to bolster the role of social sciences in the work of UAI (see appendix 1 p. 156).

Members of Division represented Academy or Division in several science organisation decision-making bodies (see “Membership”).

## COUNCILS

### ENERGY COUNCIL

Estonian Academy of Sciences Energy Council (Chairman Member of Academy Mihkel Veiderma) continued in 2005 elaboration of crucial issues of Estonian energy economy and laying down its standpoints. Council held altogether three sessions. Invited to those session to deliver papers or participate had been representatives of several enterprises and institutions from the energy domain.

10 February - Council discussed the situation of processing the oil shale and the options for development. Having heard out papers by Jaanus Purga (Viru Chemistry Group) and Nikolai Golubev (Narva Power Plants), having pointed out the perspectives of production of shale oil products, in the conditions of ever increasing price of petroleum products both for the need of domestic market and for export, Council decided:

- to consider as important, besides the energy, based on burning of the oil shale, also the development of combined production of oil and gaseous fuel. For that purpose, it is necessary to comprehensively elaborate the development scenarios of both directions, as a sub-programme of long-term development plan of the national fuel and energy economy, relating them to the change of quantity and quality of oil shale and the location of excavation fields;
- to consider it important to review the national regulation with respect to use of oil shale deposits, in order to increase the liability of a company, when it applies for mining rights, for target specific and rational use;
- to promote in oil shale related R&D works the co-operation with other countries possessing oil shale deposits, to request Tallinn University of Technology and enterprises to take care of succession of oil shale R&D works and how to consolidate them.

31 March – the Council heard out Mati Meos' (Estonian Power and Heat Association), Erki Niitlaan's (Estonian Peat Union) and Jaan Tepp's (Estonian Wind Power Association) papers on use of biofuel and peat and wind energy and their potential in Estonian energy.

Council recommended to carry out a thorough analysis of use of renewable energy sources and cogeneration of heat and electricity, embracing the issues of resource, efficiency, regulation and price and cohesiveness with power system as a whole, to develop, for use of renewable energy, more extensively the regional project-specific approach, involving the energy companies, local self-governments, and investors. To compensate for the temporal change of load, it was considered necessary to speedily set up a suitable flexible gas station.

Council considered fully possible to elevate the share of renewable sources of energy to 5.1% by 2010, using for that in optimum ratio the wood, wind and hydroenergy.

At the session of Council on 5 July, the main item on agenda was draft development plan of national power economy. Having heard out the reports by Ando Leppiman (Ministry of Economic Affairs and Communications) and Enn Kareda (Estonian Institute for Sustainable Development), Council pointed out that in general outline the draft could be accepted, however it made a number of critical observations, to be taken into account when improving the draft or before consideration of the new development plan in three years. It was pointed out, for that matter that given the perspective of the draft for the period until 2015, as early as in 2016 there will be a deficit of capacities. The draft has tacitly overlooked the export-import of electricity (export constituted in 2003 35% of domestic consumption), and also the measure to be applied for fulfilment of the EU requirement regarding transition to free electricity market. The assessments about increase of electricity price presented in the draft have remained indeterminate, especially with respect to environmental taxes, in respect of subsidies for renewable energy and repayment of loans; the cover sources of investments have not been laid out. Council emphasised the need to elaborate in more detail, on basis of national programme, the task of optimising the energy system, also taking into account the connections with the Baltic States and Finland, and to develop the energy-specific competence by multi-level training in Estonia and abroad, including in the area of nuclear, hydrogen and microenergy.

The same session considered also the issue of environmental taxes in the energy sector and export of electricity to the Baltic States. Council considered it necessary to carry out deeper analysis about impact of taxes on price of electricity and through it on the state's economy sector and population, enabling export of electricity in the quantity and for the price, not damaging the Estonian electricity system and interests of the electricity consumers.

Materials of sessions of the Energy Council with critical observations and proposals contained therein were dispatched to Riigikogu, respective ministries, institutions and enterprises. The positions of the Council have met with due understanding on their part, they are being taken into account over the time in the greater degree.

Members of Council have participated in several energy related discussions and have made public their standpoints in press. Chairman of the Council participated in the EU energy conference in Brussels, and he delivered a paper at the Assembly of the Baltic States "Natural gas in the Baltic Sea region".

## **COUNCIL OF POPULATION AND PUBLIC HEALTH**

The main activity of the Council of Population and Public Health of the Estonian Academy of Sciences (Chairman Member of Academy Ain-Elmar Kaasik) focused on participation in the public health working committee of the Public Understanding Forum. Sitting in the working committee is also Member of Academy Raivo Uibo, who used to be Chairman of the working committee until the beginning 2005.

The major undertaking of the working committee was the Public Understanding Health Forum held on 17 January, with one of the keynote speakers being member of Council, Dean of the Faculty of Medicine of the University of Tartu Professor Toomas Asser.

Besides that the Council of Population and Public Health participated in various forms in organisation of two more large events. They were the Health Forum held on 8 September, in whose framework there was held the panel discussion "Present situation with health care in Estonia" and the Health Forum held on 24 November, where member of Council and working committee Professor Raul-Allan Kiiwet and Member of Academy A.-E. Kaasik were among keynote speakers. The initiator of those two forums was Ministry of Social Affairs, the direct organiser being Tallinn Conferences Group LLC, but the share of Academy's Council of Population and Public Health in meaningful organisation of those forums with impressive participation was noteworthy. The forums were venues of meeting to opinion leaders of the domain of health care, including the top specialists of public sector, health care managers and financiers, medical personnel, representations of patients and unions of the diseased, pharmacists, politicians and representatives of state power.

31 May – public health working committee of the Public Understanding Forum organised a meeting on the topic "Funding of the health care system". Board of the Public Understanding Foundation has organised roundtables with participation of the working committee under the general title "Excellent health" in a number of counties in Estonia (Jõgeva, Ida-Virumaa, Võru, Põlva, Pärnu, Rapla). Although the said roundtable has been maintained exclusively upon initiative and by organisation of Public Understanding Foundation, Council of Population and Public Health has analysed those data and it is going to use them in its further activity.

The forums organised with numerous participation have just specified the problems and bottlenecks already of common knowledge, related to health care and medical aid of Estonian population, rather than have offered solutions. Often, we are falling short of opportunities to influence the decision makers and also the public opinion in that rather sensitive area. The experience of 2005 still confirmed that single option open to Council of Population and Public Health of Estonian Academy of Sciences is participation in existing structures.

# CONFERENCES, SEMINARS, LECTURES, DISCUSSIONS

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## CONFERENCES

1 April – Academy House hosted the international conference FERDINAND JOHANN WIEDEMANN 200. Conference was opened by President of Academy Richard Villems.

- F. J. Wiedemann's scientific legacy as researcher of the Estonian language and folklore was the topic of papers by researchers of the University of Tartu and Institute of the Estonian Language, Members of Academy *Huno Rätsep* and *Arvo Krikmann* and Professor *Karl Pajusalu* and Dr *Urmas Sutrop*.
- F. J. Wiedemann's works on research of Baltic-Finnic languages, as well as the Mari, Erza-Mordvinian and Permian language were delved into by Professors *Alho Alhoniemi* of Turku University, *Eberhard Winkler* of Göttingen University and MA *Nikolai Kuznetsov* of the University of Tartu.

12 April – conference “Centres of Excellence of Estonian Science 2005” was organised by Academy and Association of the Centres of Excellence of Estonian Science. Conference was attended by President of the Republic Arnold Rüütel and Member of Academy, Speaker of Riigikogu Ene Ergma. The opening address of the Conference was delivered by President of Academy Richard Villems, to be followed by papers from:

- Toivo Maimets* of Centre of Excellence for Gene and Environmental Technologies;
- Endel Lippmaa* of Centre of Excellence of Analytical Spectrometry;
- Arvo Krikmann* of Centre of Cultural History and Folkloristics in Estonia;
- Jüri Engelbrecht* of Centre for Nonlinear Studies;
- Talis Bachmann* of Estonian Centre of Behavioural and Health Sciences;
- Ergo Nõmmiste* of Institute of Physics of the University of Tartu;
- Ilmar Koppel* of Centre of Excellence in Chemistry and Materials Science;
- Allen Kaasik* of Centre of Molecular and Clinical Medicine;
- Tõnu Oja* of Centre for Basic and Applied Ecology.

Heads of Centres of Excellence presented to the conference for discussion the results of work of their centres and their achievements, and considered their future perspectives.

26-27 May – Estonian Literary Museum, Estonian Writers' Union and Estonian Academy of Sciences celebrated the 100th ANNIVERSARY OF "NOOR-EESTI" with a meeting with papers and a conference in Literary Museum in Tartu. Delivering papers at the festive meeting were *Ain Kaalep*, *Ain-Elmar Kaasik*, *Jan Kaus*. Treffner's School Theatre directed by *Helgi Tering* staged the interpretation about "Noor-Eesti" in 2005 and there was also presentation of the 2nd edition of the book "Wõitluse päiwil" (In the Days of Battle).

Conference 1905-1915: "NOOR-EESTI" TEN YEARS: TIME AND LITERATURE  
On time and art – moderated by Krista Aru. Speaking were:

*Kaido Jaanson*: Beginning of 20th C. in political history of Estonia;

*Eero Medijainen*: The years 1905 and 1918;

*Epp Preem*: Estonian artists with "Noor-Eesti";

*Kersti Koll*: Tuglas' collection of "Noor-Eesti" art;

*Tiina Kirss*: Woman from the start of century.

Let's stay Estonians ... – moderated by Sirje Olesk. Speaking were:

*Peeter Olesk*: Future of "Noor-Eesti";

*Mirjam Hinrikus*: Construction of modernist identity. F. Tuglas' "Felix Ormusson" and A. H. Tammsaare's student's short stories;

*Jaanus Kulli*: "Noor-Eesti" business manager Bernhard Linde;

*Epp Annus*: Strivings of the young and the joyful history;

*Virve Sarapik*: "Work of art is a voiceless vibrantly living word ..."

Words about art;

*Cornelius Hasselblatt*: 1905 in Estonian literature.

Let's become Europeans! – moderators Marin Laak and Katre Talvistu.

Speaking were:

*Katre Talvistu*: The French bouquet in the design of members of "Noor-Eesti": Background in France of selection of French authors represented in "Noor-Eesti" albums and the consequences of the same in Estonia;

*Katrin Tombak*: Young Sweden and "Noor-Eesti";

*Lea Pild*: Reception of Russian literature in Tuglas' work of fiction;

*Sirje Olesk*: Finland's role in formation of "Noor-Eesti";

*Liina Lukas*: German literature and its reception in Estonia in the period of "Noor-Eesti";

*Mari Tarvas*: Deliberations of R. M. Rilke.

Besides that, opened from 26 May – 25 August in the hall of Estonian Literary Museum were exhibitions:

- Story of "Noor-Eesti" in autographs, on photos and in printed matter (organised by the Estonian Cultural History Archives of Literary Museum and Archival Library);

- Friedebert Tuglas' collection of art from the "Noor-Eesti" period (organised by affiliated Museum of Under and Tuglas Literature Centre);
- Ideal and real. Woman from the start of century (organised by Eduard Vilde museum).

22 June – commemorative conference of 75th anniversary of Member of Academy Boris Tamm at Tallinn University of Technology and placement of flowers at Boris Tamm bust in the inner courtyard of University, on Members of Academy alley. Conference BORIS TAMM - MANAGER OF EDUCATION AND SCIENCE held at Energetics House of Tallinn University of Technology attracted friends of the late Member of Academy and his former colleagues. The opening address to the Conference was delivered by Rector of the University Andres Keevallik, speaking were, among others also Member of Academy Rein Küttner, Director of Institute of Cybernetics Jaan Penjam, Professor Emeritus Valdek Mikkal and others. Within the framework of the commemorative conference there was presented the book In Memoriam Boris Tamm compiled by Olavi Pihlamägi and in the foyer of the University, an exposition of personal archives of the late Member of Academy was put on display.

6 December – CONFERENCE OF WINNERS OF CONTEST OF STUDENT PAPERS. Conference was opened by President of Academy Richard Villems, the laureates were handed over diplomas. Authors of the best works delivered papers:

*Martin Järvekülg* of University of Tartu: Use of hafnium(IV)butoxide in development of oxide materials;

*Linda Kaljundi* of University of Tartu: Waiting for the barbarians: The imagery, dynamics and functions of the other in Northern German missionary chronicles, 11th – early 13th C.;

*Margus Simson* of Tallinn University of Technology: Conceptual framework of Internet marketing and achievement of strategic marketing goals by means of Internet marketing devices.

In addition, speaking was *Margus Niitsoo* of University of Tartu, who took the third place at the 2005 Competition of EU Young Scientists. He delivered a short paper on generalisations of Fibonacci sequence.

## SEMINARS

20 January – Academy House hosted for the second time (the first seminar took place in 2004) the international academic seminar THE SECOND NORDIC GRID NEIGHBOURHOOD WORKSHOP. Surveys of national computation grids were presented by:

*Farid Ould-Saada* of Oslo University;  
*Per Öster* of Royal Swedish University of Technology;  
*Michael Kustaa Gindonis* of Helsinki Institute of Physics;  
*Algimantas Juozapavicius* of Vilnius University;  
*Mario Kadastik* of Institute of Chemical and Biological Physics.

12 May – Academy hosted the seminar organised by Riigikogu's Culture Commission and Academy under the blanket title BODIES AND INSTITUTIONS FUNDING RESEARCH AND DEVELOPMENT – THE DIRECTIONS OF DEVELOPMENT, STRATEGIES, PROBLEMS, organised in connection with Estonian strategy of R&D activity currently in the being drafted, for the years 2006–2013. Speaking up at seminar, presenting analysing papers about the situation of Estonian R&D activity and perspectives were:

*Olav Aarna*, Chairman of Riigikogu's Culture Commission,  
*Mailis Reps*, Minister of Education and Research and  
*Richard Villems*, President of Academy.

Presenting their views were Rector of University of Tartu *Jaak Aaviksoo* and Chairman of Science Competence Council *Martin Zobel*. Views of Foundation Enterprise Estonia were stated by *Ülo Jaaksoo*. The seminar also heard out the results of work of research company PRAXIS in the given problems.

5 September – Information Day FROM STUDENTS TO TOP LEVEL RESEARCHERS: EUROPEAN POLITICAL CONTEXT AND PRACTICAL STEPS FOR SUPPORTING CAREER DEVELOPMENT held in co-operation with the Archimedes Foundation, where overview was provided about the measures to support researchers' career and mobility created by European Commission. The Archimedes Foundation presented the info portal smartEstonia.ee and Estonian Network of Mobility Centres created by support from Commission, which is part of the European Network of Mobility Centres ERA-MORE. The Information Day was opened by Vice-President of Academy Jüri Engelbrecht. Information was provided by:

*Katrin Kiisler* and *Kristin Kraav* of the Archimedes Foundation:  
smartEstonia.ee – opportunities of study and research in Estonia;  
*Elena Coello* of European Commission: Initiatives at community level for the support of career development and mobility of researchers;  
*Rein Vaikmäe* of Tallinn University of Technology: The European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers: in Estonian context.



12 September – Division of Informatics and Engineering and Estonian National Committee for Mechanics organised in Cybernetica House the NIKOLAI ALUMÄE ACADEMIC SESSION. The opening address was delivered by Head of Division of Informatics and Engineering, Member of Academy Rein Küttner. President of Academy Richard Villems handed over to Member of Academy Jüri Engelbrecht the first Nikolai Alumäe medal. Followed the paper by Jüri Engelbrecht “Complexity, wholeness and physics” and discussion.

20 September – Estonian Academy of Sciences held a seminar KNOWLEDGE-BASED ESTONIA II, with the aim to hearing out in the competent gathering the views on the progress in laying down a strategy of R&D and innovation for 2007–2013, exchanging the thoughts and analysing the achievements of the former strategy, and discussing the important trends of development concerning future. Speaking at the seminar were:

*Jüri Engelbrecht*, Chairman of the Working Group of Strategy of R&D Activities

*Tea Danilov* of Ministry of Economic Affairs and Communications: innovation policy in Estonia.

Participants also discussed the points of contact of R&D activity and innovation policy. Taking part in the discussion were: Member of Riigikogu Tõnis Lukas, representatives of Ministry of Education and Research and Ministry of Economic Affairs and Communications, Members of Academy Agu Laisk, Ain-Elmar Kaasik, Rein Küttner, Leo Mõtus, Karl Rebane, Peeter Saari, Peeter Tulviste, Enn Tõugu, Mihkel Veiderma and Richard Villems, and other participants.

21 September – European Court of Auditors organised in the Academy House the seminar THE MANAGEMENT OF EU FUNDING UNDER EUROPEAN 5TH AND 6TH FRAME PROGRAMMES AND THE FEEDBACK OF SCIENTIFIC COMMUNITY TO THE EFFECT. Seminar was opened by Secretary General of the Academy Leo Mõtus and Member of European Court of Auditors Kersti Kaljulaid. Speaking at the seminar were:

*Kersti Kaljulaid*: Presentation of European Court of Auditors and auditing of the financing of research;

*Martin Weber*, Chief of Office of Luxembourg Member of European Court of Auditors: observations of European Court of Auditors on the basis of audits of framework programmes;

*Markku Pottonen*, Member of Estonian Office of European Court of Auditors and

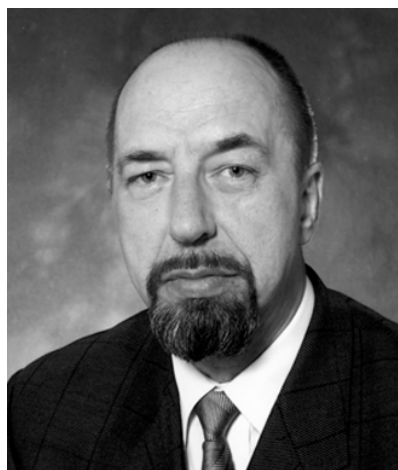
*Gareth Roberts*, auditor of European Court of Auditors: Observations of European Court of Auditors about aspects of 6th frame programme and preparations of the 7th frame programme.

The papers were followed by a discussion moderated by *Kersti Kaljulaid*.

## PUBLIC ACADEMIC LECTURES

In 2005, the traditional series “Public Academic Lectures of the Estonian Academy of Sciences” was continued with four lectures, where two first lectures were delivered in the framework of International Year of Physics 2005:

30 March  
“Physics and Security”



Member of Academy *Peeter Saari*

16 November  
“Phonon-free lines spectroscopy  
of one molecule”



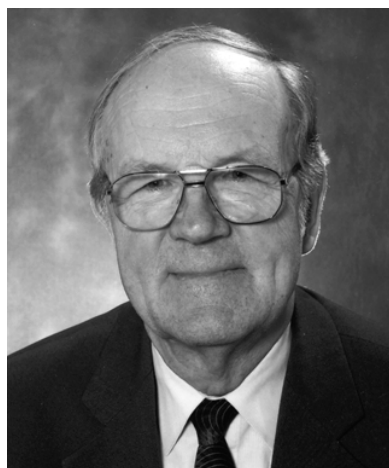
Member of Academy *Karl Rebane*

29 April  
“Immune system: for protection only?”  
(European Day of Immunology)



Member of Academy *Raivo Uibo*

5 October  
“Energetics as pivot and pole”



Member of Academy *Mihkel Veiderma*

## DISCUSSIONS

8 March – Board of Academy together with the Estonian Literary Museum associated with Academy organised a meeting in the House of the Museum in Tartu. Under discussion was activity of the Museum and its perspectives for development. At the beginning of the meeting, Director of the Museum Krista Aru spoke about the history of the Estonian Literary Museum and its present day, traditions and goals. The visitors looked at the historical archives:

Archival Library was presented by Head of Library *Merike Kiipus*;

The activity of Estonian Cultural History Archives was presented by Head of Archives *Piret Noorhani*;

In the Estonian Folklore Archives the tour was guided by archivist *Kadri Tamm*.

Besides that, in the activity of Estonian Literary Museum as R&D institution the following was presented:

- Estonian folklore: a short paper on the topic of tradition, identity and globalisation was delivered by Head of Department of Folklore *Mare Kõiva*;
- Creation, passing along and interpretation of folklore was the topic deliberated on by senior research scientist of Folklore Archives *Aado Lintrop*;
- The musical text and context in traditional cultures was presented by research scientist of Department of Ethnomusicology *Taive Särg*;
- The Estonian cultural history as the factor shaping the national literature was spoken about by research scientist of Cultural History Archives *Marin Laak*;
- The topology of Estonian literature and its texture was the topic of senior research scientist of Cultural Theory Working Group *Virve Sarapik*;
- The work of Centre of Cultural History and Folkloristics in Estonia was presented by Head of the Centre Member of Academy *Arvo Krikmann*.

The meeting was ended with discussion about the place and importance of Literary Museum in Estonian research and cultural landscape in contemporary society. Participating at the meeting were Members of Academy: Jüri Engelbrecht, Arvo Krikman, Leo Mõtus, Loit Reintam, Huno Rätsep, Hans-Voldemar Trass, Peeter Tulviste, Richard Villems, Haldur Õim.

30 April – Academy was visited by delegation of Board of Ernst Schering Research Foundation. Guests were received by Vice-Presidents of the Academy Jüri Engelbrecht and Ain-Elmar Kaasik. There was held in the Academy the CONFERENCE OF BOARD OF TRUSTEES OF ERNST SCHERING RESEARCH FOUNDATION: the keynote speech was given by Vice-President of Academy

*Jüri Engelbrecht* on the topic: Estonia and European Research Area. Speaking at the Conference were:

*Margus Lopp*, Dean of Faculty of Science of Tallinn University of Technology: Synergy of Chemistry, Biology and Biomedicine at the Faculty of Science of Tallinn University of Technology;

*Günter Stock*, Member of Board of Ernst Schering Research Foundation: Public Private Partnerships – Experiences;

*Monika Lessl*, Head of Science Office of Ernst Schering Research Foundation: Activities of the Ernst Schering Research Foundation.

5 May – the Science Day in Rakvere organised by Academy and Lääne-Virumaa County Government. The opening address was delivered by County Governor Urmas Tamm, considering the innovative development of economy in Lääne-Virumaa. The tasks and activities of Academy were focused on by President Richard Villems. Speaking were two Members of Academy coming from Virumaa:

astrophysicist *Arved-Ervin Sapar*  
and folklorist *Arvo Krikmann*.

In addition to that, Member of Academy *Udo Margna* considered the life and research of Alma Tomingas, the first Estonian female professor, scientist in pharmacology and Member of Academy, native of Rakvere. The Science Day was met with interest and there will be follow-up events in Rakvere in 2006.

30 September – in the framework of the series of trips-discussions, there was visiting tour of delegation of the Academy to leading Estonian timber and sawmill enterprises in Järvamaa. The scientists visited Finnforest Eesti AS and Imavere Sawmill, they studied the production process and conditions of the enterprises and discussed together the situation of this branch of industry in the wider perspective. The production process of Imavere Sawmill was presented by process manager of the mill Marek Moorits and the tour in Finnforest Eesti sawmill was led by process manager of the enterprise Margus Aruoja. The representation of the Academy included Members of Academy Agu Laisk, Ülo Lepik, Enn Mellikov, Erast Parmasto, Loit Reintam, Huno Rätsep, Arved-Ervin Sapar, Peeter Tulviste, Mihkel Veiderma. The group was headed by Head of Division of Informatics and Engineering of the Academy Rein Küttner. Besides them, the representation included, as representative of Tallinn University of Technology, Pille Meier and Managing Director of the Estonian Forest Industries Association Andres Talijärv.

19 October - Members of Academy and representatives of Tallinn University of Technology met at the University. Members of Academy were presented the newly opened and briskly developing House of Natural Sciences in the University's Mustamäe campus. The discussion took place in the Council Room of Energetics House. In lively discussion, the main issues suggesting themselves were:

- Sustainability of University of Technology;
- Importance of favourable environment for excellent level study and research;
- International character of education and science landscape and readiness of the University for providing instruction also in English;
- Need to lay down a unified centre of excellence for sustainable energetics and oil shale research and its role as reviver and promoter of the research direction;
- Validity/invalidity of the European Charter for Researchers in Estonia;
- Evaluation and financing issues;
- Co-operation of University of Technology with other higher schools and vocational schools as trainer of qualified specialists, and also teachers;
- Academy's role as creator and implementing agent of principles of science policy and quality based funding of science.

Members of Academy were welcomed in Tallinn University of Technology by Vice-Rector for Research *Rein Vaikmäe*, Vice-Rector for Academic Affairs *Jakob Kübarsepp*, Vice-Rector for Development *Andres Keevallik*, Head of the Department of Chemistry *Mihkel Kaljurand*, Dean of the Faculty of Science *Margus Lopp*, Dean of the Faculty of Chemical and Materials Technology *Andres Õpik* and others. Tour and discussions were attended by Members of Academy *Ene Ergma*, *Jüri Engelbrecht*, *Ülo Jaaksoo*, *Lembit Krumm*, *Rein Küttner*, *Georg Liidja*, *Enn Mellikov*, *Leo Mõtus*, *Anto Raukas*, *Karl Siilivask*, *Enn Tõugu* and *Mihkel Veiderma*.

9 November - Academy House was the venue of 1ST GENERAL ASSEMBLY OF THE YOUTH ASSOCIATION ESTONIAN ACADEMY OF YOUNG SCIENTISTS. The welcoming speeches was delivered by President of Academy *Richard Villems* and Member of Academy, speaker of Riigikogu *Ene Ergma*. Speaking about the situation of young scientists in Estonian higher schools were:

*Ain Heinaru*, Vice-Rector for Research of the University of Tartu;

*Peeter Normak*, Vice-Rector for Research and Development of the University of Tallinn;

*Jakob Kübarsepp*, Vice-Rector for Academic Affairs of Tallinn University of Technology.

Followed a short presentation of Estonian Academy of Young Scientists to the wider public, election of council and board of trustees of that organisation and approval of the development plan.

## **NAMED MEDALS OF ACADEMY, AWARDS, PRIZES**

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### **NAMED MEDALS OF ACADEMY**



On 3 February, at the commemoration conference on occasion of the 100th anniversary of Member of Academy Paul Ariste, the first Paul Ariste Medal for outstanding achievements in the area of social sciences and the humanities was granted to Professor Emeritus of University of Tartu, Doctor of Philology, pupil of Member of Academy P. Ariste and direct successor of his work Tiit-Rein Viitso.

The first Nikolai Alumäe Medal for outstanding achievements in the area of informatics and engineering was awarded to Member of Academy Jüri Engelbrecht. Medal was handed over on 12 September at the Academic Session of Member of Academy Nikolai Alumäe.



## **BERNHARD SCHMIDT PRIZE**

Prize for R&D works in Estonian economy was merited by the team of young scientists of Cybernetica AS – Arne Asper, Kristo Heero, Sven Heiberg – for the work “Software solution of e-voting”. Subject matter of the prize-winning work was elaboration of the concept of electronic voting initiated by Republic of Estonia in 2003 and its software solution. This is a spectacular example on expedient implementation into practice of involuted theories of the area of mathematics and informatics. The system was used successfully at election of Estonian local self-governments in October 2005.



*Kristo Heero (on the right), Sven Heiberg (sitting) and Arne Ansper  
in a gust of work.*

## LETTER OF THANKS OF THE ACADEMY

In 2005, Letter of Thanks of the Estonian Academy of Sciences was conferred to:

*Krista Aru* for the activity marked with achievements and carried out with immense love and inner burning as head of the Estonian Literary Museum, and for enthusiastic presentation of cultural events;

*Linda Kongo* for long dedicated work as Scientific Secretary of Estonian Naturalists' Society;

*Rein Vaikmäe* for successful activity as researcher and official in research, and for pleasant co-operation with Academy, as Counsellor on Research and Higher Education with Ministry of Education and Research; and in connection with his 50th birthday.

To Estonian Geographical Society for fruitful activity in generation and dissemination of knowledge.

To Nature Protection Commission of Estonian Academy of Sciences for pregnant deliberations over problems of Estonian nature and their solution.

## SCHOLARSHIPS OF THE ACADEMY

In 2005, the Estonian Academy of Sciences assigned 4 scholarships, by public contest, for completion of monographic research works and popular science books. The Academy received 8 applications for the purpose. The Assessment Commission, comprising Member of Academy Loit Reintam (Chair), Members of Academy Hillar Aben and Haldur Õim considered the applications. On the basis of their proposal, the Board of the Academy assigned scholarships to the following scientists (Resolution of the Board of 14 June 2005, Minutes no. 4 § 18):

*Ants Bender* (Jõgeva Plant Breeding Institute) – 20 000 kroons, for publishing the monograph “Laying down and use of different types of grassland”. The book appeared in 2006 in University of Tartu Publishers.

*Jaak Henno* (Tallinn University of Technology) – 20 000 kroons, for publishing the textbook “Language, communication, computer”; manuscript of the book “Computers and Language I – Compiling Translators” has been handed over to the Publishers, it will appear in 2006.

*Ülo Lumiste* (University of Tartu) – 20 000 kroons, for publishing the monograph “Semi-parallel sub-manifolds in space forms”; manuscript has been corrected subject to requirements of Springer-Verlag and returned to the Publishers for acceptance.

*Uno Veismann* (Tartu Observatory) – 20 000 kroons, for publishing the volume of popular science articles “Universe in solar strays and raindrop”. The book appeared in the reporting year in Tallinn Book Printers’.



## STUDENT RESEARCH PRIZES

On 31 May 2005 the Board of the Estonian Academy of Sciences called a contest of student research prizes. By the established deadline 61 papers were deposited with the Academy, of which 24 Master's theses and 31 Bachelor or graduation works, 2 competition works, 1 superior grade work, 1 seminar and 1 research paper, and 1 article. Majority of works came from the University of Tartu (26), 22 from Tallinn University of Technology, 10 from University of Tallinn, 2 from Estonian Agricultural University, and 1 from Estonian Business School.

The papers were examined by Assessment Commission of the Academy, in the composition of Members of Academy Georg Liidja (in the chair), Arvo Krikmann, Udo Margna and Enn Tõugu. There were outside experts involved in the assessment. Arvo Krikmann did not take part in assigning priorities to works in the area of the humanities. At its session on 4 November the Commission decided to award four first prizes EEK 5000 (net) and fifteen second prizes EEK 2500 (net).

The first prize of the Estonian Academy of Sciences was awarded to the following student papers:

*Martin Järvekülg* (University of Tartu) contest work "Use of hafnium(IV)butoxide in development of oxide materials" (supervisors MSc Valter Ree-do, Professor Uno Mäeorg);

*Linda Kaljundi* (University of Tartu) Master's paper "Waiting for the barbarians: The imagery, dynamics and functions of the other in Northern German missionary chronicles, 11th – early 13th C. (Bremen Adam's *Gesta Hammaburgensis Ecclesiae Pontificum*, Bosau Helmold's *Chronica Slavorum*, Lübeck Arnold's *Chronica Slavorum* and Henrik's *Chronicon Livoniae*)" (in English; supervisors MA Marek Tamm, Dr. Anti Selart);

*Rasmus Kattai* (University of Tartu) Master's paper "A macro model of the Estonian economy in the tradition of the neo-classical synthesis" (in English; supervisors MA Andres Võrk, Dr. Ele Reiljan);

*Pavel Starkov* (University of Tartu) research paper "Synthesis of multisubstituted hydrazones and CAN catalyzed oxidative cleavage of nitrogen-nitrogen bond" (in English; supervisors Professor Uno Mäeorg, Doctoral student Olga Tšubrik).

The second prize of the Estonian Academy of Sciences was awarded to the following student papers:

*Marit Kasemets* (University of Tallinn) Bachelor's paper "Regarding the bottom erosion dynamics and its importance in the development of peat bogs" (supervisor Associate Professor Edgar Karofeld);

- Carol Kirss* (Tallinn University of Technology) Master's paper "Estonian ice-breaking concept" (supervisor Associate Professor Ene-Mall Villemi);
- Liisi Laineste* (University of Tartu) Master's paper "Actors in Estonian ethnic humour" (supervisor Member of Academy Arvo Krikmann);
- Helena Lind* (Tallinn University of Technology) Bachelor's paper "Modelling of hydro-geological conditions. Bale-up after the example of Tammiku-Kose quarry field" (supervisor Dr. Ingo Valgma, consultants Professor Enno Reinsalu, Assistant Professor Katrin Erg, Kalmer Sokman);
- Taivo Lints* (Tallinn University of Technology) Master's paper "Modelling processes occurring in bacterial cell as a multi-agent system after the example of agent based description of DnaA titration model" (supervisor Member of Academy Leo Mõtus);
- Aivo Lokotar* (University of Tartu) superior grade paper "Subsidence of buildings of Tartu Old Town and geological-hydro-geological reasons thereof" (supervisor Professor Volli Kalm);
- Mart Moppel* (University of Tartu) Bachelor's paper "Development of confocal microscope for Raman and micro-luminescence spectra measurement" (supervisors MSc Martti Pärs, Dr. Ilmo Sildos);
- Pille Penjam* (University of Tartu) Master's paper "Regarding the lexical and grammatical use of *tulema*-verb and evolution of its modal function in literary Estonian in 17th-20th C." (supervisor Associate Professor Külli Habicht);
- Taisia Rõlova* (Tallinn University of Technology) Bachelor's paper "Construction and evaluation of *Pseudomonas fluorescens* OS8-based luminescent sensor bacteria" (in English; supervisors MSc Angela Ivask, Dr. Anne Kahru);
- Margus Simson* (Tallinn University of Technology) Master's paper "Conceptual framework of Internet marketing and achievement of strategic marketing goals by means of Internet marketing" (supervisor Assistant Professor René Arvola);
- Anastassia Zabrodskaja* (University of Tallinn) Master's paper "Russian-Estonian code shift in Kohtla-Järve's primary school children – native speakers of Russian" (supervisor Dr. Anna Verschik);
- Indrek Zolk* (University of Tartu) Bachelor's paper "Godefroy-Saphar's theorem's generalisation" (supervisor Professor Eve Oja);
- Kristi Timmo* (Tallinn University of Technology) Master's paper "Formation of properties of mono-grain-powder CuInSe<sub>2</sub> when grown in potassium iodide fusion environment" (supervisor Leading Research Scientist Mare Altosaar);
- Piret Voolaid* (University of Tartu) Master's paper "Peripheral substance of Estonian riddles. Electronic databases in Internet" (supervisor Member of Academy Arvo Krikmann);
- Niina Voropajeva* (University of Tartu) Bachelor's paper "Kramers' velocity and transmittance of Brown's particles on partly constant periodic

potentials” (in Russian; supervisors Associate Professor Teet Örd, Professor Risto Tammelo).

Research prizes together with diplomas were handed over on 6 December, at the conference of winners of contest of student papers. The conference heard the reports of three prize-winning students – Martin Järvekülg, Linda Kaljundi and Margus Simson on topic of their respective contest papers. The paper was also delivered by Margus Niitsoo, who took the third place at the 2005 Competition of EU Young Scientists.

## **PUBLICATIONS OF THE ACADEMY**

Published in 2005 were

Books:

- “Estonian Academy of Sciences Year Book X (37)” in Estonian\* and English \*;
- The ninth book in the series “National Science Prizes 2005”, providing an overview of the award-winning scientists of 2005 and their research papers;
- The second book in the series “Scientific Thinking in Estonia” Medical Science. \*

Member of Academy *Ain-Elmar Kaasik*:

This issue published in the series of the Academy’s “blue books” contains a short survey compiled by Raivo Uibo and Ain-Elmar Kaasik about the Estonian medical science of recent years, detailed by eight synopses of Estonian institutions engaged in medical R&D works. They present summaries of research works done in Research Centre of the National Institute for Health Development (Toomas Veidebaum), in Faculty of Medicine of the University of Tartu (Toomas Asser, Eero Vasar, Diva Eensoo and Raul-Allan Kiivet), in Institute of Molecular and Cell Biology (Juhan Sedman) and in Faculty of Exercise and Sport Sciences (Vahur Ööpik, Mati Pääsuke, Teet Seene) University of Tartu. Separate articles focus on results of the R&D work in Estonian Institute of Cardiology (Jüri Kaik) and the biomedical researches done in Institute of Chemical Physics and Biophysics (Priit Kogerman, Valdur Saks). The surveys have been complemented by bibliographical data on the most important publications for the past five years authored by the working groups.

Resources allocated to medical science accounted for 10-11% of the expenses made in Estonia on R&D for the past ten years, in aggregate three times less than the sums allocated to natural science (77.8 vs 234.2 million kroons in 2003). In the same period Academy of Finland as the state financier of research allocated 17% of the total science money to medical studies. In Sweden, the respective percentage was even higher. Nevertheless, the programme of centres of excellence in research provided significant help for financing the medical studies. Out of ten Estonian centres of excellence in research nominated by 2002, three are directly or indirectly related to medical R&D.

Scientific journals cf. p. 94.

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\* In electronic format cf. <http://www.akadeemia.ee>

## INTERNATIONAL SCIENTIFIC RELATIONS

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Estonian Academy of Sciences Act specifies, as the statutory task of the Academy, to promote international scientific co-operation.

Estonian Academy of Sciences continued participation in 2005 in the activity of the following INTERNATIONAL ORGANISATIONS:

- At the session of the 28th General Assembly of International Council for Science; ICSU (October 2005, People's Republic of China). Estonian Academy of Sciences was represented by Vice-President Ain-Elmar Kaasik, who was empowered, for electing the new board of ICSU, to vote also in the name of Latvian and Lithuanian Academies of Sciences. The General Assembly approved, as a result of discussions, the activities strategy for 2006–2011. It emphasised the need to carry the knowledge derived from scientific research more effectively than heretofore, to the decision makers (political figures), incl. at international level; it also highlighted (upon initiative of 21 European academies of sciences) the importance of social sciences in achievement of the goals of the strategy.
- Academy is involved in the activity of InterAcademy Panel on International Issues (IAP). Estonian Academy of Sciences belongs among those 68 Academies, who endorsed in 2005 IAP Statement on Biosecurity, emphasising the responsibility of the scientists for prognosticated consequences of research, and also in prevention of possible misuse of the biological researches.
- In the Union Académique Internationale (UAI), uniting the Academies concerned with the so-called “soft” research, the Estonian Academy of Sciences is represented by Head of Division of the Humanities and Social Sciences, Member of Academy Peeter Tulviste, who delivered at the UAI 79th annual meeting (May 2005, Ankara) a paper on necessity to restore to social sciences a more imposing role. While emphasising the unique competence of the UAI, which could be employed for solution of important social problems, he highlighted a couple of concrete opportunities of how this could be done in the areas of culture, identity and intellectual research (for the full text of the paper, see Appendix 1 p. 156).
- In ALLEA (European Federation of National Academies of Sciences and Humanities “ALL European Academies”). The Academy participates in the work of two working groups of ALLEA. The issues of inter-Academies co-operation is studied by the working group headed by Member of Academy Jüri Engelbrecht. Besides that, Academy is engaged in co-operation with the working group analysing the relations of science, society and media. In December 2005 the Academies – members of ALLEA

elected Vice-President of Estonian Academy of Sciences Jüri Engelbrecht as new President of ALLEA for 2006–2009. Jüri Engelbrecht's incumbency will start in March 2006.

- In the European Academies' Science Advisory Council (EASAC), constituted by Academies of the European Union member states, advising the EU political institutions in issues needing independent scientific expertise. Authorised by the Academy, Secretary General Leo Mõtus participates as individual member in the work of EASAC. L. Mõtus participated in all three meetings of that advisory body, besides that also in the activity of the Energy Working Group set up in 2005.
- In the European Science Foundation (ESF) the Academy is active together with the Estonian Science Foundation (EstSF). Membership fee is paid through Academy, funding of participation of programmes through EstSF. Joint representatives of Academy and EstSF act both in the governing committee and standing specialist committees. In 2005, the Estonian researchers participated in ten ESF *à la carte* programmes; EstSF has joined to six programmes of ESF EUROCORES ("European Collaborative Research") in different stages of preparation. The ESF organised, in 2005 the discussions over strategy and financial plan contemplated for 2006–2010, which were attended by Vice-President Jüri Engelbrecht (member of governing committee representing Estonia until 31.12.2005) and Secretary General Leo Mõtus as representatives of Academy.

The Academy continued the established practice of supporting the connections of Estonian scientific community with international scientific institutions, by organising centralised payment of membership fees of those institutions (the priority is given to contacts with organisations belonging to ICSU) and reporting to Ministry of Education and Research about the activity of respective national committees (for the list see Appendix 2 p. 158). The national committees obtained specialist information, participated in scientific events, participated in working groups, networks, research projects and programmes, recommended and elected Estonian scientists to governing bodies of those scientific institutions (expert bodies, candidates for prizes etc.).

Research carried out by the working group of ALLEA into inter-Academies co-operation (Chairman Member of Academy Jüri Engelbrecht) shows that more than 2/3 of European Academies of Sciences are mutually linked by bilateral co-operation agreements, whereas the network of partners embraces also the bodies financing science (research foundations, scientific councils). Full list of agreement partners of Estonian Academy of Sciences has been presented in Appendix 3 (see p. 160). In 2005, this list was replenished by two partners: Montenegrin Academy of Sciences and Arts and – again after a two-year lapse – Royal Swedish Academy of Sciences.

Exchange of scientists is effected mainly on the basis of co-operation agreements, i.e. the Academies favour and support monetarily the international mobility of scientists, with means commensurate to their possibilities, ranging from a couple of outgoing visits and receipts of visiting scientists per year (e.g. French Academy of Sciences, Royal Swedish Academy of Letters, History and Antiquities, Norwegian Academy of Sciences and Letters etc.) to several thousands (e.g. Polish Academy of Sciences, National Academy of Sciences of the Ukraine, Hungarian Academy of Sciences etc.). Usually the Academies operate on cost-sharing principle, the receiving party covering the living costs in the host country (this is how the Estonian Academy of Sciences does). In case of large exchange volumes it becomes evident that Academies prefer funding joint projects to visits of individual researchers, or else they open separate financing to joint projects.

Estonian Academy of Sciences fits in with other, essentially similar Academies: in 2005 the outgoing visits of Estonian scientists numbered 223 of total volume 1578 days; we hosted 120 visiting scientists, of total sojourn 1132 days. The numerical data on our exchange of scientists for 2005, as per partner institutions is presented in Table 1.

The year 2005 turned out a record year in respect of reception of visiting scientists, exceeding the average for previous 10 years by 37%. Expended on it were 638 thousand kroons. The volume of visits of Estonian scientists has stabilised in recent years, and the year of 2005 does not differ, significantly from the average of previous years, which is 1500 days on missions per year. As a result of that, the reception constituted 72% of outbound trips, instead of the usual 50%. The share of scientists in the humanities and social sciences is increasing (totalling over 52%). The comparative data of averages for the past five years as per areas of science have been presented in the figure below.

Reception		Trips
21%	Exact sciences	16%
23%	Biogeosciences	23%
9%	Engineering sciences	7%
3%	Medical science	1%
1%	Agricultural sciences	
19%	Social sciences	19%
24%	the Humanities	34%

Inbound and outbound visits in the framework of exchange of scientists in 2001–2005 (average as per specialties).

Table 1

Exchange of scientists, as effected in 2005, under co-operation agreements  
of the Estonian Academy of Sciences

Partner organisation	Annual quota (number of days)	Visiting scientists		Estonian scientists	
		Number of trips	Number of days	Number of trips	Number of days
Austrian Ac. Sci.	56	2	8	1	15
British Academy	90	1	2	3	37
Bulgarian Ac. Sci.	86	6	55	6	60
Royal Flemish Ac. of Belgium for Sc. and Arts	28	-	-	-	-
Spanish Council for Sc. Research	98	4	36	4	46
Israel Ac. Sci. and Humanities	28	-	-	1	10
Lithuanian Ac. Sci.	75	11	71	12	74
Latvian Ac. Sci.	75	17	91	16	68
Montenegrin Ac. Sci.	21	-	-	1	4
Norwegian Ac. Sci. and Letters	84	1	7	2	31
Polish Ac. Sci.	100	14	112	13	97
French Ac. Sci.		1	8	3	13
Royal Swedish Ac. of Letters, History and Antiquities	28	1	16	4	28
Slovak Ac. Sci.	35	5	46	1	10
Slovenian Ac. Sci. and Arts		5	43	1	10
Academy of Finland	600	24	367	116	682
Swiss Ac. Sci.	60	1	6	3	51
Ac. Sci. of the Czech Republic	70	6	61	4	33
National Ac. Sci. of the Ukraine	50	3	26	5	35
Hungarian Ac. Sci.	203	13	121	18	214
National Ac. Sci. of Belarus	30	-	-	2	15
Russian Ac. Sci.	75	5	56	7	45
<b>TOTAL</b>	<b>1892</b>	<b>120</b>	<b>1132</b>	<b>223</b>	<b>1578</b>

There is a noticeable tendency, also supported by research of the working group of ALLEA, that exchange of scientists is more active with Central and East Europe. It can be accounted for by the need for cost-sharing mechanism caused by economic stringency. In case of Estonia, the traditionally greater communication with neighbouring countries (especially Finland) adds to the picture.

The inter-academies exchange of scientists, which was started in the first half of 1990s and is operating under direct agreements, is one of the numerous mobility options today. In contemporary conditions, the Academy will have to



consider, in the proximate future, the efficiency and expediency of different co-operation instruments and to be ready to find new mechanisms of activity in developing international co-operation.

The Estonian Academy of Sciences supports also THE TRADITION OF REGIONAL CONFERENCES (joint conferences of Baltic and Nordic Academies of Sciences, conferences on Baltic intellectual co-operation). On 8–10 June the Delegation of the Finnish Academies of Science and Letters called in Helsinki the X Baltic Conference on Intellectual Co-operation (The Baltic: Past, Present and Future). The participants came from Estonia, Holland, Lithuania, Latvia, Sweden, Germany, Slovenia, Finland, and Denmark (see “Chronicle”).

In 2005, Academy was visited by several delegations interested in co-operation with Estonian scientific community and research institutions (in more detail see “Chronicle”, “Conferences, seminars, lectures, discussions”).

Representatives of Estonian Academy of Sciences were welcomed in partner Academies and at international conferences and meetings on science policy and strategy (in more detail see “Chronicle”).

ACCESSION OF ESTONIA TO EUROPEAN UNION in 2004 opened an opportunity to the Academy to have a direct say, through its representatives, in laying down the EU strategy of R&D activity and to participate in new structures. Vice-President Jüri Engelbrecht belongs to membership of European Research Advisory Board EURAB and participates also in two working groups: WG3 – Support of Regional Potential and WG6 – Science and Society. J. Engelbrecht also belonged to the five-strong preparatory working group of the European Research Council (ERC), established by Commissionaire for Research of the European Commission Janez Potočnik. The working group had been assigned the task to work out the methodological bases and criteria for selection of members of the Research Council, on the basis of which the European Commission named the composition of ERC in 2005.

In 2005, Estonian Academy of Sciences participated directly in two projects of the EU 6th framework programme. First, Academy participated, as authorised by Ministry of Education and Research in the so-called Specific Support Actions “Developing ERA-NET on Complexity”, co-ordinated by Danish Research Agency. The project was successfully completed, by submitting a new request for funding.

Second, Estonian Academy of Sciences is involved in the European Network of Mobility Centres ERA-MORE. The intra-Estonian network is co-ordinated by Archimedes Foundation. In September 2005, in co-operation with Archimedes Foundation, there was held the information day FROM STUDENTS TO TOP LEVEL RESEARCHERS: EUROPEAN POLITICAL CONTEXT AND PRACTICAL STEPS FOR SUPPORTING CAREER DEVELOPMENT (in more detail see “Conferences, seminars, lectures, discussions”).

## **INAUGURATION OF PRESIDENT OF THE ACADEMY**

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28 January witnessed inauguration of President of the Academy Richard Villems. The festive ceremony and putting the Chain of Office around the new President's neck by Jüri Engelbrecht, former President of the Estonian Academy of Sciences signified the start of his incumbency.

The programme of induction included:

Opening address of Member of Academy Jüri Engelbrecht, when handing over to the President of the Academy Chain of Office,  
Speech by President of the Academy Richard Villems.

Welcoming addresses were delivered by:

President of the Republic of Estonia Arnold Rüütel,  
Rector of the Estonian Agricultural University Alar Karis, on behalf of the Council of Rectors,  
Vice-President of the Academy of Finland Anneli Pauli on behalf of the guests from foreign academies,  
Minister of Education and Research Toivo Maimets.



President of the Academy Richard Villems, formally placed in office (on the right) and President in 1996–2005 Jüri Engelbrecht.

Partners and colleagues from the neighbouring countries having come to congratulate the President: President of the Lithuanian Academy of Sciences Zenonas Rokus Rudzikas, delegation of the Latvian Academy of Sciences headed by President Janis Ekmanis, President of the Delegation of the Finnish Academies of Science and Letters Matti Klinge, Secretary General of the Finnish Academy of Science and Letters Matti Saarnisto, representative of the scientific co-operation body of the Nordic countries NordForsk Reijo Vihko; and rectors of Estonian higher schools and the colleagues.

*Jüri Engelbrecht*

OPENING ADDRESS AT HANDING OVER

CHAIN OF OFFICE TO THE PRESIDENT OF THE ACADEMY

Welcome to all of you in this decorous hall of the Academy, where the Estonian Academy of Sciences gathers both at ceremonial occasions and for working meetings. The high-sounding music composed by Bach introduced our festive event and the selection of the date for that was by no means accidental.

On 28 January 1938 today the State Protector Konstantin Päts issued a decree titled “The Estonian Academy of Sciences Law”. That was the instance of beginning of the Academy. The further summary chronology says that on 13 April 1938, the State Protector approved the first 12 Members of Academy and nominated Karl Schlossmann President of the Academy. On 20 April 1938, the first session of General Assembly of the Estonian Academy of Sciences was held, however the ceremonious opening of the Academy took place as late as on 22 October 1938, with speeches delivered by President of the Republic Konstantin Päts and President of the Academy Karl Schlossmann.

All that happened 67 years ago. I will not touch upon the story of formation of the Academy, for which I should go back to the year 1920, or the history from 1938 until now. We arrived here where we are as actors wandering in the convoluted maze of the Estonian history. Today we are inaugurating the new President of the Academy, the eighth in the succession of Presidents.

This is the changing and global world. No longer is Estonia solving her problems alone, as a small country. Today we are tightly tied to other European countries. We are part of the world. Therefore we must think toget-her, how to cope in the ramified and involved community of the large system and with our part in that community, given the scarcity of funds and people. And yet there is something in the world inexorably striving to the growth, and not haunted by the endemic decline of share prices. It is the knowledge and the need for knowledge. The knowledge is scientific research, a cornerstone to advanced countries, and a natural priority in the European plans, just to recall the decisions taken in Lisbon and Barcelona. Unfortunately though, such a conception has not met with understanding everywhere, the least so in Estonia,

where the pragmatic ideas and the narrow field of vision are in collusion hellbent to pin down the science to the level of an attendant. The role of science however embraces the growth of knowledge in the widest sense as a basis to good education, competitive economy, development of social processes, culture and erudition of every man.

Academy of Sciences brings together the top scientists and it remains faithful to scientific thinking both when peering into the future and when scanning the sore spots of the society. Thence the role of the Academy – to promote and represent the Estonian science, to further the implementation of research results in the interests of Estonia and to add value to science and scientific way of thinking in Estonia. The Academy Act says that President of the Academy shall be responsible for the overall development of the Academy and for its statutory activity.

General Assembly elected Member of Academy Richard Villems, a scientist of stature and an experienced leader of research to carry the burden of that responsibility for the following five years. The previous years were rich in significance – they witnessed dramatic changes in our scientific life, development of research structures, consolidation of value estimates of the scientific community and widening of scientific connections. As it is, however, the scientific research, research structures and the society will never be complete, brought to a perfected state. It remains a challenge to all of us, a challenge to the Academy and, quite naturally a challenge also to President of the Academy – all for the aggregate to be larger than the constituent parts added up. This is a mission in the name of science. This is a mission in the name of future.

As the former President, I am happy today at this festive inauguration to put on shoulders of Member of Academy Richard Villems the Chain of Office of the President of the Estonian Academy of Sciences. This is the first time in the history of the Estonian Academy of Sciences, when the symbol of succession passes from one President to another in so unambiguous a manner. This is not a light chain to bear, but the mark of Academy it carries suggests symbolically the power of mind. The power of mind i.e. spiritual capital however is the most significant thing in this world.

*Richard Villems*

## SPEECH OF PRESIDENT OF THE ACADEMY

### MISSION OF THE ACADEMY

Placement of science and scientist in the society starts from the Constitution. The obligations and rights of a public law based person, such as the Academy, have been laid down in laws. Those having direct relevance to the Academy have been determined by the Academy Act, and by other legal acts.

Today 67 years ago the first legal act concerning the Estonian Academy of Sciences was signed. However it is common knowledge that the society as a whole, functions by drawing, to no lesser degree, on value estimates and traditions. As it is, the name of the assembly uniting us – the word *The Academy*, as a concept of spiritual life – comes from the wellspring of the heyday of European culture, from the distant past of almost twenty-four centuries back.

The living creatures are united by birth, individual existence, and extinction. They are united by the continuity of generations, the emergence of species, their transformation and ultimate withering away. They strive towards knowledge, the desire and capability to investigate the nature and the society, the past and the present, to prognosticate the future, the will and ability to transmit the knowledge obtained from generation to generation as an experience, over tens, hundreds and thousands years – with all that lacking, there would be no *Homo sapiens*, there would not exist any, even the most primitive society. It is something much more than the question of the competitiveness of the economy. However, inherently belonging in this juncture is the acknowledgement that the speed of the loss of richness of species presently surpasses by thousand times the respective average indicator in the recent 400 million years.

This statement is not a triviality, but a fundamental frame of reference, in order to view the mission of the Academy to stand up, consistently, for the advancement of science in Estonia, by attributing to those words – *advancement of science* – the widest possible meaning.

### CHALLENGE OF THE PRESENT DAY

For the present day of the Estonian science, of utmost importance is its capacity to be attractive to the next generation. In the widest sense – to be able to attract people of a creative spirit, dedicated to the advancement of society in any of its domains. And in a generalised way – the pass of Estonia to the knowledge- and skill-based society can be warranted only by fulfilment of that condition. Existing in a globally open society is always a challenge to the individual in his choices, however ever greater challenge to the states and regions as a whole, in the first place to their political leadership. The choice of the student will be ever more determined by the question about the quality of education, the choice of the scientist will be determined, in the first place by the opportunity to realise him- or herself as a scientist. Multifaceted though

the respective prerequisites are, for Estonia one of the facets has long ago shifted to the forefront – providing adequate infrastructure to science and research, to the university education and to the education generally. There is no way to circumvent this focal issue. Neither the Government nor the Parliament should overlook it. It is so because the word “science” is, in this connection tantamount to the concept “the future of Estonia”.

Science serves the most general and the most far-reaching interests of the society. A decade ago, the term “innovation” was added thereto, conceived first as scientific-technological innovation, in the first place, and having significantly widened by now in its meaning. The Academy views as misleading, time-wasting and often comical-foolish that continuous contrasting of fundamental and applied research, which we now and again witness in respective disputes here in Estonia. Often, and rather from the mouth or pen of those, who look like knowing little about either of them and, *alas*, seemingly not desirous of learning anything. Rhetoric with the goal “beat the scientists into plough shares” is, in view of the future of Estonia as incompetent and deleterious as the belief, that obtaining the degree of PhD and publication of half a dozen pieces of writing, which none beside the author has taken the trouble to read and will not do so, gives him the right to demand that the state of Estonia should guarantee to the owners of that degree for the forthcoming decades the bread and something else to bite into. Both are permeated by the belief that the perpetual motion is still possible. Namely, the perpetual motion of the second kind – i.e. the one that not only spins but produces energy as well.

#### THE ACADEMY IN THE EUROPEAN RESEARCH AREA

Estonia belongs to the European Union: that novel fact of fundamental significance is as essential to our research and development as to Estonia as a whole.

Being an Academy of a member state, our goal is not only to follow the respective debates. We are to directly participate in giving shape to the R&D policy of the EU. That policy is designed, as we can bear witness just now, while giving shape to the seventh framework programme, to a significant degree through the assemblies, the common denominator whereof is “non-governmental organisations”. The European Commission has, notwithstanding its much played down bureaucracy achieved the organisation of work, where the formation of important science policy decisions though demanding the consensus of the Parliament, the Commission and the Council, involves, in their preparation, in-depth exchange of opinions with a wide variety of “beneficiaries” – among them, by far not in the background, also the academic community through its various representatives. Included in the dialogue are even the scientists “as individuals in their own right”. Hence the Academy considers, as its vital task the presentation of main standpoints of the innovation policy of the European Union in Estonia. Those amount to a strongly

felt persuasion that Europe does not have an alternative to the knowledge-based society and that the technological innovation is carried out through high level and innovative research. Furthermore – identification and analysis of potentially harmful sides of the technological success is in its turn, and first and foremost, a research work.

The European Research Area as a concrete research and, even more than that, development policy, towards which the European Union is moving (hence we, too) erases at an increasing pace the borderlines between the research and development of nation states – niches to the mediocrities are vanishing. The root cause should be clear also to us, in particular to us: this is the answer of the European Union to the global challenge. This is doubtless the question about competitiveness of economy, but more essential is the ensuing question about the sustainability of the European spiritual and material culture.

European Research Area is a process and not an administrative decision: yesterday it was not there, today it is. This begins by and large in the regions – the Academy wishes to make its constructive contribution to take the steps necessary for uniformity of the research areas of Estonia and Nordic countries. For Estonia it is essential to find those Estonian research and development programmes, which we wish to open to the member states. And not only to them – the EU research policy is in an ascendant line active in its relations with the research of the rest of the world.

#### DESIGNING ESTONIA'S FUTURE – THE ACADEMY'S PLACE

Naturally the Academy will participate at elaboration of development plans, essential for Estonia. Estonia has started compilation of the following State Development Programme – a significant document of high degree of detail. Congruent with that must be a second document, “The Knowledge-based Estonia II”. It would be advisable for Parliament to start the analysis regarding the extent the goals it worded in the text of “The Knowledge-based Estonia I” have been met. The Academy is ready to participate in such analysis, and also to organise it, when commissioned to do so by the Parliament, as an independent expert. The analysis of the Lisbon process, placed wherein in the sovereign first place has been the capability of the European Union, in the first place, and emphatically, of the governments of the member states, to comprehend the central place of research and development in safeguarding the future of Europe, is the point of departure also to our Academy.

#### THE ACADEMY AND THE ESTONIAN INNOVATION POLICY

The Academy, following with immense attention the formation of Estonian innovation policy and actively participating therein through its membership, finds that in connection with rapid growth of the said sector and the import of the problem range for the future of Estonia, there has emerged an indispensable need to thoroughly overhaul it. It may be that the centre of gravity of the problem today is, as a matter of fact, not only and not to such a degree in

the formation of the innovation policy, but rather in its implementation. There is no room here to delve into details, not even to enumerate them in a rough outline. Suffice it to mention that the structure hauling along the whole application sector on the legal basis of private law also hauls along half a dozen of areas, including tourism. Innovation has long since become a concept of so central a meaning in planning the social economic development of the states that the sector implementing the respective political decisions must have a very clear organisational identity. It is here where one should start, in the first place, and the pre-eminence of meaningful competence must become the goal, like it is in the sector implementing the science policy. Rooted must become the understanding that for buying the “competence”, high proficiency is called for. Here the Academy can surely offer its help.

The Academy acclaims the launching of the measures, which are spearheaded to the enhancement of awareness about the essence of innovation and about its necessity. The Academy and hopes that the activities to be designed for different target groups will bear the expected fruit.

Concerning the formation of trends of Estonian innovation policy, the Academy considers it especially important that this process should be in essential compliance with the respective priorities of the European Union, in the first place with those expressed in the Framework Programme. Ignoring that would be a gross strategic error. Should something happen (pro: fail to happen) due to incompetence we are prone to use the euphemism “shortage of administrative capability”. But this is by far too mild an expression – its excessive use seems to have made it equal to the expression “excuse me please, it happened by mischance”.

#### THE ACADEMY AND ESTONIA

The key to conceive the relation between the Academy and society is the understanding, that the Academy itself is part of the Estonian society. Naturally the Academy has a concrete place in analysis of those problems, which are essential to Estonia as a whole. We sincerely expect that our attention will be drawn to the problems, which we may have overlooked, but where the Academy could be of help.

We have been concerned, are concerned and will be concerned with energetics related problem range. We have been concerned, but could be more concerned with the whole of that complicated complex, embracing both the health of the environment and that of the population. The Academy cannot leave outside its sphere of interest either the information society relating topics or by far the essential points of danger, especially those the identification whereof is essentially a quantitative research, leading to qualitative conclusions. We cannot, like some politicians deem it possible to allow to themselves, ignore the AIDS related developments. Our minimal obligation is to discover and take cognisance of the points of danger, the related risks – to



point them out with a finger. Our goal, however would be the initiation of respective research work where it is necessary, so that the decision making process as a whole would base ever more on the analysis of facts. Moreover, our obligation is to contribute to having the solutions offered – the realistic ones thereat.

#### THE ACADEMY AND THE ESTONIAN SCIENCE ORGANISATION

The organisational basis of Estonian science, as it has been set up after regained independence, is adequate in its main lines and could, perhaps, serve even as an example to some countries nearby and afar. Seemingly, however, somewhere in the recent past we have come to a standstill. Perhaps the most important to be pointed out here is the prevailing primitive summing up of the peer review pieces of writing. This stage was expedient and progressive ten years ago – when the previous “gained-earlier” based financing paradigm had to be superseded. Today we do not lack the opportunities and knowledge to do better.

One must acknowledge that there is a difference between one type of science and another type of science, that there are sciences where a monograph research or a successfully realised intellectual property is much more valuable than scores of peer review printed units in a magazine of the near zero level impact factor. Whereas it is necessary to achieve, that in the directions, where research is a direct part of the world science – those being natural and engineering sciences – the essential component of value estimates should be specific quality indicators, such as where the research works have been published and whether anybody has read them in the way, that he or she has found it necessary (inevitable) to point that fact out in his research works. In other words, whether the created intellectual achievement or even property, has just stayed somebody’s private files, or whether somebody else has picked it up and put to use. Which means that Estonian science has attained the level where the quality oriented indicators in value estimates (here – in valuation estimates) should possess a rather clearer weight.

Emphasising the need of meaningful progress, the Academy holds that it is due time also to appreciate several organisational steps. Among them:

- a) The Academy will start consultations with the aim to bring the Estonian Science Foundation under the “legal umbrella” of the Academy – i.e. to transform the private law based foundation into a part of the public law based Academy. That step presupposes wide scope groundwork, extensive, multilevel consultations and of necessity essential changes in the Academy Act. Changes in the legal acts must provide for assurance, both to scientific community and lawmaker that the moves contemplated are to the benefit of development of science. It is specifically the scientific community that must be assured with persuasion – and that can be made primarily by the text of the legislative steps – that moving EstSF “under umbrella” of the Academy does

not mean that “General Assembly will now start handing out the grants”.

It would be inopportune to lay down fixed deadlines, but our goal is to obtain, within half a year the assurance of whether or not that plan will gain sufficient support. Given the availability of requisite preconditions, it is realistic to finalise the preparatory works (including the plans of legislative changes) within 2005.

b) The Academy will start consultations with the Government of the Republic (in the first place with Ministry of Education and Research) in the matter of bringing under the umbrella of the Academy that portion of Foundation Archimedes, the function whereof is support of the European Union research and development programmes in Estonia. The Academy would also propose to bring under its umbrella the system of evaluation of science, prescribed by law.

The goal of the Academy would not be, in this connection to “take over” the function of servicing the framework programmes of Foundation Archimedes, but to set up a structure, which would to a significant extent cover the Estonian research and development interaction with the European Union structures, to the extent and especially “in the depth”, which is not immediately the obligation of the Government of the Republic. The current lower part of Foundation Archimedes, having already won the trust of the scientific community would constitute one half of it. But there is a need for a second part, too – which we would call here the proactive analytical-synthesising dimension. The Government needs it, the scientific community needs it, and that is needed by entrepreneurship, oriented to innovation.

It is evident that with the setting up of the European Science Council the Framework Programme of EU will be inherently complemented and the addition will directly hook up to the yield of the main activity of the Academy. On the other hand – there is one more facet to be added to the Framework Programme – the security related research. This will be also performed in the conditions of free competition covering all member states. The Academy has no information available that anyone in Estonia should have tackled that specific aspect of conceptual enlargement of the EU Framework Programme.

The Academy wishes to be the proactive intruder in those questions crucial to science, which are “so crucial”, that it looks like they are no one’s concern in these quarters, including deplorably on the level of the administration, specifically. Take for instance GEANT – a pivotal concept in the European Union, whereas in this country it is the hobby of enthusiasts. This is so notwithstanding the fact that without such infra-structural resource, Estonia has had to forgo from several important directions in the development of research and technology, as of today, and will have to forgo from even more, as the time progresses.

For several years already, the Academy has not been the “umbrella” of the Academic Library. The more so the Academy will emphasise the need to create an all-Estonian blanket system warranting electronic availability of science and engineering periodicals (not limited therewith). Elements of such system are already in operation, however apparently many domains are covered with temporal, inherently hectic solutions, – available today, gone tomorrow, to reappear soon and so on.

“The Academy and the publication effort” is an important word combination, if only for reason that it accounts for an outlay of a significant portion of funds allocated to us from the state budget. What goal are we after with that money? How should it be earmarked to serve with maximum efficiency the main target – promotion of science in Estonia? What is the feedback between the matter printed for that money and development of research? What way is currently the best in order the research efforts made in Estonia and about Estonia would spread most effectively in the world and in Estonia itself? And what would produce the longest aftermath (aftertaste)? What place in that is held by an “original article”, what place for instance by a monograph describing the Estonian nature, by a university textbook of regular use, taking both the knowledge and the terminology describing them to the widest readership? What should we make of *on-line only*, *digital-only* revolution? More properly – how should we join in with that? Those and similar questions merit the attention of the Academy, in close exchange of thoughts with the universities, at that.

#### THE ACADEMY AND UNIVERSITIES

Restoration of independence and the following organisational rearrangements have cardinally changed the relations between the Academy and universities. The Academy as a research organisation is no competitor to research institutions in distribution of lean purse of the research money. In view of the fact that the Academicians are mainly the researchers working at universities and having worked there, the Academy may be justifiably reckoned to be an extraction of the *crème de la crème* of the mature generation of the university science. That *crème de la crème* have, in their turn set out in their path of researcher starting from the rung of senior laboratory assistant, instructor, lecturer or the like, in the lower end of the academic hierarchy. The Academy “does not worry” about its relations with the universities also for the reason that our deepest motives overlap – to stand up for the future of the research in Estonia. The Academy has done, is doing and will do its best in order to drive home the need for and attribute value to research based education.

Nevertheless, the Academy as organisation assuredly has opportunities gone unused, to tighten the relations with the daily routine of the university life. Exactly the same also pertains to other research institutions. Several colleagues from various Divisions have actually expressed the opinion that Divisi-

ons of the Academy should “in an organised manner and *in situ*” review the teaching and research effort, respecting their profile in Estonian universities, its base, perspectives and problems. That would be distant from “evaluation” of which we all have meanwhile become somewhat tired of and surely would help the Academy as a whole to better discern the actual life, giving birth to new generation of researchers.

The prism, through which the Academy looks at Estonian science, training in research and their organisation is not identical with that used in universities and in every concrete university. The plurality of angles of view against the background of essential coincidence of the problem range under consideration will assuredly just enrich the opportunities to jointly promote Estonian science and development, in furtherance of the innovation.

#### THE ACADEMY AND MEMBERS OF ACADEMY I

It is an inherent attribute to the world academies, be they set up through “Royal Charters”, presidential decrees, Parliament decisions or otherwise, to maintain what may be conventionally called “club activity”. The implication of that is however deeper than can possibly be inferred from this expression. Given our Academy, it needs to be thought about conditions, in which the Academy as an association of Members of Academy daily acts. One cannot deem as normal the situation when a Member of Academy arriving here lacks, for all practical purposes, the place in the headquarters of the Academy where to conveniently take a seat, talk with colleagues and guests. The protracted, however persistently progressing and thorough repairs in the centuries-old Academy House at 6 Kohtu Street will provide at least some meagre opportunities for that, already this year. While not considering this, in a wide meaning the “Academy’s task”, but a forthright obligation of the Academy Board, there are the following steps contemplated:

a) The Academy House at 6 Kohtu St: after the repairs of the second floor, a spacious, cosily furnished room (rooms?) will be set up in the Academy House, where a selection of central science journals of general content will be ordered, including the popular science magazines, where there will be WiFi and also some computers of general use, where a Member of Academy can bring along guests, if he so wishes, to talk with them;

b) Perspective in Tartu: in the nearest proximity the house of the Institute of Technology of University of Tartu will be completed. There will be, on the first floor three studies for the Academy, and also the opportunity to use a smaller and a larger conference rooms. There are reasons to believe that this plan will realise by end of the first half of the year 2005.

#### THE ACADEMY AND MEMBERS OF ACADEMY II

A body of Members of Academy as we now are, our place in society and vitality for the society are determined, in many aspects by the position of our membership, Members of Academy, in this society. Not in the sense of the number of “incumbencies”, but measured through our summary contribution. The Academy as a whole must be more than the simple sum, thus found. The largest part of the sum itself is accounted by the science, in the first place by the science. Hence the obligation of the Academy as an organisation is to take care of the opportunities of its membership to creatively develop the science, to realise its scientific ideas, to nurture and bring up the next generation of the researchers. The Academy is the research organisation – not a research institution. The best way to provide for the conditions necessary for Members of Academy to successfully do science is so simple, however – to staunchly stand up for novelty and high level of research, to do everything in our power to have that primary principle loud and clear written in procedures of funding the science.

#### SPIRITUAL LIFE IN ESTONIA AND THE ACADEMY (ies)

Understandably the Estonian spiritual life is much more extensive than the slice thereof having consolidated under the umbrella of the Academy. The Academy is only one of the forms of its organisation for one part of carriers of that spirit. Knowingly in the world, in particular in Europe, the name of the Academy is also born by the associations, which bring together “fine arts” and their outstanding cultivators and fosterers. In a small country those two things could be united, but as my colleagues well know, this path is but scarcely open to our Academy – I dare say only theoretically. In practice it will not work, because even in case of the best propensity and predilection the respective “fine arts” part would not add up to the volume in the Academy, which would be adequate in the meaning of the goal. Yet take just a few examples. There have already appeared 50 volumes of “Estonian Story of Thought” – the documents of Estonian spiritual life from the past until today. For years already, in defiance of the hardship, there has appeared the unique magazine The Academy, to spread “spiritual life”. There are more; many more could be added. Hats off to them! Although the examples presented are not obligatorily in direct relation with the “The Academy of Fine Arts and Letters” as a possible organisational basis, it is sufficient to illustrate the first sentence of this section. I do not know how much the Academy can “finish off” here, in a direct sense, however minimally and for the start we can give our clear and resounding support to the idea of the emerging of such a “sister Academy”.

#### CONCLUSION

The Academy has no claims to the position of *arbiter elegantiarum* in the Estonian society of the 21<sup>st</sup> C. – either in a general plan or relating to science. Unsubstantiated claims will not attain such a position of arbitrator in a democratic society anyway.

The Academy consists of scientists and as such knows only too well, that the actual research and development takes place in universities and other research institutions – in the first place and predominantly by the generation perceptibly younger than membership of the Academy. This is at least how it should be. It is in the name of such a state of affairs that the Academy wishes to act, in co-operation and dialogue with the society, its elected representative bodies and administration, with universities and other research institutions, with our learned societies.

Yet the Academy claims for many things – for the right to change, and develop. The above “theses” are part of the whole, the actual background whereof is wider than that narrowly related to the Academy. It is wider also than that related solely to Estonia. It is much wider.

President of the Republic of Estonia *Arnold Rüütel*

#### ADDRESS

I congratulate the Academy and your newly incumbent President Richard Villems on occasion of taking office. It is a unique day in the story of development of our state when the top science and the dazzling minds of science are the pivot and pole of the public attention. It gives us a rare opportunity to tangibly feel the dimensions, which the towering intellects coming from the small nations have. Although our scientific community is not numerous, it is still large in the qualitative sense of the word, because only this part of our small nation represents in the world the Estonian national sciences and Estonian scientists and because the scientific community is part of the nation whose ideas coincidentally develop and enhance the world surrounding us and enlarge our conceptions of that world.

Member of Academy Richard Villems has attended the birth of one specific area of science. He himself modestly writes though that when he arrived in the laboratory of Member of Academy Artur Lind as sophomore of University of Tartu, the work with nucleic acids had already started. Now he is the new President of the Estonian Academy of Sciences and a specialist of international renown in the domain of decoding genetic information and molecular evolution. These rapidly developing areas of research are superbly suited to corroborate the fact of general knowledge that the discoveries of crucial significance to the humanity are genuinely cross-border events.

In the present European research space, of which part is contributed by Estonia, this should be perceived as a tangible fact. If Europe can move, in this decade towards the knowledge based society, as laid down by Lisbon strategy, Estonia has no other option, as part of Europe. Modernisation of education and rebuilding of infrastructure, innovation and social well being, being as they are our strategic goals, must be transformed from visions into a reality. In this connection, the potential of membership of our Academy of Sciences is

invaluable. Resorting to it, we can formulate and implement efficient programmes in order to keep Estonia on the sustainable path. Inherently linked to the above is the care for new generation of the scientific community, so that it would sprout and that the crop would not get lost for Estonia. The last mentioned painful problem has been a thorn in our flesh for years, because the future of many young scientists has never been as thorny as now, in the life of the 67-year old Academy. Deplorably, we seem to lack consensus over the necessity of the national science. This is evidenced by the modest allocation the science is earmarked from the state budget, in the first place. Given the limited resources, which fact cannot be denied, we will have to agree on most urgent needs. One of the high level scientific assemblies where the pain spots and dire needs of our society are considered has for years been Academic Council of the President of the Republic. I am extending my thanks to Member of Academy Villems, who accepted the invitation to membership in Academic Council. I also extend my heartfelt thanks and respect to former President of the Academy Jüri Engelbrecht for the valuable contribution to Estonian science and for immense organisation work. I would much like you to continue your rewarding and worthwhile activity in the Academic Council.

Esteemed Member of Academy Richard Villems, now that you have accepted the President's Chain of Office from your predecessor, I wish you much success in leading the Academy of Sciences. Pray should this day remain as a landmark in your personal history of science and that of the whole Estonia. Pray should your drive and stamina never falter and give way! Congratulations!

Rector of Estonian Agricultural University *Alar Karis*  
ADDRESS ON BEHALF OF COUNCIL OF RECTORS

In the name of Estonian universities I have the honour to hail and congratulate the new President, to wish him strength and energy in his new office. The Estonian universities see in you the man who can amalgamate the scientific community in Estonia and to provide to the voice of scientists in the society a much larger leverage. You have searched for the missing link in the science. This is what you claimed in the journal *Academy* 10 years back, but more often than not the connecting links are missing also in the society, conspicuously absent are charismatic persons, who could second to the processes of the state and the society so that those links would constitute a whole.

When Members of Academy elected you their head, they realised that you are a leader, who could make it and become the coupler of the links. As we heard, you are a well-known scientist both at home and abroad; you feel equally at home in science organisation and financing of science; you are well versed in details and mazes of the science's red tape. Hopefully you can unearth the best to the Estonian science and universities, out of that repository, in your new hypostasis. You have for long years been the connecting link between different generations of scientists. Almost all present day molecular biologists of some stature view you as their mentor. Even more so – considering themselves as your pupils are also those who have never defended a doctoral thesis under your supervision nor have ever listened to your lectures, me personally included. Under your leadership we would like to see that young scientists, our after-growth in the Academy would be paid more attention, that the young would be encouraged, lauded and enthused, for instance by bestowing prizes on young scientists, and according to that, more preponderance in the public life of the Academy. A clear signal of according to those events superior weight would be attendance in this hall of the whole academic community, besides the young scientists and some isolated Members of Academy, when handing over those tokens of recognition - like it is today, at your inauguration.

The schemes of funding of Estonian science have been replenished by a novel concept – a national science. What is a national science? Is it just printed matter considering the Estonian language, literature and history, or is it also the printed matter in Estonian handling the natural and engineering sciences, maintaining the mother tongue in science, or is it even the national fruit or berry sort, having demanded decades of scientific research to breed? Be it for instance the apple sort *Tallinna roos* beside the red-cheeked *Tartu roos*.

There is more to it. What is the weight and significance of the Proceedings of the Estonian Academy of Sciences presently and what will it be in the future, in the research space of Estonia and Europe, both in the context of sciences of the world and national sciences. However, let us bestow a glance at history



and quote a document of historical value dating from 1938: “Thus it could happen that the whole professional education turns out to be distant and alien to the Estonian life, unless its scientific basis is laid down deep. Therefore it should be the universities who are clothed with the particular authority to promote scientific thinking and conventions as scientific research”. The Estonian universities hope that with your staunch principles, your charismatic personality you can elevate the role of science in the Estonian society, you can transform the co-operation of universities and the Academy into an integrally functioning activity, you can make the opinion of scientists, in formation of societal processes, something to be reckoned with and decisive. In the name of the Estonian universities, I wish you stiff backbone and the stamina to brave the untoward developments, like you have heretofore. Should the Estonian Academy of Sciences have fortune and success!

Vice President of the Academy of Finland *Anneli Pauli*  
ADDRESS IN THE NAME  
OF GUESTS FROM THE FOREIGN ACADEMIES

I am most honoured of having this opportunity to attend this ceremony and to speak here on behalf of the foreign collaboration partners of the Estonian Academy of Sciences. Scientific cooperation, established between our organisations many decades ago, has made it possible for a great number of researchers to meet and get to know their colleagues and acquaint themselves with the research carried out in our countries. Today our researchers collaborate actively both in bilateral and international research projects and research programmes.

Professor Jüri Engelbrecht, former President of the Estonian Academy of Sciences, has recently published a very interesting book “Attractors of thoughts”. The cover of the book features fractals, reflecting the complexity of the world. The rules generating fractals are simple, but if they are used successively they result in a beautiful structure. Professor Engelbrecht uses the idea of fractality in a figurative sense to describe the processes of thinking: simple ideas may generate more complicated ideas and *vice versa*. I think that this is exactly how things work also in science and science policy.

What are the simple blocks and rules that are needed to make a beautiful “science fractal”? In science there are only three elements that are truly important, and these are the following:

- First: excellence
- Second: excellence
- Third: excellence

If the principle of promoting excellence is kept in mind in research and in the procedures needed to support research, a good and sound basis for new innovations can be created.

In my opinion there is no real and sustainable relevance of any kind without very high quality. I am convinced that we all are willing to use the “blocks” of high quality to build a knowledge-based society in Europe. Being now all members of the European Union our possibilities to achieve this goal are better than ever. All Baltic and Nordic countries belong to the category of small countries, even though there are differences in size among us. We all need each other.

The structures of our research and innovation systems are different. However, being members of the same EU family within the European Research Area will probably lead to some harmonisation of the structures and instruments of research funding among EU member states. This would naturally make collaboration and co-funding easier in practice. But much more important than structures is the genuine willingness to collaborate for the best of science and research and for the benefits of our societies.

I am fully convinced that the principle of emphasizing quality and the spirit of doing things together with its foreign partners will direct the policies and activities of the Estonian Academy of Sciences also in the future. This will pave the way to deepening and intensifying cooperation between Estonia, Latvia, Lithuania and Finland, and in fact, more widely: between the Baltic and the Nordic countries. The new Nordic Research Board, NordForsk, will provide an excellent platform for this collaboration. Estonia, Latvia and Lithuania will now have a joint observer on the Board of NordForsk, but hopefully some day, all these countries will also be NordForsk members.

In the future, maybe, all the states around the Baltic Sea will form a prosperous and successful science and innovation based “meta-region” in Europe, a region that will attract the best talent and a great number of ideas and investments from all over the world. I am sure that we all share this dream and we all are willing to work hard for it!

With these words, and on behalf of the collaborators of the Estonian Academy of Sciences, I would like to thank Professor Jüri Engelbrecht for his invaluable work for the best of science and research as former President of the Estonian Academy.

Professor VILLEMS, the new President of the Estonian Academy of Sciences, has been granted the honorary title of Academician both in Finland and in several other countries. Professor VILLEMS’ scientific research is very highly valued internationally, and he is also esteemed as being active in science policy. This capability is indeed needed and most important in the work within the new, changing context of the European Research Area. The role of basic research is changing, and cooperation between various science organisations and research funding bodies is increasingly deepening. We all face new challenges, such as how to attract and encourage young people to take up a career in research, how to increase citizens’ confidence and interest

in education and science, and, naturally, how to respond to the complexity and diversity of international scientific cooperation.

I am most confident that under the very wise and highly competent leadership of the new President, Professor Richard Villems, the Estonian Academy of Sciences will successfully face the ever growing challenges of the globalising world, and also find new, interesting paths in science and science policy. Professor Villems, we all congratulate you most warmly on your entering the very important office as President of the Estonian Academy of Sciences.

Personally, and on behalf of all cooperation partners, I wish you, President Villems, all the best and every success in this challenging and interesting task!

Minister of Education and Research *Toivo Maimets*  
ADDRESS

Speaking in the name of Government of the Republic of Estonia and Prime Minister, who is presently attending in Davos the World Economic Forum, I congratulate you on occasion of the today's event, I wish power to your elbow to cope with the responsibility, referred to by Member of Academy Engelbrech, and success in that office.

The bewitching charm and the persistent source of discomfort with science is that it cannot be defined, at least I have always taken with a pinch of salt the assurances of people who maintain that they know how science can be exhaustively explained away. Nevertheless the science has the aspects, which display to the society that it exists, that it is needed so that everybody will be convinced that in evidence is an essential and important thing. The first aspect which of necessity comes to mind is how science acts in furtherance of development of our economy, the competitive posture of our economy and our opportunity to live a better life in the future. This was also touched upon in several speeches today, this is what the Lisbon process is about, this is often on agenda at the Cabinet meetings, where it is deliberated at length. This is an essential aspect to science, how science can contribute to our economy, there is no doubt about that. And yet I would say that implicit *per se* in our open constitution, which you also made a reference to in your speech, in our open economy, in our being member of Europe is that the knowledge based economy will be there willy-nilly, without choice. It will be oncoming like every next day. Wouldn't it be good, from time to time to wake up the next morning, and say that the present day arrived because we toiled much yesterday. It is not an especial headache to me as Minister of Education and Research, whether it will arrive or not.

I am concerned about how our people will manage in the knowledge-based economy – our researchers, our entrepreneurs, our young people. Will we be full-blooded participants, will we be free riders on that train or will we just be onlookers? In this connection, other very essential aspects of research enter

into play – research as general cultural activity, general cultural phenomenon, research as an educational phenomenon. Those are the aspects, which actually convey the feeling of assurance to our people that they will cope with the new society, in the vortex of those changes, that they will surely make it. Actually it is so, and I think it is quite important that when we see as centrepiece of development the man, not the economy, the most important aspects of research will be the general cultural aspect and the educational aspect. Without opposing them to economy, they are most vital aspects.

The Estonian Academy of Sciences has invariably been the good protector of the crystal of science, so that all its faces could radiate equally brightly and powerfully. I would like to thank Member of Academy Jüri Engelbrecht, who has been able, in the past couple of years, in co-operation with the Minister and the Ministry, to excellently stand out for the science, to defend those thoughts, to maintain and to develop them. I believe that with you, Richard, this co-operation will not at all turn out anywhere worse. Congratulations!

## **NATIONAL AWARDS TO THE MEMBERS OF ACADEMY**

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### **NATIONAL SCIENCE PRIZE**

Awarded by the Ordinance of the Government of the Republic of Estonia, upon proposition by Commission for National Science Prizes no 97 21st February 2005.

FOR LONG AND PRODUCTIVE RESEARCH AND DEVELOPMENT WORK



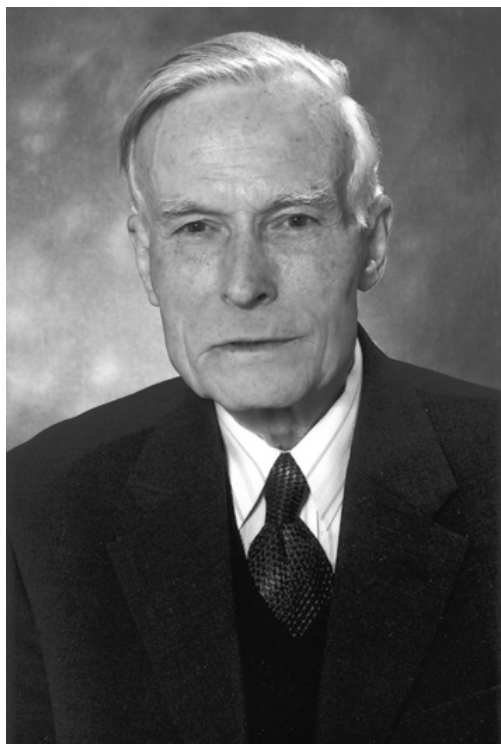
*Ilmar Koppel*

Scientific activity of Ilmar Koppel is characterised by interdisciplinary aspects, both fundamental and applied, skilful synergistic combination of modern experimental and theoretical research methods and meaningful generalisations, basing on results obtained, giving impetus to a wide area of research. Main directions of his work comprise: research of solvent effects; acid-alkaline balances; researches of reaction mechanisms; neutral super-acids and super-bases, photoelectron spectra of organic compounds; substituent effects in organic molecules etc. Several research results of Member of Academy Ilmar Koppel have made it to the pages of internationally known monographs and university textbooks, and to the inventories of so-called named concepts widespread in chemistry.

## ANNIVERSARIES

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Member of Academy *Endel Lippmaa*

Endel Lippmaa was born on 15 September 1930 in Tartu to the family of Professor in Botany Teodor Lippmaa – Member of the first composition of Estonian Academy of Sciences (1938–1940).

In 1948, Endel Lippmaa graduated from Nõmme Gymnasium and in 1953 Tallinn University of Technology, Chemistry and Mining Department *cum laude*. Thereafter he enrolled at post-graduate programme and in 1956 defended his thesis of Candidate in Engineering at Tallinn University of Technology and in 1969 his thesis of Doctor of Physics and Mathematics at Institute of Chemical Physics of the USSR Academy of Science. In 1971 he was awarded Professorship.

In 1956–1961 he worked at Tallinn University of Technology as senior lecturer and docent, thereafter in 1961–1980 as Head of Department of Physics at Institute of Cybernetics. In 1980 he became Director of Institute of

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Chemical and Biological Physics and Head of Laboratory of Chemical Physics. In 1972 Endel Lippmaa was elected Member of Estonian Academy of Sciences. In 1977–1982 he was Secretary-Academician of Division of Physics, Mathematics and Engineering of Academy of Sciences and in 1999–2004 Head of Division of Astronomy and Physics.

Endel Lippmaa belonged to the 7th Riigikogu, in 1990–1991 he was Minister for the Eastern Affairs and in 1995–1996 Euro-Minister.

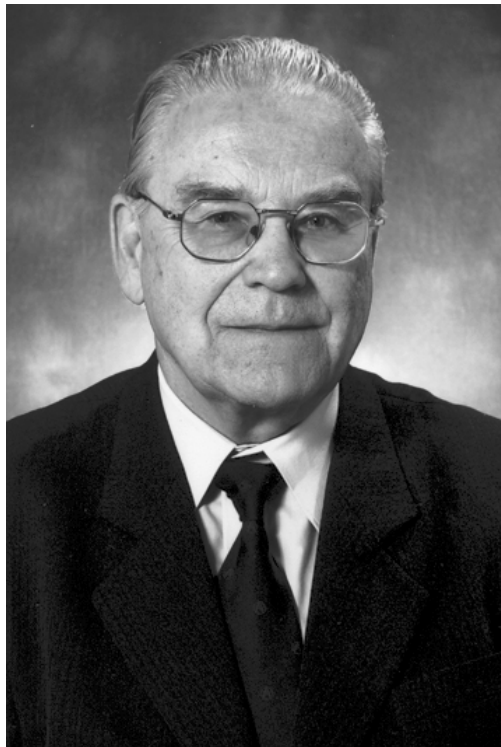
Currently he is Head of Laboratory of Chemical Physics at Institute of Chemical and Biological Physics and Head of Centre of Excellence of Analytical Spectrometry, starting from 2003, Chairman of Association of the Centres of Excellence of Estonian Science.

Characteristic to life and activity of Endel Lippmaa is implementation of novel directions of development in R&D and amalgamation of different domains into inter-disciplinary and dynamic research fields. Over the years, the circle of his scientific interests has constantly expanded – added to the techniques of chromatography and radio-spectroscopy have been those of mass-spectroscopy and laser-spectroscopy, his interest in physics and chemistry has been intertwined with biochemistry and molecular biology.

Endel Lippmaa has authored over 500 research articles, a number of theses have been defended under his supervision. He is Member of Academy of Sciences of Finland, Member of Swedish Royal Academy of Engineering Sciences and member of many other international scientific organisations.

He sits on the Academic Council of the President of the Republic, and on Higher Education Evaluation Board; he has belonged to R&D Council, to Science Policy Commission of Ministry of Education and Research, and other assemblies.

In 2000, Endel Lippmaa was awarded Order of the National Coat of Arms 2nd Class and he merited National Science Prize for Long and Productive Research and Development Work.



Member of Academy *Anto Raukas*

Anto Raukas was born on 17 February 1935 in Tartu as the third child to a schoolteacher's family. Childhood of the future Member of Academy passed in the neighbourhood of Tartu in the farmstead, where children were left sufficient room for uninhibited development, sometimes tempting them to engage in boisterous and bawdy entertainment, but it also directed them to free and creative thinking.

Thence, in 1953 Anto Raukas graduated from Hugo Treffner Gymnasium with gold medal and continued studies at University of Tartu, which he graduated in 1958, majoring in geology. In 1962 he was awarded the degree of Candidate in Geology and in 1973 the degree of Doctor in Geology and Mineralogy with Estonian Academy of Sciences.

Anto Raukas was awarded Professorship in 1980. He was elected Member of Estonian Academy of Sciences in 1977. Originated from his pen have by far over a thousand pieces of writing, half of which are earnestly scientific and have been published in almost 30 countries (incl. USA, Japan, Great Britain,



Germany, France and elsewhere). Main directions of research of Anto Raukas are quaternary geology, environmental geology and meteoritics.

For a long time, Anto Raukas has been related to Institute of Geology. He started his career as senior laboratory assistant and senior mechanic, continuing as post-graduate student, later as junior and senior research scientist. Starting from 1965, Anto Raukas has been Head of Division of Quaternary Geology at Institute of Geology. For over ten years he has been Professor of Estonian Marine Academy.

In 1982–1989 he was Secretary-Academician of Division of Chemical, Geological and Biological Sciences of the Academy. He has been Scientific Counsellor to Government of the Republic of Estonia and Chairman of Culture Prizes Committee of Baltic Assembly. He belongs among regular or honorary members of many science organisations and is sitting on editorial boards of several scientific publications both in Estonia and elsewhere in the world.

Besides academic activity he has indefatigably and briskly participated and expressed his opinion in media discussions at various topics of essence to the society.

Anto Raukas relaxes his spirit and accumulates his strength by hiking and engaging in sports matters – both playing health sports and actively following sports events, or promoting the activities of Sports Society Kalev, however not entirely disregarding the hobbies of his youth, which won him the title of Youth Champion in athletics, skiing, tennis and volleyball. On the top of all Anto Raukas has had spare time as well as professional and purely aesthetic interest for searching the beauty, music and colours embedded in rocks, and for also writing about them.

Twice Anto Raukas has been deemed worthy of National Science Prize (1991 and 1996). He has been awarded Karl Ernst von Baer Prize, Member of Academy Luht Prize and several other tokens of recognition.

In 1998 his work merited Order of the White Star 3rd Class.

More anniversaries in 2005:

65th anniversary

- 16 January Member of Academy *Ilmar Koppel* (elected Member of Academy 1993)  
29 September Member of Academy *Jüri Martin* (1990)  
25 November Member of Academy *Rein Küttner* (1997)

60th anniversary

- 1 April Member of Academy *Enn Mellikov* (2003)  
2 June Member of Academy *Peeter Saari* (1986)  
28 October Member of Academy *Peeter Tulviste* (1994)

## **MEMBERS OF THE ACADEMY**

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As of February, 2006

**Olav AARNA**, born 4.11.1942, elected 1990, informatics. Tallinn Technical University 1965. Riigikogu (Parliament), Chairman of the Cultural Affairs Committee (2003); Lossi plats 1a, 15165 Tallinn ESTONIA, Tel: +372 631 6480, Fax: + 372 631 6485, E-mail olav.aarna@riigikogu.ee. HOME ADDRESS Nooruse 1-45, 76901 Tabasalu, Harku vald, Harju maakond ESTONIA, Tel: +372 603 2060. Widower, three sons and a daughter.

**Jaak AAVIKSOO**, born 11.01.1954, elected 1994, exact sciences. University of Tartu 1976. Rector, University of Tartu (1998); Ülikooli 18, 50090 Tartu ESTONIA, Tel: +372 737 5600, Fax: +372 737 5640, E-mail: jaak.aaviksoo@ut.ee. HOME ADDRESS Tähe 91a-7, 50107 Tartu ESTONIA, Tel: +372 734 9000. Married, two sons and a daughter.

**Hillar ABEN**, born 3.12.1929, elected 1977, mechanics. Tallinn Technical University 1953. Head of the Laboratory of Photoelasticity, Institute of Cybernetics at Tallinn Technical University (1987); Akadeemia 21, 12618 Tallinn ESTONIA, Tel: +372 620 4180, Fax: +372 620 4151, E-mail: aben@cs.ioc.ee. HOME ADDRESS Hiiu-Maleva 30-2, 11619 Tallinn ESTONIA, Tel: +372 657 2407. Married, two sons.

**Mihhail BRONSHTEIN**, born 23.01.1923, elected 1975, agricultural economics. St. Petersburg State University 1949. Professor emeritus, University of Tartu (1993). HOME ADDRESS Kolde pst 104-44, 10316 Tallinn ESTONIA, Tel: +372 5662 9275. Widower, a son and a daughter.

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**Erast PARMASTO**, born 23.10.1928, elected 1972, botany. University of Tartu 1952. Senior Researcher, Institute of Agricultural and Environmental Science, Estonian University of Life Sciences (1991); Riia 181, 51014 Tartu ESTONIA, Tel: +372 738 3027, Fax: +372 738 3013, e.parmasto@zbi.ee. HOME ADDRESS Uus 3-85, 50603 Tartu ESTONIA, Tel: +372 740 2772. Married, two sons and three daughters.

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**Karl REBANE**, born 11.04.1926, elected 1961, theoretical physics. St. Petersburg State University 1952. Professor emeritus, University of Tartu (1993); Institute of Physics at University of Tartu, Riia 142, 51014 Tartu ESTONIA, Tel: +372 742 8159, +372 742 8882, Fax: +372 738 3033, E-mail: [rebanek@fi.tartu.ee](mailto:rebanek@fi.tartu.ee). HOME ADDRESS Sihi 7, 50411 Tartu ESTONIA, Tel: +372 738 0347. Widower, a son and a daughter.

**Loit REINTAM**, born 12.11.1929, elected 1990, soil science. Estonian Agricultural University 1954. Professor emeritus, Estonian University of Life Sciences (1999); Viljandi mnt, Eerika, 51014 Tartu ESTONIA, Tel: +372 731 3537, Fax: +372 731 3535, E-mail: [loit@eau.ee](mailto:loit@eau.ee). HOME ADDRESS Tammsaare 2-13, 51006 Tartu ESTONIA, Tel: +372 742 2563. Married.

**Jaan ROSS**, born 5.04.1957, elected 2003, the humanities. Estonian Academy of Music 1980. Professor of music, University of Tartu (1996); Department of Philosophy, Lossi 3, 50090 Tartu ESTONIA, Tel: +372 737 5230, +372 522 6886, Fax: +372 737 5345, E-mail: [jaan.ross@ut.ee](mailto:jaan.ross@ut.ee). HOME ADDRESS Koidu 122-61, 10139 Tallinn ESTONIA, Tel: +372 648 1544. Married, a daughter.

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**Endrik NÖGES** (USA), born 5.04.1927, elected 1995, automatic control. Professor emeritus, University of Washington (1992); Department of Electrical Engineering, University of Washington, Box 352500, Seattle, WA 98105, USA, Fax: +1 206 543 3842, E-mail: noges@ee.washington.edu. HOME ADDRESS 6826 NE 149th St, Kenmore, WA 98028, USA, Tel: +1 425 488 9812, E-mail: enoges@comcast.net. Married, two sons and a daughter.

**Els OKSAAR** (Germany), born 1.10.1926, elected 1998, linguistics. Professor, University of Hamburg (1967); Institut für Allgemeine und Angewandte Sprachwissenschaft, Universität Hamburg, Bogenalle 11, D-20144, GERMANY, Tel: +49 40 42838 4761, Fax: +49 40 42838 3595, E-mail: IAAS.PHASI@uni-hamburg.de. HOME ADDRESS Parkberg 20, D-22397 Hamburg, GERMANY, Tel: +49 40 607 0803, Fax: +49 40 607 1795, Married, a son.

**Johannes PIPER** (Germany), born 11.11.1924, elected 1991, physiology. Professor emeritus, Max Planck Institute of Experimental Medicine (1992); Max-Planck-Institut für Experimentelle Medizin, Hermann-Rein-Strasse 3, D-37075 Göttingen, GERMANY, Tel: +49 551 389 9314, Fax: +49 551 389 9302, E-mail: piper@em.mpg.de. HOME ADDRESS Heinz-Hilpert-Str. 4, D-37085 Göttingen, GERMANY, Tel: +49 551 56 786. Married, a son and two daughters.

**Michael Godfrey RODD** (Great Britain), born 21.06.1946, elected 1995, process control and infotechnology. Director of Learned Society and External Relations, the British Computer Society, First Floor, Block D, North Star House, North Star Avenue, Swindon, Wiltshire, SN2 1FA, UNITED KINGDOM, Tel: +44 1793 417 610, Fax: +44 1793 417 432, E-mail: mrodd@hq.bcs.org.uk. HOME ADDRESS 16 The Garlings, Aldbourne, Marlborough, Wiltshire, SN8 2DT, UNITED KINGDOM, Tel: +44 1672 541 571, +44 783 186 0199, E-mail: mrodd@btinternet.com. Married, a son and a daughter.

**Helmut SCHWARZ** (Germany), born 06.08.1943, elected 2002, chemistry. Professor, Technical University of Berlin (1978). Institut für Chemie, Sekr. C 4, Technische Universität Berlin, Strasse des 17. Juni 135, D-10623 Berlin, GERMANY, Tel: +49 30 3142 3483, Fax: +49 30 3142 1102, E-mail: Helmut.Schwarz@mail.chem.tu-berlin.de. HOME ADDRESS Patschkauer Weg 15, D-14195 Berlin, GERMANY, Tel: +49 30 832 5246. Married, a son.

**Janis STRADIŅŠ** (Latvia), born 10.12.1933, elected 1998, physical chemistry and history of science. Chairman of Senate (2004), Latvian Academy of Sciences (1998); Latvian Academy of Sciences, Akadēmijas laukums 1, LV-1050 Riga, LATVIA, Tel: +371 7 213 663, Fax: +371 7 821 153, E-mail: stradins@lza.lv. HOME ADDRESS K. Valdemara 99-7, Riga, LV-1013 LATVIA. Married, two sons.

**Päiviö TOMMILA** (Finland), born 4.08.1931, elected 1991, history. Professor emeritus, University of Helsinki (1994), Fellow of the Academy of Finland (2004). HOME ADDRESS Kylätie 8 A, FIN-02700 Kauniainen, FINLAND, Tel/Fax: +358 9 505 1523, E-mail: paivio.tommila@aka.fi. Married, three sons and two daughters.

**Endel TULVING** (Canada), born 26.05.1927, elected 2002, psychology. Professor emeritus, University of Toronto (1992), Tanenbaum Chair in Cognitive Neuroscience, Rotman Research Institute of Baycrest Centre (1992). Rotman Research Institute, Baycrest Centre, 3560 Bathurst St., Toronto, Ontario M6A 2E1, CANADA, Tel: +1 416 785 2500 Ext. 3510, Fax: +1 416 785 2862, E-mail: tulving@psych.utoronto.ca. HOME ADDRESS 45 Baby Point Crescent, Toronto, Ontario M6S 2B7, CANADA, Tel: +1 416 762 3736. Married, two daughters.

**Henn-Jüri UIBOPUU** (Austria), born 11.10.1929, elected 1995, jurisprudence. Honorary Professor, University of Salzburg (1995); Institut für Völkerrecht, Churfürstenstr. 2, A-5020 Salzburg, AUSTRIA, Tel: +43 662 8044 3656, Fax: +43 662 8044 135, E-mail: Henn-Jueri.Uibopuu@sbg.ac.at. HOME ADDRESS W.Hauthalerstr. 17, A-5020 Salzburg, AUSTRIA, Tel: +43 662 848 4962, Fax: +43 662 848 4964. Married, a son and a daughter.

## **ESTONIAN ACADEMY PUBLISHERS**

Address: Kohtu 6, 10130 Tallinn, ESTONIA  
Website: <http://www.kirj.ee>  
Director: Ülo Niine, Tel: +372 645 4504, Fax +372 646 6026  
E-mail: [niine@kirj.ee](mailto:niine@kirj.ee)



Estonian Academy Publishers worked in 2005 in their traditionally developed rhythm, filling their statutory tasks, and issued ten scientific journals, peer-reviewed and indexed in international review publications. The Publishers' main mission has been to maintain a high standard as regards the contents of journals, their typographic performance, timely release and providing online access to full texts in addition to publishing printed versions.

In 2005 the journals were issued in the following volume:

Title	Number of issues per year	Total volume in printed sheet
Proceedings of the Estonian Academy of Sciences	20	92,5
whereof the series		
Biology. Ecology	4	22,5
Physics. Mathematics	4	16,0
Geology	4	17,0
Chemistry	4	14,5
Engineering	4	22,5
Oil Shale	4	24,0
Linguistica Uralica*	4	20,0
Trames	4	24,5
Acta Historica Tallinnensia	1	16,0
Estonian Journal of Archaeology	2	13,0
<b>Total</b>	<b>35</b>	<b>190,0</b>

In 2005 there were again many special issues of journals – in the Proceedings of the Estonian Academy of Sciences the total of 5, in journal Oil Shale two, in journals Trames, Linguistica Uralica and Estonian Journal of Archaeology one:

\* There also appeared Vol. 2 of that journal's book series "Meadow Mari Prosody", authors: Ilse Lehiste, Pire Teras, Toomas Help, Pärtel Lippus, Einar Meister, Karl Pajusalu, Tiit-Rein Viitso.

- “Biology. Ecology” no. 1: Special issue on large lakes of Estonia. Guest editor Juta Haberman, Estonian Agricultural University;
- “Biology. Ecology” no. 4: Special issue on Enchytraeidae, Newsletter on Enchytraeidae No. 9. Guest editor Tarmo Timm, Estonian Agricultural University;
- “Chemistry” no. 2: Special issue on physical organic chemistry. Guest editor Peeter Burk, University of Tartu;
- “Engineering” no. 2: EUROMECH Colloquium No. 447 Special issue on interaction phenomena in multiphase flows (Tallinn, 2003). Guest editors Jüri Engelbrecht and Ülo Rudi, Tallinn University of Technology;
- “Engineering” no. 4: 9th Symposium “Special issue on programming languages and software tools” (Tartu, 2005). Guest editors Kai Koskimies and Merik Meriste, University of Tartu;

“Trames” no. 2: Theory and practice in today’s teacher education. Guest editor Edgar Krull, University of Tartu;

“Linguistica Uralica” no. 2: Special issue in Estonian phonetics;

“Oil Shale” no. 2: Special issue on several aspects of optimization of power production in Estonia and reliability of electrical networks. Guest editor Heiki Tammoja;

“Oil Shale” no. 4: Special issue dedicated to oil shale as an energy-producing solid fuel combusted at thermal power plant; the impact of power production on the environment. Expert editor Arvo Ots.

“Estonian Journal of Archaeology” no. 2: Special issue on the archaeology of buildings. Guest editors Marika Mägi and Erki Russow.

All 10 journals appeared upon or prior to schedule, in last month of the quarter, by 20th–25th day.

All ten journals of the Publishers are electronically available either in the database of EBSCO or C.E.E.O.L.

In 2005, the journal “Proceedings of the Estonian Academy of Sciences” published in 5 series altogether 107 articles. The articles have been published by 237 authors, of whom 84 foreign authors and 153 Estonian authors.

Foreign authors came from 22 countries: Sweden, Finland, Denmark, the United Kingdom, Austria, Germany, The Netherlands, Portugal, Spain, Japan, France, USA, Korea, Australia, Turkey, Hungary, Poland, Czech Republic, Latvia, Lithuania, Russia and Ukraine.

Estonian authors came from all major universities and other research institutions:

Total number of authors 237			
Of whom (number/%)			
TTÜ	66/28	KBFI	11/4,6
TÜ	50/21	Others*	10/4,2
TLÜ	5/2,1	From abroad	84/35,5
EMÜ	11/4,6		

TTÜ – Tallinn University of Technology  
TÜ – University of Tartu  
TLÜ – Tallinn University  
EMÜ – Estonian University of Life Sciences  
KBFI – Institute of Chemical and Biological Physics

The journals on history “Acta Historica Tallinnensia” and “Estonian Journal of Archaeology” published articles by 23 Estonian authors. There were 5 foreign authors in journals on history (3 from Finland, 1 from Sweden, 1 from Latvia):

The authors’	structural composition (authors’ number/%)		
	“Acta Historica Tallinnensia”	“Estonian Journal of Archaeology”	Total
AI	5/ 50	3/ 23	8/ 35
TÜ	2/ 20	2/ 15	4/ 17
From abroad	2/ 20	3/ 23	5/ 22
Others	1/ 10	5/ 39	6/ 26
Total	10	13	23

AI – Institute of History

The journal “Linguistica Uralica” published in 2005 the total of 46 pieces of writing, including 21 research works, 11 reviews, 14 overviews and various pieces of information etc. From Estonia 22 authors made the total of 21 contributions, of whom from Tartu 14 authors, 14 contributions and from Tallinn 7 authors, 8 contributions.

From Russian Fenno-Ugrian research centres there were 18 authors with 21 contributions (from Mordovia 5 authors 6 contributions, Udmurtia 5 authors 5 contributions, Mari 4 authors 5 contributions, Komi 2 authors 3 contributions, Karelia 1 author 1 contribution and Moscow 1 author 1 contribution). From Fenno-Ugrian centres of other countries there were 5 contributions (from Ukraine 2 authors 2 contribution, Finland 1 author 1 contribution, Hungary 1 author 1 contribution, USA 1 author 1 contribution). Hence from foreign countries 23 authors with the total of 26 contributions.

From the volume of the whole year (20 printed sheet), English is the language of 44% of articles, Russian 37% and German 19%.

\* “Others” include: Estonian Marine Academy, OÜ Teadusloome, CUEKS Ltd, PIC Eesti Ltd etc.



Starting from 2005, at the beginning of all articles of the journal there is an abstract in English, regardless of the publishing language of the article.

In 2005, there appeared the second volume of the book series of the journal “Linguistica Uralica” - “Meadow Mari Prosody”.

In 2005, the volume of the journal “Oil Shale” was significantly larger than earlier (ca. 6 regular issues), due to special issues dedicated to Estonian electrical engineering and heat engineering. There were published the total of 52 articles, of which 42 research articles, 5 editor’s columns, 2 pieces of information, 1 book review and 2 personalias. From foreign authors (co-authors) there were 10 (24%) articles (3 from China, 2 Jordan, 1 Turkey, 1 USA, 1 Finland, 1 Denmark-Germany and 1 Nigeria). Due to special issues dedicated to Estonia, the share of foreign authors was smaller than usually. All articles were in English.

In 2005, the journal “Trames” published 20 articles from 29 authors. Of authors (co-authors) 9 (31%) were from abroad (USA, Germany, the United Kingdom, Ireland, Finland, Poland, Lithuania). Of Estonian authors, 12 were from University of Tartu, 7 from Tallinn University and elsewhere.

Hence the share of foreign authors in journals of Estonian Academy of Sciences is approximately 25–35%, which is viewed as fine by the Publishers. Such share of foreign authors bears witness to international renown of the journals, while providing to Estonian authors reasonable opportunity to publish their works. In journals where the humanities prevail the Estonian authors come mainly from Tartu, and in those where the exact sciences prevail, they come mainly from Tallinn, but the difference is not manifest.

The number of peer reviewers of journals and databases reflecting them has grown. It is worth mentioning that two series of the journal – “Biology. Ecology” and “Geology” – have been included into list of ISI journals “Thomson Scientific Master Journal List”.

For the aim to advertising the journals, in the fourth quarter the Publishers sent promotion leaflets to all major subunits of Estonian higher schools and research institutions. The Publishers participated with partial exposition at joint stand of Estonian Publishers Union at several book fairs:

- Baltic Book Fair 03–06.03.2005;
- Frankfurt Book Fair 19–23.10.2005;
- Gothenburg Book Fair 29.09–02.10.2005;
- at the publishers’ Christmas Sale 6–10.12.2005 at Tallinn National Library information and sale stand.

Journals and part of non-periodical issues have been included to international BowkerLink information system.

Journals have been included in several international databases concerned with distribution of journals:

- Otto Harrassowitz Booksellers & Subscription Agents;
- Nisso Ltd.;
- Swets Information Services B. V.;
- Minerva Wissenschaftliche Buchhandlung GmbH.;
- Moskovskaja Potšta;
- Librotrade Periodical Import;
- Kinokuniya Company Ltd.;
- Midori Book Store CO;
- Gordon Taciuk Exp-UMA Group Ltd.

Underway are negotiations with the organisation “The Charlesworth Group” for distribution of periodical issues online and hard copy versions in China.

The general requisites of the Publishers have been included into the following databases:

- European City Guide Publishing Company;
- International Literary Market Place;
- European Union Publishers’ Forum;
- F. Delbanco International Books and Journals

Besides the journals, in 2005 there appeared as commissioned work, as a direct issue of the Publishers or by contribution from the Publishers the total of 6 books. The weightier of them are:

- collection “Soil in ecosystem, monitoring and protection” (editor: L. Reintam, 208 pp.);
- monograph “Meadow Mari Prosody” (compilers I. Lehiste, P. Teras, T. Help, P. Lippus, E. Meister, K. Pajusalu ja T.-R. Viitso, 142 pp.).

## **UNDER AND TUGLAS LITERATURE CENTRE OF THE ESTONIAN ACADEMY OF SCIENCES**

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Established in 1993 (affiliate museum in Nõmme, the former Friedebert Tuglas Museum, established in 1971)

Personnel: 16, including 10 researchers

Address: Roosikrantsi 6, 10119 Tallinn, ESTONIA, [utkk@utkk.ee](mailto:utkk@utkk.ee)

Museum: Väikese Illimari 12, 11623 Tallinn, ESTONIA, [tuglas@utkk.ee](mailto:tuglas@utkk.ee)

Website: <http://www.utkk.ee>

Director: Jaan Undusk, Tel: +372 644 3147, Fax +372 644 0177,  
[jaan@utkk.ee](mailto:jaan@utkk.ee),

Academic Secretary: Eneken Laanes, Tel: +372 644 3147, [eneken@utkk.ee](mailto:eneken@utkk.ee)

Head of the Museum: Eha Rand, Tel: +372 672 2847, [eharand@utkk.ee](mailto:eharand@utkk.ee)

Under and Tuglas Literature Centre is an institution of research and development of the Estonian Academy of Sciences. Its mission is to study Estonian literature both in historical and theoretical perspective, to analyse Estonian texts within the context of historical Baltic-German literary space and world literature, and to promote literary and cultural thought in line with contemporary world trends.

The Centre's development activities focus on the publications of source materials for the Estonian national literature and the humanities. The Museum in Nõmme maintains the estate of Friedebert Tuglas, the Member of Academy and a man of letters. The estate comprises over 41 000 items of cultural value and includes F. Tuglas' library and art collection, but also the house and appurtenant garden. The latter serve as grounds for lectures and guided tours and offer individuals research facilities.

The major areas of research of Literature Centre are:

- Estonian literature in the 20th Century (including the exile literature and works of F. Tuglas),
- Baltic German research (including literature both in German and Estonian of the 13th-19th Century in the Baltic cultural area),
- History of rhetoric and rhetorical models of culture,
- Drama and theatre research,
- Gender in literature and culture.

Literature Centre participates in the work of rhetoric module of Centre of Excellence of Estonian History of Culture and Folklore at Estonian Literary Museum.

The Literature Centre fulfils the targeted research grant “Estonia’s Identity Narrative: Ideological and Rhetorical Models of Cultural Discourse” (2003–2007, supervisor Jaan Undusk). The goal of the project is to find new ways for historical in-depth description of Estonia’s national, ethnic and cultural identity. The range of texts used as sources vary from the belletristic to the historiographical, philosophical essayist and dramatic ones etc. In addition to the fairly advanced nation-centred arguments, in this project some cultural-geographical factors as well as these pertaining to the history of ideas are emphasised. With the help of typological research, several philosophical and theological mainstreams of the Ancient Greece and Christian Europe are being modelled as rhetorical and narrative processes. The same kind of rhetorico-narratological models have been applied to describe the German-Estonian bilingual Baltic literary space, at the same time attaching much more importance than usual to the Baltic-German factor in Estonia’s historical identity, which is directly related with the background of the Estonian culture.

In the subdivision “Estonian Culture in the 20th Century” (supervisors Aare Pilt; Rein Ruutsoo of Tallinn University), the aim is to provide an integral treatment of the rise of modern Estonian culture in the 20th century and its situation at the end of the last century. The view of Estonian culture is provided both per professional fields of activity (“specialty narratives”) and in conceptual crosscuts. Involved in the project are many commissioned authors from other institutions.

In 2005 Literature Centre organised the following scientific events:

16–17 September – 3rd international Baltic-German symposium “Non-Conformists of 1840s: Victor Hehn (1813–1890) and Friedrich Robert Faehmann (1798–1850)” held in co-operation with Johann Wolfgang Goethe University of Frankfurt am Main and University of Latvia in Riga and Tartu (organisers J. Undusk, L. Lukas).

7–9 December – 6th international conference of the Baltic literary scholars “We Have Something in Common: the Baltic Memory” held in Tallinn (main organiser A. Mihkelev).

Starting from October 2005, Literature Centre has been the venue of the monthly philosophical seminar on the topic “Subject”, attended also by faculty members, researchers and doctoral students from Tallinn University, University of Tartu and Institute of the Estonian Language.

In co-operation with Department of Finno-Ugric languages and cultures of University of Groningen and Chair of Comparative Literature of University of Tartu, the Centre started in 2005 the three year long co-operation project with the aim to researching the relationship between culture and ideology. On 14–15 April, University of Groningen arranged the first workshop of the project “Autonomy and Dependence of Arts in different socio-political situations: Estonian Case”.

In 2005 the researchers of Literature Centre delivered 35 scientific papers and expert lectures. Of those 18 were given at international scientific events.

Literature Centre published in 2005 three books. Released in the series “Collegium litterarum” were the omnibus volume of articles with international authorship “At the End of the World” (ed. R. Undusk, CL 18, Tallinn 2005. 228 pp.) dedicated to F. Tuglas’ short story “At the End of the World” and Anneli Mihkelev’s monograph “The Poetics of Allusion” (CL 19, Tallinn 2005. 177 pp.)

Besides that, there was released the omnibus volume of articles with international authorship, dedicated to Jaan Kross’ 85th birthday “Metamorphic Kross” (ed. E. Laanes, Tallinn 2005. 263 pp.), which was presented in the framework of Jaan Kross’ jubilee events on 15 February in Tallinn Writers’ House.

In 2005 the researchers of Literature Centre authored altogether 12 scientific publications in foreign languages and 29 in Estonian, whereof 27 in peer-reviewed issues. Besides, abstracts of 5 scientific papers were published.

In 2005, researcher of Literature Centre Anneli Mihkelev defended at Department of Semiotics of University of Tartu the doctoral thesis “The Poetics of Allusion”.

In 2005 6 researchers of Literature Centre delivered lectures, supervised over PhD and BA theses, reviewed and opposed them in University of Tartu, in Drama School of Estonian Academy of Music and Theatre and Tallinn University. The Centre continued co-operation with the Academic Library of Tallinn University, providing counselling at replenishment and completing the collections.

Within the framework of the national research and development programme “The Estonian Language and National Memory”, sub-programme “National Memory and Identity” the Museum has performed, since 2004 the research project “Intellectual Heritage of Friedebert Tuglas” (supervisor Ülle Kurs). The goal is to convey the heritage of E. and F. Tuglas and M. Under and A. Adson as historical cultural asset to the public, by publishing scientifically edited issues, organising art exhibitions, conferences, seminars, cultural events, and also through respective pedagogical work. One of the major goals of the project is completion of the series of Collected Works by F. Tuglas, textologically edited and supplied with scientific forewords and detailed commentaries.

Within the national research and development programme “The Collections of Humanities and Natural Sciences”, the Museum has performed, since 2004 the project “Scientific Collections of Under and Tuglas Literature Centre” (supervisor Eha Rand). The goal is organisation of collections of scientific-

cultural value, improvement of the depositing conditions and optimising the possibilities of use.

The affiliated Museum was visited by the total of 1064 people in 2005. The Museum organised 23 literature and culture lectures and excursions, and served 43 researchers on the basis of stocks.

In 2005, preparations were started for commemoration of F. Tuglas' 120th anniversary in 2006. In co-operation with Adamson-Eric Museum Literature Centre organized the exposition "Young-Estonian Art from Friedebert Tuglas' collection", accompanying the conference "Young-Estonia 100", organised by the Estonian Literary Museum. The catalogue of the exhibition under the same title (compiled by E. Rand, Tallinn 2005. 23 pp.) is the first publication of the new series of museological publications of Literature Centre "Cultural-historical Collections of Under and Tuglas Literature Centre". The Centre started organising the art exhibition "Åland Phenomenon. Young-Estonian Artists and Writers in Åland 1906–1913" in 2006 in Tallinn and in Önningsby, Åland. In connection with that, the Centre participated at organising the competition of the monument "100 years of Sojourn of Estonian Artists and Writers in Åland".

In 2005 the renovations of the Museum building in Nõmme were continued; the roof of the building was renovated.

## **FINANCIAL ACTIVITY**

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Budget of the Estonian Academy of Sciences for 2005 and  
administration of budget (thou kroon)

	Budget	Implement ation
<b>INCOME</b>		
ALLOCATIONS FROM THE STATE BUDGET	16475.00	16475.00
For basic activities of the Academy	11015.00	11015.00
For fees of Members of Academy	3960.00	3960.00
For fees of research professors	1500.00	1500.00
OTHER RECEIPTS	4110.08	4145.89
Target allocations of Ministry of Education and Research, incl	1047.58	1047.58
To renovation of Academy House	633.00	633.00
For repayment of the student loan	24.58	24.58
To international science organisations for membership fees	390.00	390.00
From sale of printed matter and commissioned works (Academy Publishers)	700.00	783.60
Receipt from sale of the Vormsi rehabilitation complex	400.00	406.04
From letting the premises and guest rooms (Kohtu 6) and receipts from other institutions	400.00	462.92
From social tax prepayment	1139.00	1139.00
From residual funds	423.50	306.75
ALLOCATIONS TO UNDER AND TUGLAS LITERATURE CENTRE	2536.70	2587.60
Through Ministry of Education and Research, incl.	2191.70	2191.70
Target funding of research	968.00	968.00
For infrastructure expenses	527.50	527.50
For fulfilment of state programme	585.30	585.30
For repayment of student loan	1.90	1.90
For investments	109.00	109.00
Target allocations	300.00	335.70
From sale of literature	45.00	60.20
<b>TOTAL INCOME</b>	<b>23121.78</b>	<b>23208.49</b>

## EXPENDITURES

### GENERAL BREAKDOWN

For activities of the Academy (through Academy Office)	8347.50	8349.30
Estonian Academy Publishers	4280.00	4402,45
Fees of Members of Academy	3960.00	3927.00
Fees of research professors	1500.00	1500.00
For repayment of student loan	24.58	24.58
Prizes, grants and medals, incl.	255.00	248.71
P. Ariste and N.Alumäe medals	40.00	40.00
B. Schmidt Prize	25.00	26.70
Grants and prize for students works	190.00	182.01
Under and Tuglas Literature Centre	2536.70	2342.10
Scientific societies, incl.	1165.00	1165.00
Estonian Naturalists' Society	430.00	430.00
Mother Tongue Society	140.00	140.00
Estonian Geographical Society	180.00	180.00
The Society for Estonian Regional Studies	115.00	115.00
Union of the Philosophy and History of Science	100.00	100.00
Estonian Learned Society	100.00	100.00
Estonian Literary Society	100.00	100.00
Membership fees to international science organisations	420.00	409.70
Capital repairs of the Academy premises	633.00	633.00
TOTAL EXPENDITURES	23121.28	23001.84

### MAIN ACTIVITY OF THE ACADEMY (THROUGH ACADEMY OFFICE)

Salary, incl.	3400.00	3428.69
To full-time staff	2944.00	2945.34
To part-timers	300.00	327.35
Fees to Professors-Emeritus	99.00	99.00
Benefit to widows of Members of Academy	57.00	57.00
Payroll tax	1139.00	1114.76
Office expenses	450.00	454.12
Running costs of buildings and premises	490.00	494,26
Purchase and maintenance of devices and inventory	983.50	1049.17
Transportation costs	210.00	211.58
Business trips	330.00	291.86
Expenses on General Assemblies, lectures, seminars	210.00	180.63
Expenses on committees and Divisions	60.00	60.00
Expenses on Foundation for International Exchange	650.00	638,35
Auditing	45.00	37.22
Repairs of Academy premises	380.00	388.66
TOTAL OFFICE	8347.50	8349.30



ESTONIAN ACADEMY PUBLISHERS		
Salaries, incl.	1927.00	2072.80
To full-time staff	1837.00	2008.10
To part-timers	90.00	64.70
Payroll tax	646.00	694.39
Administration expenses	375.00	389.26
Printing expenses, incl.	580.00	403.70
On issues of Board of Academy	150.00	94.60
Purchase of devices and inventory	52.00	31.00
Expenses related to commissioned works	700.00	811.30
TOTAL PUBLISHERS	4280.00	4402.45
UNDER AND TUGLAS LITERATURE CENTRE		
Salaries, incl.	1353.00	1188.50
To full-time staff	1253.00	1047.20
To part-timers	100.00	141.30
Payroll tax	446.00	398.10
Administration expenses	626.80	644.60
Capital repairs (Department of museology)	109.00	109.00
Student loan	1.90	1.90
TOTAL LITERATURE CENTRE	2536.70	2342.10

## **ASSOCIATED INSTITUTIONS**

Subject to “Estonian Academy of Sciences Act” adopted by Riigikogu in 1997, the research, development and cultural institutions and scientific societies, not belonging to the structure of the Academy, whose activity and goals however are in conformity with the activity and goals of the Academy can associate themselves with the Academy. The association of the institutions with the Academy is effected under bilateral agreements, which specify the goals of association, tasks and commitments of both parties.

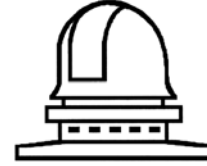
One form of co-operation between the Academy and its associated institutions is mutual exchange of information. Since 1998, the surveys of the activity of institutions associated with the Academy have been published in the Academy Year Book. Those reviews differ as to their structural composition, way of exposition and scope, and have been basically presented as received from the respective institution, modified as suggested by the editorial board.

Reviews of activity for 2005 of institutions associated with Academy have been presented according to chronology of association:

Tartu Observatory .....	107
Institute of Ecology at University of Tallinn .....	111
Academic Library at University of Tallinn .....	115
Institute of the Estonian Language .....	119
Estonian Literary Museum .....	122
Institute for International and Social Studies at University of Tallinn	126

## TARTU OBSERVATORY

Associated with the Estonian Academy of Sciences  
8.05.1998



Founded 1808

Personnel: 60, of whom 38 researchers

Address: 61602 Tõravere, the Tartu county, ESTONIA, [aai@aai.ee](mailto:aai@aai.ee)

Website: <http://www.aai.ee>

Director: Laurits Leedjärv, Tel: +372 741 0265, Fax +372 741 0205,  
[leed@aai.ee](mailto:leed@aai.ee)

Head of Information Team: Mare Ruusalepp, Tel: +372 741 0261,  
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Research of Tartu Observatory distributes between three larger areas:

Cosmology and physics of galaxies,

Physics of stars and

Research of atmosphere and surface of Earth.

According to those areas, funded in 2003–2007 are three target financed research topics, headed respectively by Member of Academy Jaan Einasto, Dr. Tõnu Kipper and Dr. Andres Kuusk. By support from Estonian Science Foundation the Observatory fulfilled 11 grant projects. Several commissioned works, for instance with Agricultural Registers and Information Board, Ministry of the Environment, and Environmental Investment Centre provided to us an opportunity to apply the knowledge gained through fundamental research in everyday life. Should we add the basic funding, the sub-programme of the state programme “Collections in the humanities and natural sciences” for setting up the digital archives of astronomical photographic plates, and the post-doctoral grant, the budget for research of 2005 crossed, for the first time the threshold of EEK 10 M.

The simplest (and evidently the most important) marker of outcome of the research work in all reports continues to be the number of published scientific articles. This figure for Tartu Observatory in 2005 amounted to 59, indicative of a regular level. Practically all of the 28 journal articles came out in prestigious internationally reviewed journals. Traditionally, the number of popular science articles (72) exceeded that of research articles. At the end 2005, our long time co-operation partner publisher Rein Veskimäe issued the fourth book in his Universe-series “Universe in light and rain”. The authors of that book, in great detail describing the Earth’s atmosphere are, by half researchers of Tõravere. Uno Veismann was also the second editor-compiler. Also released were the traditional issues of the Observatory: Calendar of the Observatory and Yearbook.

The 104 pages long Yearbook can be looked at on website [www.aai.ee](http://www.aai.ee). Below are just cursory observations about some results or a novelty.

The largest component parts of structure of the Universe are galaxy super-clusters. The observational base for their research has become, in recent years the large digital deep sky surveys, often made with the help of robotic telescopes. From the data sample of the largest survey, *Sloan Digital Sky Survey* our cosmologists detected more than 500 new superclusters. Comparison of distribution of superclusters detected by numerical simulations with observations however revealed that among the real super-clusters there can be found very massive or luminous superclusters, which are up to 10 times more numerous than in models. Hence the models need improvement as yet. The density distribution of the Universe is described statistically mainly by means of correlation function or power spectrum. However, there is an option to assume as basis the morphological properties or typical patterns. Such a novel multi-scale analysis showed, that our present hypotheses about the primordial structure of the density field of the Universe, needs not to hold, at all. The sky surveys of Sloan et al. can also be used for analysis of smaller structures. For instance, there was compiled a new catalogue containing 24 000 galaxy groups and clusters, there was modelled a galaxy group of scores of members gathered round the binary galaxy NGC 6962/6964. There were developed the self-consistent hydrodynamic models of galaxies. The analysis of radio observations of hydrogen clouds moving within our own Milky Way at high velocity showed that for the most part those clouds have two-component structure.

The physics of stars and cosmology have ever more points of contact and common interests. In order to understand the early stages of the Universe, one needs to know how the very first stars came into being and developed. Several aspects of metallicity of stars and their chemical composition, especially in connection with evolution, constituted the major part of work of stellar physicists in 2005. For instance, they obtained new and more precise parameters of hydrogen depleted carbon stars XX Cam and HD 101584. They found that the mass loss rate of hot Wolf-Rayet stars depends strongly on metallicity; they established a certain link between brightness of hot components of symbiotic binary stars with metallicity of cool giant stars etc. They analysed the observations made in Tallinn Observatory in 1967–1996 of binary star BM Cas and found that there must be, on the surface of the supergiant star of spectral class A5 belonging to the system, an intensively radiating structure hotter than the surrounding area. Scientists in Tõravere continued improvement of software package SMART meant for modelling the stellar atmospheres and calculation of spectra emitted therefrom. In 2005, it was translated to the programming language Fortran-90. Thereafter started calculation of extensive catalogue of stellar spectra (*ca* 250 models) for visual spectrum region (wavelength 360–720 nm). The Observatory continued participation in preparation of space project GAIA. The developments of statistical

processing of astronomical time-series enabled, among others to refute the claim that inside the Sun, there is a non-axisymmetric magnetic dynamo revolving as a solid.

The topic of atmospheric physics has traditionally yielded expedient practical outputs, however applications can nevertheless base on fundamental knowledge about the nature surrounding us. The UV radiation of the Sun is of interest from several aspects, ever more important is registration of radiation spectra – the constantly operating computer controlled spectrometric system was developed in 2005. Assessment of non-stationarity of time series of temperature and other meteorological quantities by mathematical methods seems to induce certain optimism regarding the fear of climate warming: the negative feedback operating in Earth's climatic system smoothes out the irregularities developed. The trends of time series of integral solar radiation in 1951–2004 showed significant change at the end 1980s, when the tendency of decline of radiation was replaced by incremental growth. Evidently, it was caused by change in optical thickness of aerosol. That result reached the journal "Science". Gradually developing is a new direction in remote sensing – the monitoring of water bodies. It was found that it is very hard to use the standard methods of determining the chlorophyll content due to high content in Estonian coastal sea of dissolved organic matter. It was also found that the temperature of Peipsi and other European large lakes could be excellently determined with remote sensing. The forest radiation transfer model FRT and the reflectance model of homogeneous canopy ACRM yielded, in international comparison with other models, a good harmony in the visible region of spectrum, a bit larger discrepancies from other models were manifested in the infrared region of spectrum. Thanks to co-operation with European Space Agency we obtained, on 10 July 2005 a picture series of excellent resolution about the testing ground of Järvelja forest. The optical models of canopy were basis of several commissioned works in the monitoring of Estonian forests and arable lands.

In 15–19 August we organised in Tartu an international scientific conference on evolution of stars in the early low metallicity epoch of the Universe. There were 63 participants from 15 countries, co-chairmen of the organising committee were Professors Henny Lamers and Norbert Langer of Utrecht University, chairman of the local organising committee was Dr. Tiit Nugis. On 11 October Tõravere hosted the second Estonian remote sensing seminar, on 11 November Tõravere was the venue of Day of Science "Estonian geophysics" held in the framework of celebrating the 140th anniversary of Tartu Meteorological Observatory. Both events had over 70 participants.

On occasion of the 80th anniversary of Member of Academy Juhan Ross (1925–2002) we introduced the Juhan Ross scholarship to the best student majoring in environmental physics or a related subject. Two candidates – doctoral students of University of Tartu Joel Kuusk and Silver Lätt – turned

out so good that the scientific council recommended issuing the first Ross scholarship to both of them. The by now traditional Ernst Julius Öpik scholarship was granted to doctoral student of University of Tartu Elmo Tempel.

Basic funding of research institutions started in 2005 enabled to upgrade the scientific apparatus, to speed up international communication and it also told on incomes of researchers. The developments in Estonian science of the recent years generally and also in Tartu Observatory infuse in us certain optimism that the scientific work, in the form of fundamental and applied research, is possible in Estonia.

## **INSTITUTE OF ECOLOGY AT TALLINN UNIVERSITY**



Associated with the Estonian Academy of Sciences  
16.06.1998

Founded 1992

Personnel: 40, of whom 25 researchers

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Scientific Secretary: Angelika Portsmouth, Tel: +372 619 9827,  
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In 2005, scientific research was carried out within the framework of 39 topics of different levels and projects, incl. 4 topics target-financed by Ministry of Education and Research, 6 Estonian Science Foundation grants, 3 international co-operation programmes and 10 co-operation agreements, and besides that research within the framework of 3 Doctoral and 2 Master's theses. Implementation in practice of research outcome was effected under 16 co-operation agreements.

The most extensive among international co-operation programmes was the participation in the project of the 5th Framework Programme of European Commission "Abrupt Climate Changes Recorded Over The European Land Mass: multi proxy records of Late-Holocene climate variability in Europe (ACCROTELM) (supervisor on part of Estonia: Edgar Karofeld) and the 6th Framework Programme of European Commission "Action for Training in Land use And Sustainability" (ATLAS) (supervisor on part of Estonia: Dr. Hannes Palang).

The main research effort of the Institute took place within the framework of the following target financed topics:

Topic "Natural and human induced trends of the lake trophicity development in the Holocene: reconstructions and projections" (supervisor: Jaan-Mati Punning). The team continued the work with data on sediment profile of the Lake Väike-Juusa. It developed litological research and started in-depth studies of particle size composition of sediments for description of sedimentation process. For the first time in Estonia, the team started analyses of the size of granule by method of laser-spectrometry. It was determined that the temporal variation of chemical and litological composition of the sediment is essentially affected by intra-lake processes and conditions of sedimentation, therefore the paleolimnological message recorded in the surface sediments is

often distorted by endogenous processes taking place in the lake. The analysis by profile method of crosscuts of sediments enabled to receive reliable information about the water level changes of the Lake Väike-Juusa. The team published the pollen diagram deriving from the Otepää upland and including the sediments of the whole Holocene, supplied with dates. When comparing the results of diatom analyses of sediment samples of the Lake Väike-Juusa with the results of chemical, litological and macro-residue analysis of sediments, it was found that changes in species composition of diatom could be linked to water level changes.

Research in the framework of the topic “Climate change impact on the structure and functioning of wetlands” (supervisor: Edgar Karofeld) has been focusing in recent years on research of coasts in co-operation with other research institutions, for finding out about significant pathways of climatic change impact on different type shore wetlands. The field research was mainly carried out on Saaremaa coasts. The team determined the rise of water level in bays as depending on wind velocity and direction, exposedness of the bay, depth etc. If alongside with the climatic warming the cyclonal activity would become ever more active, by the end of 21st C., and if alongside with this the annual average wind velocity would increase from the present summer indicator (5.5 m/s) to the winter level (7.5 m/s), this would for instance lift the average water level in Pärnu bay by 30 cm, and the drift water level during storms to 250 cm above Kronstadt reference point. Research of the impact on spits, located on gravel-shingle shores of the waves activity, angle of openness, nature of sediments and other factors showed, that the spits characterised by predominantly transversal drift of sediments have lower capacity of formation. Upon example of mires of the East and West Estonian type, the team established that in necrotic peat moss patches the growth of peat mosses and peat accumulation have stalled and in the course of time, those areas will tend to be lower due to continuing peat accumulation in adjacent areas, thus initiating succession of plant habitat and differentiation of microtopography of mire. In co-operation with colleagues from international working group and using various research methods, the team reconstructed the most significant changes witnessed in the Männikjärve mire in the past *ca* 4300 years, regarding the plant coverage and moisture balance of the mire. The team determined the character and extent of bottom erosion of bog-pools and the link of that process with the temperature of the bog-pool water.

Within the framework of the topic “Ecophysiology of carbon cycle” (supervisor: Olevi Kull) the team, researching the morphological and ecophysiological variations of availability to plants of nutrients, water and light showed, that nutrients' availability of Scotch pine (*Pinus sylvestris* L.) in two nutrient depleted growth sites, in bog and on dune, affects the distribution of biomass between different parts of the plant and their physiological activity. It was found that the diminishing species' variety due to stoppage of haymaking and



feeding cattle on pasture in the thickets of reeds and semi-natural flood plains does not bring about decrease of surface phytomass. In the meadows, the moisture conditions and cutting of the sprouts (mowing) impact significantly on the species' composition. Distribution of the biomass into surface and sub-surface parts depends mainly on species-specific morphology of the dominants, the moisture conditions do not characterise that distribution. Research of the growth strategy of peat mosses – basic generators of bog peat revealed that while adaptation of *Sphagnum fuscum* to unfavourable moisture conditions (lowering of water level) is linked to efficiency of acropetal water transport, necessary for photosynthesis, counter-reaction of *S. rubellum* is manifested by efficient binding and storage of atmospheric moisture. Modelling on GIS-basis of growth and development of mire expanse showed that the reflex of climatic signals with respect to changes in hydrological conditions of the expanse can be shaded by spatial dynamics of expanse determined by topographic peculiarities of the bog depression and by respective changes of the hydrological balance.

Within the framework of the topic “Trends of development of industrial landscapes in North-East Estonian oil shale mining area” (supervisor: Valdo Liblik) there were carried out researches of plant coverage, soil and light conditions (sample quantity 110) in forest groves planted in quarries and naturally renewed. Those researches showed, that in younger quarry parts the relatively homogenous surface plant coverage becomes more heterogenous, due to species of trees planted, because different tree species generate an environment of different soil and light conditions. The surface biomass of the pine groves planted in the quarry areas is comparable to biomass of other grove types. Carbon (C) has accumulated most impressively in 30 years in the tree front of deciduous groves (12 Gg/ha) and alder groves (9 Gg/ha); in old pine groves the same is *ca* 7 Gg/ha. Accumulation of biomass of pine needles in tree canopy is related to the capacity of needles to invest C for growing lead bundles: if the needle happens to be in the canopy in the position where C net catch is zero (due to scarcity of light or nutrients), it is not capable of extending the lead bundle and in the triggered ageing process the needle detaches from the lead tissues of the tree. In the flow of the Purtse river, a steady growth tendency of share of mine water can be observed (1972–2004), regardless of closing of several mines, among others in 1999–2001 (Sompa, Kohtla etc.). This should be taken into consideration when forecasting the development of the Purtse catchment area in altered hydrological situation.

In 2005 the personnel of the Institute published 70 scientific articles and separate publications: in international scientific issues 32 articles, in Estonian scientific issues 38 articles, plus popular science articles, abstracts etc. The researchers of the Institute delivered at international conferences 22, at national conferences 10, at in-house scientific seminars 22 presentations. A

volume of articles in the series of publications “Environment and excavation of oil shale in North East Estonia” was released.

Majority of the applied researches were directed at analysis of the situation of environment and the possibilities to improve it. The applied research has tended to be directed towards research-centred and more general environmental policy projects.

In autumn 2005, the scientists participated at republican inter-university symposium of young geographers “Truth and equity” and also at its organisation. That event, dedicated to 50th anniversary of Estonian Geographical Society, was attended by 50 students, degree students and young scientists.

The research works of students supervised by scientists of the Institute were noted at competitions of students’ works. Professor Jaan-Mati Punning was elected in September 2005 honorary member of Russian Geographical Society.

Researchers of the Institute contributed to the faculty effort in different universities. They were more active in delivering lectures and supervising undergraduate and post-graduate students in Tallinn University, University of Tartu, Tallinn University of Technology and Estonian Agricultural University. Altogether 13 researchers of the Institute supervised the Doctoral and Master’s papers. Of the Institute personnel, the Doctor’s degree in ecology was awarded to Mihkel Kangur, Jaanus Terasmaa, Reimo Rivis. M.Sc. in biology was awarded to Helen Karu and in geocology to Riina Vaht.

## **ACADEMIC LIBRARY OF TALLINN UNIVERSITY**

Associated with the Estonian Academy of Sciences

17.06.1998

Founded 1946

Personnel: 150

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As from 18 March 2005, with change of the name of University, the name of the Library changed to Academic Library of Tallinn University. The main goal of the year turned out to be conversion of the Library into a contemporary university library, to support the research, development and teaching efforts of the University. The Library continued collecting of the national printed matter, their preservation and providing library and information services.

### **LIBRARY AND INFORMATION SERVICES**

The Library continued the programme of increasing the share of active holdings on the open access and development of subject collections. Books and serials of information centre of social sciences and affiliate of educational sciences of the library and archival collection of pedagogy were transferred to Academic Library. The Library started formation of the subject hall of natural and applied sciences and the subject hall of the humanities and social sciences.

For the purpose of more effective co-operation of University and the Library and exchange of information, there was set up a system of subject librarians in the Library. Librarians in the area of humanities, social sciences, mathematics-natural sciences, educational sciences, fine arts and sports sciences have set to of the information resources, presentation of options of access to information resources and design of active collections of the respective subject areas.

The Library continued training of users of research databases, for which ample opportunities were latently available in the computer lab, opened at the end 2004. Firstly, there was launched the primary level user training, with the target group being the students of Tallinn University. By means of the renovated website of the Library the target groups were informed about the plans of training and the dates it will takes place. To register for the course, the web-based form is being offered.

With a view to efficient servicing of readers, several innovations were introduced: in the foyer, there was set up the information stand of the Library,

where readers are also registered; the workplaces of inter-library loaning and catalogue consultant were united, there was opened a service centre offering copying, scanning and other services for a charge. Starting from 1 September, use of ID-card in the Library as library card was introduced. In inter-library loaning there was introduced a new service much appreciated by users – the electronic document exchange, enabling to promptly and free-of-postage forward the ordered copies.

As of 31 December 2005, the reader database featured 35 761 readers. Out of them 18 311, i.e. 51.2% of the total was accounted for by students of Tallinn University and other universities and higher schools. In the earlier years the loaning activity of specialists exceeded that of the students, however in 2005 the number of loans made by students increased by 8.2% and constituted 32.7% of the total number of loans. The specialists' share in the total loans of the Library was 31.9%.

According to an agreement with the Estonian National Library, as from 2005 the Library has been responsible for making bibliography of periodicals and articles in collections of the area of education in its web-based database, keeping to the compiling principles of *Index Scriptorium Estoniae*. The Library replenished the bibliographic original databases Geology, Education, Nature, Finno-Ugric, Tallinn University (Tallinn Pedagogical University), and Academic Library of Tallinn University, Publications and Hungary.

#### COLLECTION DEVELOPMENT

In 2005, EEK 5.3 M was allocated for purchase of scientific active holdings. Out of the total sum for completing the active collections, 41.6% was expended on books and serials in natural sciences, 29.2% in social sciences, 27.2% in the humanities and 2% in applied sciences.

For procurement of books in foreign languages, EEK 1.5 M was expended, on periodicals in foreign languages (367 titles) *ca* EEK 2.2 M. The national printed matter consumed EEK 1.1 M, including replenishment of old and rare books book collections nearly EEK 300 thou. For the purpose of replenishment of stocks the Library participated at three auctions, where it acquired the works of several famed Baltic German authors (e.g. Bergengrugen, Thiess).

For purchase of digital information resources the outlay was *ca* EEK 0.5 M. For the first time, there were license agreements made with *Britannica Online*, *Oxford Scholarship Online*, *AIP Archival online Only* for use of information resources starting from 2006. In addition to ELNET Consortium digital research information resource joint procurements, the access to seven databases was bought. The users are offered altogether 19 543 titles of research serials. Use and administration of digital resources is made easier by the consolidated catalogue of e-journals *EBSCO A – Z*, procured for the Library through various publishers, taken to use as from 2005.

In 2005, the active-use collections of the Library were replenished by 13 446 copies of books; of which 4 860 copies were bought, 994 were obtained through exchange as donations 1 957 copies. As deposit copies, there arrived 3 566 units of active holdings and from reserve collection of the Library 2 069 units.

The electron catalogue ESTER reflects 30% of printed matter of active collection, including 18% of the Baltica holdings. New units of printed matter were currently recorded in bibliography. Newly entered into catalogues were the printed matter loaned from the main collection and those most frequently used history related holdings in the Baltica collection. In 2005, the theology related printed matter of the Baltica collection was newly entered into catalogues in full.

The collections of the Baltica Department increased twofold in 2005 as compared to the last reporting year. The amount of printed matter purchased was twice more, the amount of donations accrued nearly seven times more and over 3 thou titles were taken over to the Baltica collections from the basic stock.

In the framework of project “Historical collections of national printed matter” the Library started research into the state of national printed matter “Estonian Red Book” belonging to the Baltica collection. In practice, this amounted to bibliographical description of the printed matter, cleaning them up, making envelopes. As a result of that activity, 114 units were dispatched to restoration.

Subject to the inter-libraries, the Library continued digitalisation and indexation of the newspaper “Expatriate Estonia” (1944-1995) into the database DEA (Digitalised Estonian Newspapers).

#### RESEARCH AND DEVELOPMENT

6 workers have the scientific degree, of whom two have the doctor’s degree, two the candidate’s degree and two the master’s degree. Enrolled in doctoral study are 3 and in master study 2 workers. There are two researcher’s positions in the staff of the Library.

The topics of the research works focused on history of mentality of Tallinn in the first half of 19th C., the history of book and binding and the areas related to digital library and e-study. Researcher Kaja Tiisel published pieces of writing about history of Tallinn, Silvi Metsar was co-author of a paper considering development of digital libraries and e-university, which appeared in a special issue *Liber Quarterly*. The chief librarian Maiu Sikk delivered an inter-libraries loaning related paper at IFLA conference, as well as at the international seminar in Riga. The researchers supervised the bachelor and master papers on information science at Tallinn University. In the framework of Days of Library, there was organised a seminar considering the information literacy, with top researchers of the area Sirje Virkus and Anne Uukkivi acting as trainers.

In the development work of 2005, major attention was paid to activities related to digital library. A new website of Library was completed, the development and enhancing whereof is currently ongoing. The Library participated in working group of joint project of information portal of research libraries. The Library consolidated the needs of participating libraries for mediation of information resources, detailed the issues of functionality of portal. Proceeding from above, the Library tested and analysed the software solutions of the companies Innovative Interfaces, ExLibris and Information Handling Services. The works will go on in 2006.

The bulkiest developments of 2005 related to upgrades of software of library system *Innopac*. Transfer of acquisition and serials procedures from text-based library system to the graphic version *Millennium 2005* planned in ELNET Consortium for the beginning 2006 made it imperative to purchase 40 new computers and to provide complementary training to library staff.

The Library launched the preliminary works for setting up the digital information resources repository indispensable for supporting the faculty and research work of the University. As a prerequisite for setting up the digital repository of the Library, the options of co-operation with publishing department and educational technology centre of Tallinn University were studied, and as the next stage, archiving of masters' works of the University was planned as well as authorized access to them via website of the Library. Digital versions of abstracts of doctoral theses defended at the University have been available via website of the Library since end 2003.

The bibliographical entries of publications by researchers and staff members of Tallinn University were converted from Biblioserver database being compiled in the Library to the digital environment of ETIS (Estonian Information System of Science) being developed in Ministry of Education and Research. The Library also participated in working out system of classifiers of ETIS publications and in discussions of classifiers of research areas.

The chief specialist of e-library of the Library participated in joint procurements working group of digital research resources of ELNET Consortium. The development activities of electronic catalogue ESTER were connected to transfer of software used for library-related work processes, to an upgraded version.

Library is a member of the international organisations LIBER (Ligue des Bibliothèques Européennes de Recherche), IFLA (International Federation of Library Associations), Bibliotheca Baltica (Amalgamation of Libraries of the Baltic Sea Countries) and ELNET Consortium (Estonian Library Network).

## **INSTITUTE OF THE ESTONIAN LANGUAGE**

Associated with the Estonian Academy of Sciences  
11.05.1999



Founded 1947

Personnel: 71, of whom researchers 35, editors 11

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Institute of the Estonian Language has three departments:

- Department of standard written Estonian grammar (GRM), Head Dr. Peeter Päll
- Department of standard written Estonian vocabulary (LKS), Head Margit Langemets, MA.
- Department of Estonian dialects and cognate languages (MRD), Head Dr. Kristiina Ross.

GRM ja LKS perform the target funded research “Lexical and grammatical structure of modern Estonian” (2003–2007), leader of topic Urmas Sutrop, Dr. Phil.; MRD performs the project specifically funded topic “Geographic and diachronic transformation of Estonian” (2003–2007), leader of topic Dr. Kristiina Ross.

DEPARTMENT OF STANDARD WRITTEN ESTONIAN GRAMMAR acts in three areas.

### LANGUAGE PLANNING AND TERMINOLOGY

The group offers free of charge language consultation over telephone (631 3731), answers letters and e-mails, organises language care courses (in greater detail see <http://www.eki.ee/keeleabi>).

Language aid is provided in issues concerning the use of general Estonian:

- Orthography (upper and lower case initial letter, writing together or separately, punctuation marks, orthography of names etc.),
- Morphology (conjugation, declination and comparison of words),
- Word formation (derivation and composing),
- Meaning of words,
- Sentence building, wording etc.

Developed further has been the place name database (<http://www.eki.ee/knab/>). Updated edition of “Dictionary of the Estonian language ÕS” is being finalised (to appear in 2006). Both language planning and care draws funds from

state programmes, while the language care has been additionally supported by state budgetary subventions since 2004. In 2005, Peeter Päll defended his doctoral thesis in University of Tartu “Foreign names in Estonian text”, supervisor Professor Tiit-Rein Viitso.

#### LINKS BETWEEN GRAMMAR AND LEXICON

Under scrutiny has been the grammatical information as presented in dictionary and grammar, problems of formalising the syntactical information, and development of the rule-based morphological system: worked out was a set of rules for automatic identification of duration and stress, analysed were different dictionary types, and created were entries’ standards for main types of dictionaries (Ülle Viks). Analysed and unified was the material of the dictionary of word families (Silvi Vare).

#### LANGUAGE TECHNOLOGY

There was set up a monolingual XMLi editor for the needs of ÕS 2006, with the help of which several people can simultaneously work with the dictionary (Andres Loopmann); the web-version of ÕS 2006 was prepared (Indrek Hein, Andres Loopmann, Kati Sein, Ülle Viks), see <http://www.eki.ee/dict/QS2006.tegemisel/>

With the aim of rendering the synthetic speech more natural, different aspects of coherent speech were studied: pauses and prepausal lengthenings in coherent speech and their modelling in regression analysis, and the intricate link between intonation and syntactic and lexical features (Meelis Mihkla, Hille Pajupuu).

DEPARTMENT OF STANDARD WRITTEN ESTONIAN VOCABULARY continued, in keeping with the schedule, the editing of large base-dictionaries (those works were partly funded by the national target programme “The Estonian Language and the Popular Memory”):

- “Eesti kirjakeele seletussõnaraamat” [Dictionary of Standard Written Estonian]: Vol. VII, 1st fascicle (*varjutama–vunk*). Ed. Tiia Valdre, Mai Tiits, Leidi Veskis. Ed. in chief Margit Langemets. Institute of the Estonian Language. Tallinn: Foundation of the Estonian Language, 2005. 208 pp.
- “Eesti-vene sõnaraamat” [Estonian Russian Dictionary]: compiling and editing of manuscript of IV volume completed (Tiiu Lagle, Maimu Liiv, Nelli Melts, Jelena Kallas); employed in full was the web-based system of compilation of Estonian Russian Dictionary (Andres Loopmann).
- Employed was the web-based EEX-i system of compilation of Estonian–X-language dictionary (Andres Loopmann), compilation of entries of new words (Merike Koppel) and their editing (Mai Tiits, Tiia Valdre) was started.



In co-operation with Estonian Union of Applied Linguistics and Tallinn University, there was organised the 4th Conference of Applied Linguistics. By the start of the Conference, there appeared the “Yearbook of Estonian Union of Applied Linguistics 1 (2004)” (peer-reviewed serial issue).

DEPARTMENT OF ESTONIAN DIALECTS AND COGNATE LANGUAGES continued editing the Dictionary of the Estonian dialects, the replenishment of etymological card-file of the Estonian language and the compilation of Estonian etymological basic dictionary.

“Eesti murrete sõnaraamat” [Dictionary of the Estonian dialects]: Vol. IV, 17th fascicle. (Evi Juhkam, Mari Kendla, Piret Norvik, Jüri Viikberg). Institute of the Estonian Language. Tallinn: Foundation of the Estonian Language, 2005.

In 2005, Mari Uusküla (Bogatkin) defended a MA thesis at University of Tartu.

Starting from 1985, the Department has been party to joint projects “Atlas Linguarum Fennicarum” (Institute of the Estonian Language, Kotimaisten kielten tutkimuskeskus of Finland, Institute of Language, Literature and History of the Karjala Scientific Centre of Russian Academy of Sciences).

An important area of the Department is the research into place names and personal names (Marja Kallasmaa, Lembit Vaba). The Department participates in joint project “Onomastica Uralica” (Institute of the Estonian Language, Helsinki University, Debrecen University).

One of the research areas of the Department is impact of translations in the initial phase of standard written Estonian (K. Ross). The Department participated in joint project “Common Roots of Latvian and Estonian literary languages” (Institute of the Estonian Language and Latvian University).

In 2005 the researchers of the Institute of the Estonian Language published 12 publications viewed as separate books and 27 scientific articles in indexed and peer-reviewed issues. The staff of the Institute delivered 49 papers

Starting from 2005, operating at Department of Philosophy of University of Tartu, through agency of Foundation SA Innove, supported by the EU Structural Fund, is the Doctoral School “Linguistics and Language Technology”, with Institute of the Estonian Language and Institute of Cybernetics of Tallinn University of Technology acting as partners. There are 5 doctoral students of Institute of the Estonian Language enrolled at Doctors’ School, see <http://www.eki.ee/eki/doktorikool.html>.

Regarding the achievements and attainments of the Institute in the past year, see in greater detail <http://www.eki.ee/eki>.

## **ESTONIAN LITERARY MUSEUM**

Associated with the Estonian Academy of Sciences

11.05.1999

Founded in 1909 as Archive Library of the Estonian National Museum

Centre of Cultural History and Folkloristics in Estonia from 2001

Personnel: 97, of whom 67 researchers and assistant researchers, 15 librarians and bibliographers

Address: Vanemuise 42, 50003 Tartu, ESTONIA, kirmus@kirmus.ee

Website: <http://www.kirmus.ee>

Director: up to 31 May Krista Aru

starting from 1 June Janika Kronberg Tel: +372 737 7701,  
janika@kirmus.ee

In 2005, Director of Estonian Literary Museum Krista Aru concluded her second period in office and after two competitions, the Science Policy Council of Ministry of Education and Research elected Janika Kronberg new Director of the Museum. The said change should not be viewed as dramatic, because under management of Krista Aru, the Museum had become one of the central memory storage institutions of Estonia. Centre of Cultural History and Folkloristics in Estonia, operating under aegis of the Museum, had attained the status of centre for excellence in research. It is also a suitable frame of reference to go on, in the first place in the interests of making the stocks of the Museum available and developing modern scientific co-operation. Regarding the IT aspect, the Foundation Enterprise Estonia allocated, at the end 2005 to the project LABOR co-ordinated by Head of Centre for Excellence Mare Kõiva, a tangible monetary subvention up to 2007.

Estonian Literary Museum has, in addition to administrative department, the following structural units, of which the three first ones base on stocks:

- Archival Library and its department of bibliography, Head Merike Kii-pus;
- Estonian Cultural History Archives, Head Piret Noorhani;
- Estonian Folklore Archives, Head Ergo-Hart Västriik;
- Department of Folkloristics, Head Mare Kõiva;
- Department of Ethnomusicology, Head Triinu Ojamaa.

Besides that, closely integrated with Estonian Cultural History Archives has been the working group of cultural and literature theory, headed by Virve Sarapik, and the association "Estonian biographies", carrying on under initiative leadership of researcher of Estonian Cultural History Archives Rutt Hinrikus.

For completing and arranging the collections Estonian Literary Museum obtained support from Ministry of Education and Research – the state program-

mes “Collections in the humanities and natural sciences” and “The Estonian language and national memory”. Acquisitions of new Estonian-language and Estonian-printed books were obtained mainly as deposit copies; the Museum received partly by purchase the Estonian-language literature released abroad and *Estica* and necessary reference literature; selectively from auctions and elsewhere the older printed matter not available at the Museum. The acquisitions of Estonian Folklore Archives and Estonian Cultural History Archives were mainly by donations. Of significant donations in 2005, one should mention the Oskar Loorits’ collection, which was in possession of the Literary Society of Finland, and also the photo archives of the newspaper “Teataja” arriving from Sweden through mediation of Enn Nõu. Altogether the Archival Library was replenished in that year by 9 149 pieces of printed matter and 1 816 annual volumes of periodicals, while replenishment of Estonian Cultural History Archives was record breaking – altogether 27 738 archival holdings essential from the point of view of history of culture (manuscripts, photos, negatives, art, films and sound recordings). Considered as replenishment of Estonian Folklore Archives must be, besides the manuscripts assigned, also the notes made at field works, photos and recordings. Anu Korb’s set of CD discs produced on the basis of the latter about the songs of Siberian Estonians is solid proof to the unique nature of the collected materials. In order to make sure the archival materials are in legal use, the workers of the Museum were advised in the area of intellectual property by Anne Kalvi, lecturer of private international law of University of Tartu.

Service to readers and researchers is free of charge, in Literary Museum. In total for three archives the stocks of the Museum were used in 2005 by 2156 registered readers-researchers, besides 1 027 sightseers in the composition of 62 groups. For use in place, there were loaned out 28 629 units of archival holdings. Starting from June 2005, answers have been provided to nearly 100 requests for information either with a letter or over Internet. Together with those people coming to take a look at exhibition, the visitors of Museum numbered over 8 500.

In parallel with other activity, the preservation conditions improved substantially: finalised in 2005, as a result of successful state procurement in repositories of Museum was the new gas fire extinguishing system by AS Kidde Eesti, using argonite (in conformity with European Union’s requirements), which is harmless to man and does not damage the archival holdings.

Estonian Literary Museum is placed in administrative domain of Ministry of Education and Research. Its name, over which there were disputes also in 2005, may sound misleading. In the first place the mission of Estonian Literary Museum is to collect, preserve and research and make available to all scientists the legacy of Estonian national culture, bulwark of our identity. Exposition of stocks and organisation of exhibitions, which is not a primary immediate direction of work of Literary Museum, arises of the need to popu-

larise the stocks, to make them visible. Organisation of exhibitions and presentation of the Museum to groups is an extra load on researchers, but it helps to fulfil the mission of Museum in the widest meaning in deepening the foundations of national identity. Apart from that, among exhibitions there are also the projects reinforcing international co-operation: for instance in October, one was able to enjoy, in the hall of Literary Museum, the exhibition of Embassy of the Republic of Poland “Me, Gombrowicz”, the materials of which came from A. Mickiewicz Literary Museum in Warsaw. On 26 September there was opened, in co-operation with Estonian Institute in Paris, in the premises of Nordic collection of the Sainte-Geneviève Library, the exhibition “Noor-Eesti” prepared by Literary Museum, exposing the printed matter of Archival Library and the materials from Estonian Cultural History Archives.

One of the criteria of a museum operating as a modern research institution is presentation of antiquities by means of Internet-based projects, thus saving the old rare printed matter and manuscripts from aggressive use, at the same time making them available in every corner of the world. For that purpose Literary Museum on its own and in co-operation with several libraries and research institutions is involved in several projects of digitalising folklore, older literature and journalism (RADAR, SERVITI\*, together with University of Tartu EEVA, together with Estonian National Library DEA etc.). Available from collections of Archival Library in electronic catalogue ESTER are 43.4%. The Museum has constantly replenished the databases available to public BIBIS, ISIK (enables to find the ca 9100 pseudonyms of ca 7000 persons) and MEMORIAL COLLECTIONS.

In 2005, Estonian Literary Museum fulfilled 5 target-financed topics and 8 Estonian Science Foundation grants. The collaborators of Museum defended 4 PhD and 4 MA theses. Support to different projects was obtained from Estonian Ministry of Culture, Cultural Endowment of Estonia, Estonian National Culture Foundation, Centre of Environmental Investments and elsewhere. There was standing co-operation with research institutions of Finland, Canada, Australia, Russia, Czech Republic, Germany, Hungary, during the year the Museum was visited for research purposes by 28 foreign scientists. A keynote international event of the year was the 14th world congress of International Society of Folk Narratives (ISFNR), held in Tartu on 26–31 July “Folk Narrative Theories and Contemporary Practices”, where Estonian Literary Museum participated as co-organiser. The second international key event of scientists of the Museum was conference “Individual and Collective in Traditional Culture” organised on 4 November in co-operation between Department of Ethnomusicology and Estonian National Council of Folklore, to mark the 70th birthday of Ingrid Rüütel, with attendance by ethnomusicologists and

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\* “Suure Eesti Rahvuseepose InterTekstuaalne Illustratsioon”

folklorists from Poland, Lithuania, Hungary, Finland, Norway, Russian and Estonia.

In relations with the domestic research and education institutions, the most important event was the co-operation agreement signed on 20 December by Director of Literary Museum and Rector of University of Tartu Professor Jaak Aaviksoo.

**INSTITUTE FOR INTERNATIONAL  
AND SOCIAL STUDIES  
AT TALLINN UNIVERSITY**

Associated with the Estonian Academy of Sciences  
28.01.2003



Founded 1988

Personnel: 23, of whom researchers 17

Address: Uus-Sadama 5, 10120 Tallinn, ESTONIA, admin@iiss.ee

Website: <http://www.iiss.ee>

Director: Raivo Vetik, Tel: +372 619 9861, Fax +372 619 9860, vetik@iiss.ee

The research effort of the Institute in 2005 was successful – the personnel published a number of scientific publications, attended numerous professional conferences both in Estonia and abroad, participated at self-education programmes, carried out several state-commissioned applied research projects and were actively involved in national science organisation events. Of especial importance is enlargement of the Institute by a new department – namely, in 2005 there was set up the International Relations Department, staffed by young people having qualified abroad. The other departments too evidenced accession of new young people.

The main outcome of the work of the Institute is publications. In 2005 the researchers of the Institute released over 30 publications both at home and abroad. Meriting special mention is the articles in CC category by Niina Derman and Margarita Kazulja in the journal “*Социологические Исследования*”, Leeni Hansson’s article in journal “*European Psychologist*”, Ellu Saar’s and Marge Und’s articles in journal “*European Societies*” and Raivo Vetik’s article in journal “*European Politics & Societies*”.

In 2005 the Institute fulfilled four grants of Estonian Science Foundation and two target financed topics. Vital for the Institute was reopening of target financing to the topic of Department of Government “*Consolidation of Democracy in Multicultural Society*”, applied for jointly with the research group of Estonian Institute for the Humanities.

In 2005, the three-year project of the 5th EU Framework Programme “*Political Participation of Youth*” (Raivo Vetik) came to an end. In 2005, the Institute continued the 6th EU Framework Programme project “*Peace Processes in Community Conflicts*” (Raivo Vetik). Briskly began the 6th EU Framework Programme project “*Towards Life-long Learning Society in Europe: The Contribution of Educational System*” co-ordinated by the Institute (Ellu Saar), with involvement as co-operation partners by scientists from Ireland, England, Scotland, Belgium, Portugal, Norway, Austria, Slovenia, Czech Republic, Hungary, Bulgaria, Russia and Lithuania.

Very important from the viewpoint of the development of the Institute is joining the European research networks TIES and IMISCOE, focusing on the topic of integration of the second-generation migrants. Involved in the said networks has been the research group, staffed by members from all departments of the Institute. This gives the new exciting opportunities to carry out comparative studies and to attract doctoral students into research projects.

Many researchers of the Institute have contributed to the faculty effort of Tallinn University and other universities. More cohesive integration with the Department of Sociology and the Department of Government of Tallinn University is a strategic goal of development of the Institute.

Invariably successful was the co-operation of the Institute with several ministries and state authorities of Republic of Estonia, e.g. Ministry of Social Affairs, Ministry of Internal Affairs, Office of the Population Minister, Office of Riigikogu and State Chancellery. Serving as an example is the large-scale project funded by Integration Foundation “Monitoring of Integration of Estonian Society 2005”, which the Institute carries out jointly with Department of Sociology of Tallinn University, Economics Department of Tallinn University of Technology and Open Estonia Institute.

Another example is the project “Equal rights for genders”, commissioned by Ministry of Social Affairs, with which all departments of the Institute are concerned.

## **ASSOCIATED SOCIETIES, UNIONS**

Entitled to associate with the Academy are the scientific societies and unions not belonging to its structure, provided their activity and goals are in conformity with the activity and goals of the Academy. Association with the Academy will be formalised under a bilateral agreement, specifying the objectives of association, tasks and obligations of both Parties. In 2005, Academy signed the agreement with Estonian Physical Society.

Overviews of activity of Academy's associated societies and unions for 2005 have been presented according to the chronology of their association:

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## **ESTONIAN NATURALISTS' SOCIETY**

Associated with  
the Estonian Academy of Sciences 23.01.1998



Founded 1853

Membership: 827 active members (incl. 55 permanent), 19 honorary members

Street address: Struve 2, 51003 Tartu ESTONIA

Postal address: P.O. 43, 50001 Tartu ESTONIA

E-mail: [elus@elus.ee](mailto:elus@elus.ee)

Website: <http://www.elus.ee/>

President: Marek Sammul, GSM +372 527 6204, Tel: +372 742 8619,  
+372 734 1935

Scientific Secretary: Maris Paju Tel: +372 734 1935, Fax +372 742 7011

During its period of activity just over century and a half the concern of the Estonian Naturalists' Society (ENS) has been research of Estonian nature and publishing the results of research, what it did also in the past year.

Sections of the Society are Estonian Malacological Society, Estonian Mycological Society, Jakob von Uexküll Centre, Estonian Theriological Society, Commission of Lakes, Commission on Natural Education, Commission on History of Natural Sciences, Commission on Library, Commission on Estonian Plant Names, Commission on Observation Networks, and sections of botany, entomology, forestry, geology, anthropology, theoretical biology, palaeontology, biology, and the section of weather observers.

The work of the sections was carried out in the form of meetings, seminars, field camps and other similar events. In 2005 the majority of events took place in sections of botany, entomology, anthropology, and mycology.

During the reporting year there were 4 major events organised by ENS, 9 general meetings of ENS, 26 working meetings of sections, excursions and seminar-camps. Characteristic for the year was larger co-operation (13 events) with other organisations.

Union of Teachers of Biology and Geography, Karula Conservation Society and Union of Local Governments of Tartumaa. The goal of the project is enhancing the capabilities of non-governmental environmental organisations in the field of nature education and protection of biodiversity.

Four larger events of 2005 were as follows.

Commission of Lakes' 100th anniversary was celebrated with the small conference. The event was opened by Minister of the Environment Villu Reiljan, who handed over to the Society the letter of commendation for long and productive work in research of lakes and their habitat. The speaks delt with

zoological, botanical, physical-chemical and geological research of lakes and fish farming.

Of numerous attendance were, and impressive acclaim merited two events organised by Jakob von Uexküll Centre. Firstly, the conference commemorated to G. Vilbaste's 120th anniversary "In between natural sciences and natural tradition" together with an excursion in Vilbaste's home parish in Kuusalu and with a musical soiree in Tapurla, where folksongs collected by Vilbaste were performed. Secondly, the international conference organised in the framework of week of environmental ethics "Values and conflicts", handling the theoretical frame of reference of environmental ethics, points of contact of different branches of science with issues of environmental values and cases, which have given rise to problems of environmental ethics in Estonia.

In co-operation with National Heritage Board, Estonian Union of Landscape Architects and Tartu Town Government the ENS marked the world heritage day dedicated to protection of historical parks with the conference "Toomemägi 200". The presentations considered the history of the Toome park, planning of parks, questions of style, maintenance, dendrology and also use of the parks for providing natural education.

Traditionally, the ENS held the Baer Day and Auli Day, XV Estonian Day of Ecology, VI Gathering of Friends of Lichens, XXVIII Day of Estonian Natural Scientists in Setomaa on the topic "Nature of Setomaa", Jakob von Uexküll Centre Ecosemiotic Summer Seminar, spring and autumn mushroom camp of Estonian Mycological Society and IV gathering-day of weather enthusiasts with papers. At the gathering of weather observers, letters of commendation were handed over by the Society to 20 weather observers, who have done observations for over 20 years.

Rich in attendance were regular spring and autumn schools. In 2005, the ENS held in Kaisma XXXI spring school of theoretical biology on the topic "The Theory of Lie" and in centre of Vilsandi national park at Loona the autumn school of theriology on the topic "Habitats of mammals". Besides that, a new series of events was started – autumn school of geology, with the first topic "Science in geology".

Upon proposition of sections, the anniversaries of 4 natural scientists were commemorated – Gustav Vilbaste 120, Evald Möls 100, Valentin Soo 100, Viktor Masing 80. Members of the Society also participated at preparation of the jubilee events of A. v. Middendorff. In 2005 the Estonian Theriological Society celebrated its 25th year in action.

Members of the Society participated in work of several working groups, commissions etc. President of the Society Marek Sammul headed the natural education and awareness working-group of the Estonian Nature Protection Development Programme, Vice-President Ivar Puura headed the joint natural

education working-group of Ministry of Education and Research and Ministry of the Environment, representing the Society in Estonian Union of the History and Philosophy of Science was Linda Kongo.

Research of nature continued in the process of several projects: in Pärnumaa the Society studied the lichens and Lichenomycota, vascular plants (tracheophytes) and plant communities and compiled the lists of species; the Society participated in monitoring the plant communities of coastal meadows and in monitoring programmes of red deer, roe deer, crayfish, flying squirrel and bats, also in the rectangular counting of game; the ENS assessed the state of the populations of protected plant species in the Silma nature preserve; there was compiled the database of 4 wetlands within the framework of project "BIRD" and the database of historical German names of Estonian places (follow-up project 2006). The Society prepared the map material for taking the permanent habitats of protected species under protection and compiled the synopsis of requirements to growth conditions of vascular plants growing in forest related semi-natural communities

Experts of the Society reviewed also management plans of Pajaka nature preserve, Tudusoo forest preserve, Teringi forest preserve, Leigri forest preserve, Kolga nature preserve, Mõisametsa nature preserve, Kääpa mka ja Karula national park.

In 2005, released as issues of the Society were 9 pieces of printed matter and 1 Internet journal.

The following publications were released:

- Yearbook of Estonian Naturalists' Society, vol. 83, "Restoration Ecology".
- Volume of papers of XV Estonian Day of Ecology "Natura 2000 in Estonia".
- Volume of XXXI spring school of theoretical biology "The Theory of Lie".
- Papers of XXVIII Day of Nature Researchers "Nature of Setomaa".
- *Folia Cryptogamica Estonica*, no. 41.
- Volume of abstracts of environmental aesthetics conference "Values and conflicts in environmental aesthetics".
- Volume of I autumn school of geology "Science in geology. *Schola Geologica I*",
- Tõnu Möls' monograph "Linear statistical methods for analysis of water and habitat in Estonian sweet water reservoirs" (series "Nature researcher's handbooks" no. 2).
- Lepinfo, no. 16.
- Released in Internet journal "Friend of Lichen" no. 8 was summary of materials of VI gathering of friends of lichen.

The library of the Society numbered, by the end of 2005, 159,429 units of printed matter. The titles were exchanged with 81 institutions and organisations from 21 countries. Library has 380 registered readers; books were loaned out 4500 times, incl. 452 home loaning and 4148 uses in place.

## **ESTONIAN GEOGRAPHICAL SOCIETY**

Associated with the Estonian Academy of Sciences  
27.01.1998



Founded 1955

Membership: 417 active members, 18 honorary members, 4 foreign members

Address: Kohtu 6, 10130 Tallinn ESTONIA

E-mail: [geograafiaselts@gmail.com](mailto:geograafiaselts@gmail.com)

President: Jaan-Mati Punning, Tel: +372 619 9833, +372 525 1095,  
[mati@eco.tlu.ee](mailto:mati@eco.tlu.ee)

Scientific Secretary: Helve Kotli, Tel: +372 645 2744, +372 5591 7186

In 2005, active in the composition of Estonian Geographical Society were three sections: section of school geography, section of natural geography and section of human geography; Tartu Department and the Youth Club.

The work within the programme “European geoparks” continued, with the aim to lay down landscape reserves and geoparks; so did the work in the area of organisation of Estonian natural monuments (Hella Kink, Tiit Petersoo). The studies on the cartography related activity of A. J. von Krusenstern continued (Heino Mardiste). Research in history of geography in the reception of Antarctic continent in the 19th C. and 20th C. scientific literature is carried out by Erki Tammiksaar.

The School Geography Section was engaged, jointly with Institute of Geography of University of Tartu and Ministry of Education and Research in solution of several scientific-methodological problems related to teaching geography. It takes care, besides compilation of subject curricula also of promotion of environmental education and continuous education of teachers, preparation for state gymnasium examination in geography and analysis of results of exams (Ulvi Urgard, Lea Koppel).

Teachers attended at a seminar organised by Institute of Geography and Department of Didactic of Natural Sciences of University of Tartu “From curricula to handbooks and examinations”. Counselling the authors of study literature and assessment of study material was the topic of discussion meetings of the School Geography Section, the respective propositions have been forwarded to subject council of Ministry of Education and Research. At the Estonian School Geography conference in January 2005, under discussion were renovation of curricula, role of state examinations in school geography and international comparison researches TIMSS and PISA. With the aim to widening the perspective of teachers the School Geography Section organises study days, lectures and meetings with interesting people.

In April, the Energy Centre held an Information Day, presenting the Energy Centre as teaching environment. Delivering a lecture “Environment and man: myths and options” was Jaan-Mati Punning. In Teachers House, Jaan-Mati Punning spoke on a pedagogical topic “Environmental protection or use of environment”. Speaking on topic of state examinations “Weather and climate” was Helve Kotli. Tallinn Zoo and the “Huma” Publishers presented the book by Mati Kaal and Sandor-Martin Stern “Wondrous dream of King Leo”. The Section pays a lot of attention at practical knowledge of nature and environment. In May, it visited the exposition of medicinal plants “Forest as pharmacy” opened in Aegviidu Natural School at Centre of Maintaining the State Forest. The company Tallinn Water invited the teachers to look at their work and environmental projects and organised an excursion to the Ülemiste water treatment plant and the Paljassaare wastewater treatment plant.

In September the teachers considered, in the Pähni Nature Centre, the setting up of Natura 2000 areas in Estonia. Teachers hiked in Paganamaa and practiced open air studying under supervision of Helle Kont. The geography related knowledge is being popularised among school students also through Geographical Olympiads, which we have carried out long, and where we have deep set traditions. By now the national Olympiads have been held 26 times, in co-operation with Institute of Geography of University of Tartu and Ministry of Education and Research. The children keen on geography pass tight competition, in order to finally take part in national Olympiad, which was held, in the reporting year in Tõrva Gymnasium.

At the general meeting of the Society, Hannes Tõnisson and Tiit Vaasma delivered a lecture on the topic “Study Expedition of Youth Club of Estonian Geographical Society to Spitsbergen”, illustrated by a film made during the expedition for study purpose.

The Society organised 5 club soirées, hearing the travelogues and news in geography. The traditional scientific excursion with over 80 participants to Estonian next-door-neighbour Latvia was held to Vidzeme and Zemgale counties, guides Tiiu Liblik and Tiit Petersoo. The winter excursion of youth club headed to Lääne-Virumaa. The Society looked at the Viitna lakes, the explanations were given by Mihkel Kangur and Jaanus Terasmaa. In Porkuni, the Society visited the limestone museum and limestone quarry, in Sagadi the Forest Museum, crossed the Äntu-Nõmme nature trail (a walk in a nature reserve planned to indicate points of interest to the observer of nature), obtained an overview about the past of the Rakvere site on an ancient settlement (citadel) and Haljala and their present day. The Käsnu peninsular and the Marine Museum finalised the trip impressively. Youth Club marked with a summer trip through Scotland the 50th anniversary of the Society (Mihkel Kangur, Liisa Puusepp). The work of the section of human geography and the problems faced by it was the topic of the lecture to young geographers by active member of the section Elvi Sepp. The spring trip organised by section

of natural geography from the series “Learn to know your home town” took the geographically minded people to the Harku bog and the limestone bluff, they also looked at the man-made landscape of the Harku quarry (Vello Joonuks). In the hike to Raplamaa, they crossed the South East and South part of the Tõrasoo nature reserve, they contemplated the huge boulder, the thickest oak in the Raplamaa and blooming orchidaceous plants (Tiit Petersoo, Jüri Loide).

By an outing to Pärnu and Tahkurand, the Society commemorated the 125th anniversary of Master in Geography Peeter Päts, organiser of nature protection, founder of state parks, member of border commission of the Republic of Estonia, the younger brother of President Konstantin Päts.

Conjointly with Tallinn Nature Protection Society the geographers participated in the grounds upkeep bee in the Häädemeeste parish, in Luitemaa nature reserve and in coastal meadow.

In May, the young geographers went on a three day spring hike in the island Osmussaar. A nature protector of local population told the hikers about the nature of Osmussaar, its history and life over ages. By common effort, a long strip of beach was cleaned of trash collected there.

In co-operation with Estonian Institute of Meteorology and Hydrology, there was held in Tallinn “The second polar literature day” (co-moderators Juta Kuik and Tiiu Speek).

In November, the Estonian Geographical Society was 50. In the framework of jubilee events, the Youth Club of the Geographical Society and the organisation uniting students of geography of University of Tartu, organised on 30.09–02.10 the symposium, meant in the first place for students and young scientists “Autumn symposium of young geographers dedicated to the 50th anniversary of the Estonian Geographical Society “Truth and Equity””. In the Simisalu visiting centre, located in the home place of Tammsaare, there gathered ca. fifty young people from University of Tallinn and University of Tartu, with the aim to deliberating, in the process of a three-day symposium, over various geographical topics. They concerned both the natural geography and human geography related aspects. The summaries of the papers have been published in Volume VIII of the series of publications of Estonian Geographical Society. The participants hope that the said event provided an impetus to (re)birth of geographical discussion among the young geographers of Estonian universities. In the third day, the students went with Fred Jüssi on a tour in the Kakerdaja bog.

On 16th November, the Academy Hall at Kohtu 6 witnessed the festive meeting celebrating the jubilee of the Estonian Geographical Society. The paper “50 active years of the Estonian Geographical Society” was delivered by President of the Society Professor Jaan-Mati Punning. Letters of commen-

dation and flowers were handed over, as a token of thanks to the former scientific secretary of the Society, the founder and protector of the Society for nearly half a century Laine Merikalju, the founding members of the Society and active members. Elected honorary member of the Society was Professor in Geography of the Latvian University Adolfs Krauklis, who has for several decades helped to train young Estonian geographers.

In the Academic Library of Tallinn University, there was opened the exhibition "Estonian Geographical Society 50".

The scientific conference on occasion of the 50th anniversary of the Estonian Geographical Society was held on 17 November in the conference hall of Library of University of Tartu and in Institute of Geography of University of Tartu. The new directions of research at Institute of Geography of University of Tartu was the topic of paper by Professor Ülo Mander, the research in economical and social geography carried out in the Estonian Geographical Society was delved in Professor Emeritus Ann Marksoo. "The large world atlas" was presented and the problem range involved, when composing it, was the topic of paper by Hardo Aasmäe.

Released in print were the 34th and the 35th volumes of yearbook of the Estonian Geographical Society.

Estonian Geographical Society is member of International Geographical Union and Association of Geographical Societies of the Baltic Rim.

**THE SOCIETY OF  
ESTONIAN REGIONAL STUDIES**

Associated with the Estonian Academy of Sciences  
27.01.1998



Founded 1939  
Membership: 232 members  
Address: Kohtu 6, 10130 Tallinn ESTONIA  
E-mail: ekus@ekus.ee  
Chairman: Andrus Ristkok, Tel: +372 5664 7806  
Deputy Chairman: Kalju Laas, Tel: +372 659 2214  
Scientific Secretary: Eva Maaring, Tel: +372 644 0475

At the general meeting of the Society (18 March) there was elected the new 7-member Board (up to that time 9 members) and Chairman, in whose office was re-elected Andrus Ristkok. Board held eight meetings. Attached to the Board is the 8-strong Village Commission. The membership represents all counties and major towns. Most of the members are in Tallinn (67), Pärnu County (45), Viljandi County (28), Järva County (20), Harju County (16), Lääne-Viru County and Ida-Viru County (16). The activity of the Society embraces also the non-affiliated enthusiasts of regional studies. Many of them have tight contacts with the Society. Their participation invigorates the Estonian movement of regional studies; there is a role to play by young activists in the area, too.

The activity of the Society was oriented, in the reporting year at several topical issues: in connection with 100th anniversary of the historical developments of 1905, the respective research matter was duly focussed on; the Society emphasised the need to study traditional culture and carried on appropriate co-operation with activists on protection of landmark objects in the rural districts; the respective co-operation was also pursued together with national heritage activists and researchers of family histories. The Society continued to tackle the methodological issues, in particular the handling of source material, reciprocal co-operation of activists in regional studies in interdisciplinary topical areas (village research).

The "Reference collection 5" of the Society appeared in print. The activity of the Society in the recent years was presented by the exhibition dedicated to its 65th anniversary "The Society of Estonian Regional Studies on the threshold of the new millennium" (18.03–10.06.2005 in Academic Library of Tallinn University). There were organised several seminars: the Archives Day in Tallinn, in the State Archives (26 April), in the Open Air Museum (13 May); the one day study excursion in South Harjumaa (9 July); the Society met with



representatives of other unions promoting regional studies (Kalev Yacht Club LLC, Estonian National Heritage Society).

In co-operation with Estonian Youth Centre, the Society carried out the joint expedition of young guides and researchers of native place "Tartumaa 2005: in the footsteps of Elias Lönnrot" (26–28 August).

The members have close contacts with museums. They have organised exhibitions also on their own initiative (23). There have been many excursions presenting the native place (33). There were deposited almost 40 manuscripts on place names. Regarding the articles published, the Society has data on publication for more than 170. Those pieces of writing consider the developments in the community life of one's home place, and also the present day (including the keeping of chronicles), the natural objects and natural environment. The Society has issued smaller pieces of printed matter presenting the home place and the activity on regional studies, information leaflets and almost 50 brochures and books. Of more note among them are those presented below.

Printed matter from 2005 (all in Estonian)

- Eesti Kodu-uurimise Seltsi teabekogumik 5./Reference Collection V of the Society of Estonian Regional Studies./ Compiled by Andrus Ristkok. Tal-linn. 43 pp.
- Malle Alunurm. Kabli küla läbi aegade. /Kabli village over times./ Pärnu. 280 pp.
- Milvi Hirvlaane. Põlva Ühisgümnaasium ajast aega. /Põlva Co-educational Gymnasium in transition./ 330 pp.
- Kahe jõe vahel. Meie elu läbi aegade, nr.3. /Between two rivers. Our life over times, no. 3./ Compiled by Laine Järvemäe. Paikuse. 72 pp.
- Klaas ja Järvakandi. /Glass and Järvakandi./ Compiled by Henn Heinsoo. Järvakandi. 24 pp.
- Kullamaa kihelkond. Kultuuriloost ja loodusväärtustest. /Kullamaa parish. On history of culture and natural values./ Compiled by Lembitu Tarang. Kullamaa. 239 pp.
- Karl Käsper and Hans Salm. Taagepera sajandite tuultes. /Taagepera in the whorls of wind of the centuries./ Taagepera. 368 pp.
- Helbe Merila-Lattik. Karm ja kaunis Karula. Elust, olnust ja inimestest muinasajast tänapäevani. /Harsh and spellbinding Karula. On life, the past and the people from ancient times until today./ Tartu. 366 pp. + annex 4 pp.
- Märt Mõtuste. Ida-Virumaa koolid ja kooliõpetajad 1918-1940. Statistiline haridusloo uurimus. /Schools and schoolteachers in Ida-Virumaa 1918-1940. Statistical research of history of education./ Jõhvi. 156 pp.
- Heino Mägi. Otepää rahvakoolist Nuustaku progümnaasiumini. /From Otepää community school to Nuustaku Pro-Gymnasium./ Otepää. 96 pp.
- Vahur Mägi. Minerva rüütlid. Eesti inseneri kodus ja võõrsil. /Minerva's knights. Estonian engineer at home and abroad./ 446 pp.
- Nõmme perelood. /Nõmme's family histories./ Nõmme Museum, 2004-2005. 133 pp.

- Oisu raamat. Fakte ja mälestusi. /Oisu book. Facts and recollections./ Compiled by Mare Kibe. Paide. 300 pp.
- Põlvamaa kodulookogumik. Minevikumälestusi III. /Põlvamaa regional studies collection. Recollections of the past III./ Põlva. 152 pp.
- Põlevkivimuuseumi kodu-uurimisring 1970-2005. /Regional studies circle of oil shale museum 1970-2005./ Compiled by Arthur Ruusmaa. 48 pp.
- Pärandilaegas II. Pärnu linna ja maakonna õpilaste kodu-uurimistöde kogumik II. /Legacy box II. Collection of regional studies by school students of the Pärnu town and county II./ Compiled by Elve Tamvere. Pärnu. 180 pp.
- Pärnumaa ajalugu, vihik 9. Meenutusi. (Mihkel Lüdigi 125.) /History of Pärnumaa. Fascicle 9, Recollections./ Compiled by Mart Liira. Pärnu. 141 pp.
- Harjumaa huvitavaid taimi. /Olaf Schmeidt. Fanciful plants of Harjumaa./ Tallinn. 65 pp.
- Sergei Seeland. Velise Valla ajaloost. /Regarding the history of Velise parish./ Pärnu-Jaagupi. 522 pp.
- Alo Sirp and Ülo Sirp. Üksnurme mõis ja tema külad. /Üksnurme manor and its villages./ 131 pp.
- Henn Sokk. Järvamaa vaatamisväärsusi. /Places of sightseeing in Järvamaa./ Paide. 80 pp.
- Rait Talvoja. Lähtru vald Läänemaal. /Lähtru parish in Läänemaa./ Juuru. 558 pp.
- Tartu. Ajalugu ja kultuurilugu. /Tartu. History and history of culture./ Compiled by Heivi Pullerits. Tartu. 650 pp.
- Tori kool 130. /Tori school 130./ Compiled by Heli Mitt. 48 pp.
- Tiina Treimann and Hans Treimann. Maidla Lastekodu aastakümned 1946-2004. /Maidla Children's Home over decades 1946-2004./ Tartu. 114 pp.
- Tuntud nimesid Vändra minevikust. /Renowned named from the past of Vändra./ Compiled by Jannu Holsting. Vändra. 148 pp.
- Valga and the military. Edited by Hans Salm. Valga. 102 pp.
- Eevi Vallek. Uulust mitme kandi pealt. /About Uulu from several angles./ Uulu. 78 pp.
- Varjatud valu: mälestusi Teisest maailmasõjast.I. /The hidden pain: recollections from the Second World War I./ Compiled by Jaan Ellen. Tallinn. 150 pp.
- Õpetajate õpetajad. /Teacher trainers./ Compiled by Laine Soosalu. Haapsalu. 420 pp.
- Õpilaste kodu-uurimistöid 24. /School students' regional studies 24./ Compiled by Ene Luka. 149 pp.
- Üheksakümmend aastat hariduselu Raekülas. /Ninety years of educational life in Raeküla./ Compiled by Ella Põldsoo and Riita Tõniste. 56 pp.

## **ESTONIAN MOTHER TONGUE SOCIETY**

Associated with the Estonian Academy of Sciences  
4.02.1998

Founded 1920

Membership: 335 active members, 11 honorary members

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In 2005, the Estonian Mother Tongue Society organised 4 scientific conferences, 6 meetings with papers, 5 foreign language days, and 3 language days in Estonia.

The year 2005 was dedicated to Ferdinand Johann Wiedemann's 200th anniversary, for commemoration whereof there was called the organising committee, including representatives of Estonian Academy of Sciences, Ministry of Education and Research, Ministry of Foreign Affairs and Ministry of Culture, University of Tartu, Institute of the Estonian Language, Estonian Mother Tongue Society, the Haapsalu Wiedemann gymnasium, the Väike-Maarja parish and gymnasium. The international opening conference of Wiedemann's jubilee year was held on 1 April in co-operation with the Estonian Language and Estonian Academy of Sciences. At the Wiedemann Prize Language Day in Väike-Maarja, the papers were delivered by laureate of the National Language Prize Member of Academy Haldur Õim and candidate to the Prize Professor Tiit-Rein Viitso. Eevi Ross presented the book "Ferdinand Johann Wiedemann's Language Prize 1989–2003". Commemoration of the Wiedemann Jubilee Year reached also outside Estonia; the Society organised the St. Petersburg Foreign Language Day on the topic "Member of Academy Ferdinand Johann Wiedemann 200" in co-operation with St. Petersburg University, Ministry of Education and Research of the Republic of Estonia, the St. Petersburg Estonian Cultural Society and Republic of Estonia Chief Consulate in St. Petersburg. The Language Day was finalised by opening of F. J. Wiedemann's memorial stone in the Smolensk's cemetery. In the framework of the Wiedemann's jubilee year the Society started the project with the goal to publish the facsimile and commented translation of F. J. Wiedemann's "Grammatik der Ehstnischen Sprache" (1875) in two volumes. Facsimile was presented at the finalising symposium of Wiedemann jubilee year on 6 December at the Historical Museum of University of Tartu, the translation will be completed in 2006.

On 23 March, Estonian Mother Tongue Society was 85. The Society celebrated the anniversary by a jubilee meeting and also by an exhibition “Mother Tongue Society 85” at Academic Library of Tallinn University. On 25 October the Society celebrated, with the meeting with papers the 120th anniversary of Lauri Kettunen. Professor Lauri Kettunen was the figurehead of the Estonian Mother Tongue Society and also its first Chairman in 1920–1924. Jüri Valge composed a photo exposition “The first visits to Estonia of Lauri Kettunen (1908–1911)”.

In June, there were held two traditional conferences – the students’ conference in Tallinn and XXXVIII J. V. Veski Day on the topic “Language of the Journalism” in Tartu. The programme of Veski Day included five papers: Reet Kasik “Language of the journalism at the beginning of 21st C.”, Kathy Sarapuu “Editorials of dailies as a text”, Tiit Hennoste “How the newspapers manipulate” and Krista Leppikson “How it is and how it could be done. Language editor’s speculations”.

Outside Estonia, in co-operation with Ministry of Education and Research and local Estonian Societies there were held Language Days in Petseri, Moscow, in St. Petersburg, as aforementioned, Simferopol and München. On foreign Language Days, under consideration were Estonian language policy and dialects, planning of standard written language and vocabulary, impacts of English on Estonian standard written language, Estonian language of journalism and changes in the sentence in Estonian. On foreign Language Days were delivered altogether 28 papers.

At annual meeting of the Estonian Mother Tongue Society on 22 March, Helmi Neetar and Uno Liivaku were elected honorary members of the Society, as proposed by Board.

The topics under consideration by Language Commission were the issues related to orthography of compound place names and capital letter and letter tables, received from outside was the proposition to introduce corrections to sort names.

In 2005, the jubilee issue 50 (2004) of the yearbook of the Estonian Mother Tongue Society came out of print. The present yearbook is one of the three peer-reviewed Estonian linguistic publications of representative editorial board, reflected in international databases (beside the Language and Literature and *Linguistica Uralica*), and it makes all efforts to maintain the level of the yearbook’s meaningful content, in conformity with the respective indicators and requirements.

Board of the Estonian Mother Tongue Society decided to start, as from 2005 paying fees to authors of contributions to the linguistic journal “Oma Keel”, addressed at wider readership.

Released in print in 2005 were:

- Kuiss vanal Võromaal eleti. Selection of dialectal texts VI. Edited by Helju Kaal, Mari Must, Eevi Ross. Estonian Academy of Sciences Mother Tongue Society, Tallinn, 2005. 771 pp.
- Ferdinand Johann Wiedemann. Grammatik der Ehstnischen Sprache. Durchgesehenes Faksimile der Ausgabe von 1875. Herausgegeben von K. Pajusalu, U. Sutrop. Estnische Gesellschaft für Muttersprache, Stiftung für Estnische Sprache, Tallinn, 2005. 660 pp.
- Estonian Mother Tongue Society yearbook 2004, no. 50. Editor in Chief Mati Ereht, Editor in Fact Maria-Maren Sepper. Estonian Academy of Sciences Mother Tongue Society, Tallinn, 2005. 304 pp.
- Linguistic journal Oma Keel, no. 1, 80 pp.
- Linguistic journal Oma Keel, no. 2, 88 pp.

In 2005 the Library of the Estonian Mother Tongue Society was replenished by 102 acquisitions, obtained by exchange, donation or purchase. By the end of the year the stock of Library totalled 5 735 inventoried books.

## **ESTONIAN UNION OF THE HISTORY AND PHILOSOPHY OF SCIENCE**

Associated with the Estonian Academy of Sciences 4.02.1998

Founded 1967

Membership: 75 active members, 7 honorary members (of whom 4 outside Estonia), corporate members

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Scientific Secretary: Erki Tammiksaar, Tel: +372 742 1514

Estonian Union of the History and Philosophy of Science associated with the Estonian Academy of Sciences distributes into Tallinn and Tartu branches. It is member of Baltic Association of the History and Philosophy of Science and also International Union of the History and Philosophy of Science.

The main task facing the Board of the Union in 2005, which was also fulfilled, was to separate from the daily activity of the Union the project “Biographical Lexicon of the Estonian Science” having continued more than 10 years and, as a result, to divide the budget into two parts. In this way, it was possible to better assess the expenses necessary to complete the project of the Lexicon.

The Board of the Union gathered twice in 2005, while the general meeting was held on 25 May. Subject to the decisions of those meetings, the bulk of documents of the Union were transferred to Tartu in 2005. Preparations were also started for issue of the collection “History of Science and Nowadays” (compiler Rein Vihalemm), dedicated to research of methods of different areas of science. Upon the initiative of Tartu division of the Union, at the end of the year, there was a seminar, where Ken Kalling and Erki Tammiksaar spoke about the history of birth and perspectives of development of the Centre for Science Studies, Karl Ernst von Baer House, Estonian University of Life Sciences established on the basis of the Baer Museum of Institute of Zoology and Botany at Estonian University of Life Sciences.

An essential goal of the Board of the Union in 2005 was to reorganise the project of the Lexicon, putting it on new bases, in order to complete it in 2010. There are three levels in putting together the Lexicon: compilers (2 people), experts on speciality (26 researchers) and editorial board (6 members). The project is funded from various sources, which derive from the subprogramme “National memory and identity” of the national programme “The Estonian language and national memory” (duration 2004–2008), from Ministry of Culture and Estonian universities. Under the budget, publication of volumes III and IV of the Lexicon will consume EEK 1.6 M. “Biographical Lexicon of the Estonian Science” Vol. II was released in 2005.

## **ESTONIAN SCIENTIFIC SOCIETY IN SWEDEN**

Associated with Estonian Academy of Sciences

19.03.1999

Founded 1945

Membership: 138 active members and 6 honorary members

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South-Swedish Division: c/o I. Martinson, Blåmesvägen 40,

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Website: <http://www.estemb.se>

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Chairman of South-Swedish Division: Paavo Roos, Tel: +42 260 334

Secretary: Indrek Martinson, Tel: +46 465 7308,

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Estonian Learned Society in Sweden assembles Estonian scientists and scholars residing in Sweden and constitutes a forum where they can present papers in their native language. The Society organized its annual meeting in Stockholm, six meetings with papers, a science conference, and a ceremonial public meeting celebrating the anniversary of University of Tartu.

At the annual meeting on 7 February, Ülo Langel delivered a paper titled: "Peptides penetrating the cell". The papers presented at the other meetings covered a number of different subjects: "Beneficial substances in grapes and wine" (Mats Hansen); "Sami people and the relation of Sami language to Estonian" (Kaljo Käärrik); "Topical questions in Estonian foreign politics" (Jüri Kahn); "From possibility to constraint – on language change" (Päivi Juvonen); "[Swedish] Security Service during World War II" (Jüri Kahn).

At the science conference organized jointly with Ü-Club on 23 September, the following papers were presented: "Death through violence and injury in Estonia", by Airi Värnik; "How much should be privatised – theory vs. practice" by Rein Jüriado; "Cancer – its essence, cause, and possibilities of cure", by Maarja Mäe; "How to bend bacteria – on the importance of the figure in the world of microbes", by Nora Ausmees; "Can protests influence politics?" by Katrin Uba.

At the celebration of the 86th anniversary of University of Tartu on 4 December, Professor Jaak Kangilaski read a paper titled: "National university yesterday, today, tomorrow". In the musical part of the event, mezzosoprano Katrin Meerits sang to the piano accompaniment by Pär Fridberg.

## **ESTONIAN LITERARY SOCIETY**

Associated with the Estonian Academy of Sciences

23.01.2001

Founded in 1907

Members: 280 members, including 19 lifetime members, 4 honorary members and 22 regional representatives

Location: Vanemuise 19, 51014 Tartu ESTONIA

Tallinn branch: Estonia puiestee 8, 15044 Tallinn ESTONIA

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The year of 2005 was first and foremost a year of fruitful collaboration for the Estonian Literary Society (hereafter Society). The Society started hosting their own literature program in Klassikaraadio, also a new literary magazine was launched. This shows that the Society is a developing and changing organization that will benefit an increasing number of people in a long perspective.

The series of seminars entitled CHILDHOOD AND LITERATURE was continued in collaboration with the Estonian Radio; the seminars also served as public recordings of the literature program "Spangles". All in all, six seminars took place. Another seminar series, CRYPTOLOGY, was also continued with five seminars held during the period. Starting from Autumn 2005 the seminars have also been doubling as public recordings of the literature program "Tekstiluu" (Textual lens) on Klassikaraadio.

There were two seminars from the series BOOK ART. Regular art exhibitions took place in Krüpt, the gallery floor of the Tartu Literature House.

The joint seminar sequence of the Society and the Karl Ristikivi Society, entitled "From Diary to Cultural History", was continued with seven events on different topics related to cultural history.

A new seminar series ESTONIAN ORIGINAL TEXTS AT THE ESTONIAN THEATRE were launched with a focus on Estonian drama, covering both stage productions of new plays as well as innovative interpretations of the classics of Estonian drama. Each stage production is commented on by a theatre critic and the director or the playwright. The series involved seven seminars. Another new event was the Life Writing Group arranged together with the Association for Estonian Life Stories'. Those interested in the field met for ten sessions.



At the Tallinn branch joint criticism seminars of the Society and the cultural weekly Sirp took place that focused on recent publications of poetry and prose.

Jointly with the Finnish Institute the Society arranged a colloquium “Women’s Fiction and Life Writing” with presenters from both Estonia as well as Finland.

On February 2 the Society arranged a festive launch of the book “Tõotan ustavaks jääda...Eesti vabariigi valitsus 1940-1992” (“I Swear to Be Faithful...The Government of the Republic of Estonia 1940-1992”) at the Tartu City Museum.

On February 15 a joint colloquium of the Society and the Finnish Institute “The literature of the past year on both coasts of the Gulf of Finland” was held.

On March 4-5 the Society and the Estonian Writers’ Union celebrated the 140th anniversary of birth of the writer Eduard Vilde with the conference “Evergreen Vilde”.

On March 18 there was a public screening of video materials with cultural historical value from the archives of Enn and Helga Nõu.

At the traditional annual survey meeting presenters gave comprehensive overviews of poetry collections, prose fiction, plays and literary criticism published in 2004.

On April 6-8 SOTSIA Literature Week took place in Tallinn and Tartu. This time, the events that involved readings by Estonian, Finnish and Latvian authors and a poetry slam were carried out under the motto “Young and Angry”.

On May 5-6 Tartu hosted the Prima Vista Literature Festival, the main organizers of which were the Society and the Library of the University of Tartu. Other organizers included the Tartu Central Library, the Estonian Writers Union, and cultural representative offices of several foreign countries. The programme covered the book fair Utlib Market ’05, a sale-exhibition of specialized literature in foreign languages (linguistics, literary scholarship and philosophy), meetings with authors, panel discussions, book launches, events for children, different workshops and exhibitions and other events. The full programme is available at <http://kirjandusfestival.tartu.ee>.

On May 20 Vanemuise Culture Street Day was celebrated. The events were organized by the Society as well as the Tartu Artists’ Union, the Estonian Literary Museum, the Finnish Institute, the Tartu branch of the Estonian Writers’ Union, the Geology Museum of the University of Tartu, the KGB Cells Museum etc. The programme included different exhibitions, film screenings,

workshops, concerts, theatre and dance performances etc. The full programme is available at <http://vkt.tartu.ee>.

The 13th Spring School of the Estonian Literary Museum and the Society “Literature and Philosophy” on June 17-18 concentrate on the relationship of fiction and philosophical thought. The presentations discussed questions such as: which great 20th century thinkers have influenced the development of fiction, which philosophers and philosophical schools have influenced Estonian literature and what is the impact of 20th century philosophy on the development of culture in a broader sense.

On September 3 the new youth literary magazine Värsked Rõhk (Fresh Focus) was presented at the Tartu Literature House. The magazine publishes poetry, fiction, essays, reviews and drama texts by young authors. The editors of the magazine are members of the youth section of the Society, NoorEKS.

On September 30 new developments in literature for and by young adults were discussed at the seminar New and Interesting at Pääsküla Public Library in Tallinn.

On November 21 the film Snatcher of Old Men had its first screening at the Tartu Literature House. One of the authors of the seven-minute film based on a short story “Hi” by Mehis Heinsaar is a member of NoorEKS.

On November 28 the Domus Dorpatensis Foundation for Science and Liberal Arts hosted a joint event with the Society titled “Seeking and finding. German and Estonian Literary Landscapes”.

The Society’s publications in 2005 include:

- Vihik Quarterly, vols. 10 (108 pp) and special issue on Hungary (62 pp)
- Literary Magazine Värsked Rõhk, vols. 1 (49 pp) and 2 (87 pp).

## **ESTONIAN LEARNED SOCIETY**

Associated with Estonian Academy of Sciences  
23.01.2001



Founded 1838

Membership: 101 active members, 13 honorary members

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The Estonian Learned Society is a society for research in the humanities operating at the University of Tartu bringing together representatives of scientific subjects related to Estonia, with the aim of presenting the newest results of research in subjects related to Estonia and also to providing opportunities to speak up and get experience for the future scientists – M.A. and Ph.D. students.

In 2005, there were 17 seminars, attracting 607 participants (235 members of the Society and 372 guests) and hearing out the total of 31 papers. By topics, the papers were delivered in the following areas (in brackets number of papers): history (16), historiography (3), ethnology (2), archaeology (2), history of science (1), geography (1), politology (1), linguistics (1), Finno-Ugrian studies (1), demography (1), law (1) and social work (1). The presentations at one meeting were attended by a total of 36 people (last year 30). The largest was the attendance (114 people) at the conference “100 years from the meeting of representatives of people in Tartu”. From among the ordinary presentations of the largest attendance (54) was Jüri Kivimäe’s “Arved Taube and Hans Kruus – Estonian-German relations in the historiography of the 1930s”.

In 2005 the yearbook of the society for 2003 was published. The yearbook for 2004/2005 is being composed. Recently, vol. VI of general treatment “Estonian History” has come out of print. In progress is vol. V of the same series (will be published in early 2007) and at printer’s shop is the volume “Fr. G. von Bunge 200”.

Archaeological excavations were continued at Viljandi in the Castle Hills area where remains of the besieging constructions from 1223 were studied.

## ESTONIAN MUSICOLOGICAL SOCIETY

Associated with Estonian Academy of Sciences

21.06.2004

Founded 1992

Membership: 52 active members, 1 honorary member

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Estonian Musicological Society brings together people interested in scholarly or scientific study of music, and supports research in all of the musicological fields in Estonia.

Every year the EMS organises at least two musicological symposia: in spring in Tartu, and in autumn in Tallinn. In 2005, the EMS Tartu Day was held on 16 April at the Language Building of the University of Tartu; there were seven papers delivered. On Leichter Day, which took place on 17 October, Prof. Mart Humal (Estonian Academy of Music) delivered the scientific paper; in addition, Veljo Tormis Centre for Runic Song was established at the Department of Musicology of the Estonian Academy of Music.

The EMS acts in close co-operation with the Department of Musicology of the Estonian Academy of Music, as well as with several music societies. In co-operation with Lepo Sumera Society the EMS organised a symposium "Lepo Sumera 55" (10 May, Tallinn). The EMS also participated at the international musicological conference "Eduard Tubin 100" (16–19 June, Tallinn, Tartu, Alatskivi), organised by International Eduard Tubin Society.

Estonian Musicological Society also has a tradition to organise history-of-culture tours for its members at the beginning of every September. In 2005 the EMS visited Ida-Virumaa.

The most important event of the EMS in 2005 was the publication of a substantial handbook of musicology "Reflections on Music" (presented on 23 March), compiled by Jaan Ross, Member of Estonian Academy of Sciences: "Reflections on Music. Insights into musical science", (in Estonian) editors Jaan Ross and Kaire Maimets, Tallinn: Varrak, 2004, 519 pp. Among the 20 authors the predominant majority are members of Estonian Musicological Society.

## ESTONIAN PHYSICAL SOCIETY

Associated with Estonian Academy of Sciences  
14.06.2005



Founded 1989

Membership: 181 active members and 3 honorary members

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The year of 2005 was for the physics, in the first place the World Year of Physics – WYP 2005. To celebrate it, several events were held.

Upon initiative of Kaido Reivelt and Heli Valtna, performing in Estonian Television programme Terevision (Hi-Vision) during the year were young physicists; the large science bus Ursa Major started road show. The bus visited 99 schools, giving 120 performances of the scientific theatre to *ca.* 20 000 school students. Besides that the scientific bus staged performances at various fairs and public events.

Upon initiative of Jaak Kikas, the academic physical lectures were launched, with presentations coming from Members of Academy Jaan Einasto and Peeter Saari, Nobel Prize winner in Physics Professor Alex K. Müller, Member of Academy Jüri Engelbrecht and Dr. Henn Käambre.

8–14 November – the science week in the physical building of University of Tartu. In the framework of that week, an exhibition presenting the thermonuclear energy “FusionExpo” (21.11–2.12 also in Tallinn) was staged (“importer” being Madis Kiisk), the climatic exposition prepared in co-operation of British Council and AHHA and as the culmination, the Tähe Family Day Täpe2005 (moderated by Kaido Reivelt).

8–14 November – upon initiative of the Society, there was a science week on Estonian TV. In the framework of that week, various physics related science fiction films and series were demonstrated. Besides that the topics of World Year of Physics were also reflected in other programmes. Project team included Andi Hektor, Kaido Reivelt and Mait Müntel and from Estonian TV Aivo Spitsenok and Marje Jurtshenko.

In connection with World Year of Physics, the weekly scientific programme of the Estonian Radio “Laboratory” devoted to physics a 15-minute section. During autumn 2005, there were 15 physicists speaking in the programme. On behalf of the Society, involved in those activities were Andi Hektor and Kadri Kaldma, on the part of Estonian Radio Priit Ennet and Mart Ummelas.

Among traditional events, moderated by the Society on 22 and 23 March in Tartu were the Estonian XXXV Physics Days and XXVII Teachers of Physics Days. There were delivered 23 verbal and 16 poster papers (see [www.fyysika.ee/efs](http://www.fyysika.ee/efs)). On the Physics Days, the annual prize of the Society was issued to Jaan Aarik for development of atomic layer deposition method and for the research of thin metal oxide films obtained thereby. Meriting the letter of commendation of the Society were Jaak Kikas, Henn Voolaid and Koit Timpmann for creating handbooks on physics and for skilfully arousing interest in school students towards physics at performances of the scientific theatre of AHHA-Centre. For the first time, there was granted the Society's secondary school student prize, which was merited by the students of Rakvere Modern School Jaan Suve, Madis Liiva, Rain-Eric Selli, Rivo Uiibo and Ülar Nurmits for the work "Isaac Newton's laws through humorous prism", completed under supervision of the teacher Kadri-Ly Trahv. The prize for the best student poster paper of the Physics Days was granted to Lauri Aarik.

On 22 March, in the framework of the Physics Days, there was held the general meeting of the Society, approving the activities and economics report of the Board of the Society, approved the text of association agreement of the Society and Academy of Sciences, and discussed the organisation of the World Year of Physics in 2005. Released was the Society yearbook 2004 (editors Anna Aret and Piret Kuusk).

In 2005, the Board elected Dr. Henn Käämbre, in addition to Members of Academy Harald Keres and Jaan Einasto, the third honorary member of the Society.

At the 51st Physics Olympiad of Estonian school youth the Society granted the special prize (annual subscription to the journal "Scientific American") to student of the Pärnu Koidula Gymnasium Meelis Lootus.

Upon initiative of department of young physicists, in the reporting year there were organised also two schools of the young physicists (see <http://www.fyysika.ee/kool/>). Moderated by Andi Hektor, Ahto Kuus and Mait Müntel, there was held on 17–19 June at Jäneda the 3rd Summer School of young physicists of the Society. It was attended by 49 students and physicists. On 28–30 October, there was held in Kääriku Sports and Holiday Centre the 7th Autumn School of young physicists of the Society, organised by Andi Hektor, Ahto Kuusk, Mait Müntel, Kaido Reivelt and Margus Saal. The event was attended by 59 students of physics and 11 researchers from Estonian universities and research institutions.

On 27–29 June, there was held in Nõo, upon initiative of Jaak Jõgi the 2nd Teachers of Physics Summer School of the Society. The School had 19 participants, listening to lectures on today's physics and teaching physics. They familiarised themselves in detail with Institute of Physics of the University of

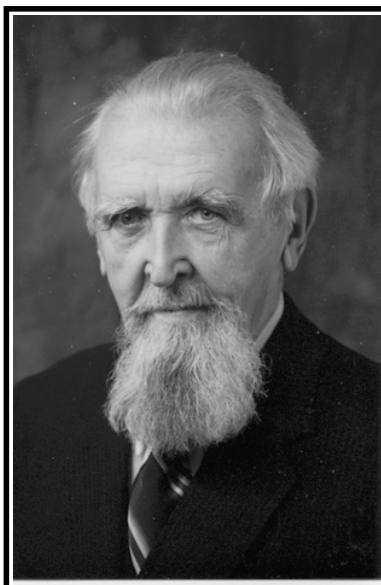
Tartu. In lecture-seminars, they discussed the problems related to national curriculum.

The department of school physics of the Society has actively co-operated with the State Examination and Qualification Centre, both in the Professional Commission and the Subject Council. The Society has taken part in development of curricula, as possible.

The Society belongs to the European Physical Society (EPS), bringing together 38 national physical societies. Arvo Kikas belongs to the EPS council, as Chairman of the Estonian Physical Society. Kaido Reivelt participated at conference of EPS dedicated to the World Year of Physics “European Meeting for the World Year of Physics”. The Society participated at the Euro-project contemplated to fund the events of the World Year of Physics and coordinated by EPS. That grant exceeded significantly the regular budget of the Society and covered a sizeable part of organisation expenses of the Year of Physics. On the occasion of the Year of Physics, the monetary subventions extended to the Society by Estonian institutions, too were larger.

## IN MEMORIAM

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Member of Academy *Viktor Maamägi*  
12.10.1917–31.05.2005

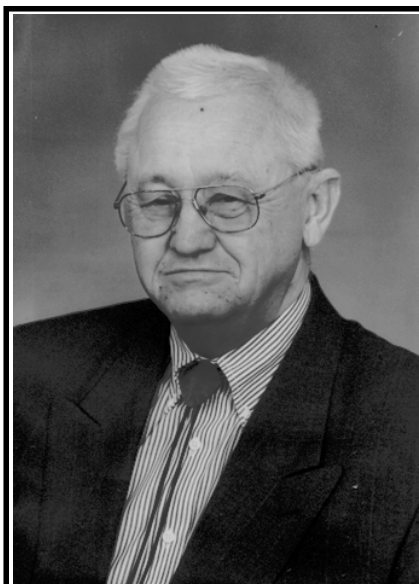
On 31 May 2005, the historian Viktor Maamägi passed away at the age of 88.

Viktor Maamägi was born on 12 October 1917 in the Government of Tauria, in Berdjansk, to the family of Estonian peasants expatriated to Russia. His father was declared village usurer, arrested in 1937 and shot. Having graduated from the secondary school *cum laude*, Viktor Maamägi enrolled in Department of History of Leningrad University where he studied 1936–1941. His graduation from the University was followed by war and active service in the Soviet Army. After the war Viktor Maamägi settled in Estonia.

Starting from 1948 Viktor Maamägi worked in the Institute of History of the Estonian Academy of Sciences, in the years 1950–1967 as Director of the Institute. In 1961 Viktor Maamägi was elected Member of the Estonian Academy of Sciences. In 1968–1973 he was Scientific Secretary General of the Academy and in 1973–1987 Vice-President of the Academy.

Viktor Maamägi was awarded the Doctor's degree in 1978 for his work casting light on history of the Estonian minority in the USSR – “Estonian settlers in the Soviet Union 1917–1940”. This topic was the research area close to his heart, being as he was the descendant of settlers. He collected that material for many years.





Foreign Member of Academy *Ivar Ugi*  
05.09.1930–29.09.2006

On 29 September, at the age of 76, Foreign Member of the Estonian Academy of Sciences, researcher in chemistry of international renown, Ivar Ugi, who had made an impressive contribution to development of chemistry in Estonia, departed.

Ivar Ugi was born on 5 September 1930 in Kuressaare. In 1941 he left for Germany. In 1951 he graduated from Tübingen University, majoring in chemistry. In 1954 he defended his doctoral thesis at Munich University of Technology. In 1962–1968 Ivar Ugi worked in Leverkusen in the central laboratory of the world famous Bayer chemical concern, making it to the position of Director in 1966.

As Professor in Chemistry, Ivar Ugi started in University of Cologne in 1963, continuing in 1968–1971 in the USA in California University. From 1971 on, he did science and worked on faculty as Professor of Munich University of Technology and Director of Institute of Organic Chemistry, since 2000 as Professor Emeritus. Professor Ivar Ugi is rightfully viewed as founder of modern chemistry of isonitriles. He belongs among the few scientists in chemistry, who have a reaction to his own name. Professor Ugi discovered the so-called “four component condensation reaction”, which was dubbed after his name in chemistry textbooks as 4CC or Ugi-reaction.

In 1987 Ivar Ugi was elected Foreign Member of Swedish Royal Academy of Sciences, in 1991 Foreign Member of Estonian Academy of Sciences. In 2002 he was awarded Order of the White Star 4th Class.

## REMEMBRANCE

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To the 120th anniversary of Member of Academy *Karl Schlossmann*

Karl Schlossmann was born on 19 February 1885 in Tartumaa, Kursi parish, Puurmani commune as son of a farmer. He started his education in Kursi parish school, continued to study at Tartu town school and then until 1905 in Tartu Modern School. After a short-time period of studies at Department of Civil Engineering of Riga Polytechnic he studied at University of Tartu, Medical Department, graduating from it in 1911 *cum laude*.

In 1911–1914 the young physician worked at Paide holding the office of the county surgeon. Then he was called to arms in WWI, where he served in Russian Army as senior surgeon and head of bacteriological laboratory. In 1918 he returned to University of Tartu and evacuated together with the University to Voronež. There he also defended his doctoral thesis “*Аутосеротерапия сифилиса*” (Autoserotherapy of syphilis) (on 2 August 1920). Council of University of Tartu elected Doctor of Medicine Schlossmann Docent in Bacteriology at Department of Hygiene. In 1924 he became Professor at the same Department. The bacteriological study, established upon his initiative evolved later into the Institute of Bacteriology, whose director Professor Schlossmann was until 1944.

In 1934–1937 Karl Schlossmann was Dean of Medical Department of University of Tartu, besides that he worked in Tartu as Head of Estonian Pasteur Station (unit concerned with prophylactic of rabies), he was scientific adviser of National Serum Institute, Chairman of Tartu Committee of Estonian Red Cross, Member of Board of the Foundation for Fight against TB and Consul-

tant of both National Health Authority and Defence Army Health Authority. With the aim to widen his knowledge and get experience he sojourned repeatedly in leading teaching and research centres of Europe and he spoke at representative international scientific forums. Being a renowned scientist, he was nominated *Officier de l'Instruction Publique* of France, elected corresponding member of *Société de Biologie* of Latvia and *Lääkäriseura Duodecim* of Finland.

As scientist, he researched Estonian curative mud, the spread and prevention of contagious diseases in Estonia and developed microbiological, in particular serological diagnostics. As member of faculty, Karl Schlossmann was supervisor of more than 30 theses. Before 1944 he published over 60 scientific pieces of writing in Estonian, German, English, French and Russian. Karl Schlossmann was also author of first original microbiological textbooks in Estonian. He published many pieces in the magazine "Eesti Arst" and in Proceedings of University of Tartu, as well as in various foreign medical journals.

When preliminary works were started in 1930s to found Estonian Academy of Sciences, Karl Schlossmann took actively part in all developments and became one of the top leaders of science in this recently established republic. By decision of State Protector Konstantin Päts he was nominated Member of Academy in 1938 and also the first President of the Academy. He could not hold that office long, because the Soviet occupation liquidated the Academy in 1940. Regardless of the short time, in those two initial years he managed to put in place the Academy and to formulate the fundamental ideas of the organisation, its goals of activity and principles, which still apply in the general academic form side by side with requirements to academies, specific to the contemporary society. In 1940, before the imminent showdown, the first yearbook of the Academy was released, serving as the basis for restoration of that tradition in the second half 1990s, part of which is also this book.

In 1944, Karl Schlossmann emigrated and settled in Sweden, where he continued research work. In his Stockholm period he discovered, in co-operation with colleagues the rheumatoid factor and released over 20 research publications.

The first President of Estonian Academy of Sciences, founder of Estonian microbiology Karl Schlossmann passed away at the age of 85 in Stockholm on 17 September 1969.

In commemoration of Karl Schlossmann, from 1–26 February 2005 there was an exhibition "Medical scientist and social figure Dr Karl Schlossmann" opened in Estonian Health Museum. Presented at the exhibition was the life and research of Member of Academy Schlossmann, a person of multiple and humane interests, who was greatly interested in art, besides his academic activity, and who possessed a notable art collection. On display at the exhibition was a handpicked selection of Karl Schlossmann's books, articles and photos.

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UNION ACADEMIQUE INTERNATIONALE  
79th annual meeting, Ankara, 23-28 may 2005

Presentation of Mr. *Peeter Tulviste*  
Member of the Estonian Academy of Sciences

(RE)INTRODUCING THE SOCIAL SCIENCES IN THE UAI:  
SOME SUGGESTIONS

Our Union was initially intended to cover not only humanities but social sciences as well. While it would be interesting to find out why and how we lost the social sciences, it is perhaps more important that some of us have expressed the opinion that for several reasons, we should think of expanding our activities to the field of social sciences again. If this is going to happen, we perhaps should think of better procedures than simply adding projects in social sciences to those in humanities. Rather, it would be seductive to apply the expertise existing in the Union for tackling some important social problems of today's world. Please allow me to offer two examples to your attention.

First. While we loose languages and whole cultures not just every decade but every year, on one hand, and highly estimate multiplicity of cultures, on the other, we have to think of how to preserve these disappearing cultures for the future. When we cannot keep them alive, we in most cases can fix them, and preserve them in a recorded form. To do that, we have to decide which among the existing texts of these cultures will be absolutely necessary to present the future investigators an adequate and sufficient idea of these cultures. This is exactly what most of us here are busy with, in relation to cultures which existed thousands or hundreds of years ago, and are now known mostly or only thanks to the surviving texts studied by us. Imagine yourself in your favorite culture of the past, able to record the texts you especially miss in your today's work. Perhaps we can help our colleagues from the far future. There hardly is another international community as competent in these matters as the UAI – and as authoritative to address an appeal to the world academic community.

Second. Each of us knows from his national culture and nation state that there are identity texts which every member of a culture and every citizen of a state has to know to be able to proceed as a member of the culture or as a citizen. One wonders what texts are necessary and suitable to give birth to supranational identities such as European, or world citizen identity. The people who have gathered here know this about the texts and societies of the past. Can we conclude anything from this experience for the future?

We are in Turkey, a country that wants to become a part of the EU. One of the many possible ways to approach the issue of to what extent Turkey is an European culture is an analysis of the representative text corpus of the Turkish culture from the point of view of how much these texts correspond to the “European average”, what kind of values they introduce, etc.

May I ask you to reflect upon these proposals, and come back to the issue of reincluding the social sciences in the UAI.

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INTERNATIONAL SCIENCE ORGANISATIONS  
(whose membership fees were covered in 2005 by Estonian Academy of  
Sciences, at the expense of specific allocation  
of Ministry of Education and Research)

Estonian contact organisation	International organisation
Estonian Physical Society (Chairman: Arvo Kikas, Arvo.Kikas@ut.ee)	European Physical Society, EPS
Estonian Geophysical Committee (Chairman: Rein Rõõm, Rein.Room@ut.ee)	International Union of Geodesy and Geophysics, IUGG
Estonian National Committee for IGU (Chairman: Jaan-Mati Punning, kotliegs@hotmail.ee)	International Geographical Union, IGU
Estonian National Committee for Geology (Chairman: Dimitri Kaljo, kaljo@gi.ee)	International Union of Geological Sciences, IUGS
Estonian Association of Engineers /Estonian Systems Engineering Society (contact: Leo Mõtus, Leo.Motus@dcc.ttu.ee)	International Federation of Automatic Control, IFAC
Estonian Chemical Society (President: Margus Lopp, lopp@chemnet.ee)	International Union of Pure and Applied Chemistry, IUPAC
Estonian National Committee for Mathematics (Chairman: Mati Abel, Mati.Abel@ut.ee)	International Mathematical Union, IMU
Estonian National Committee on Astronomy (Chairman: Laurits Leedjärv, leed@aai.ee)	International Astronomical Union, IAU
Estonian National Committee for Mechanics (Chairman: Jüri Engel- brecht, je@ioc.ee)	International Union of Theoretical and Applied Mechanics; IUTAM



Estonian National Committee of IAG (Chairman: Volli Kalm, volli.kalm@ut.ee)

International Association of Geomorphologists, IAG

Estonian National Committee for IUPAP (contact: Endel Lippmaa, elippmaa@nicpb.ee)

International Union of Pure and Applied Physics, IUPAP

Baltic Association of History and Philosophy of Science, Division of Logic, Methodology and Philosophy at Estonian Union of the History and Philosophy of Science (Chairman: Rein Vihalemm, Rein.Vihalemm@ut.ee)

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COOPERATION AGREEMENTS OF ESTONIAN ACADEMY OF  
SCIENCES WITH PARTNER ORGANISATIONS  
(in brackets, the date of signing the currently valid agreement)

1. Austrian Academy of Sciences (30.01.2003)
2. British Academy (03.07.2002)
3. Berlin-Brandenburg Academy of Sciences and Humanities (16.05.2002)
4. Bulgarian Academy of Sciences (02.04.1996)
5. Royal Flemish Academy of Belgium for Science and Arts (26.03.2004)
6. Chinese Academy of Sciences (26.05.2000)
7. Spanish Council for Scientific Research (19.06.2001)
8. Israel Academy of Sciences and Humanities (19.07.1995)
9. Italian National Research Council (23.04.2004)
10. Lithuanian Academy of Sciences (12.11.1991)
11. Royal Society of London (30.10.1991)
12. Latvian Academy of Sciences (12.11.1991)
13. Macedonian Academy of Sciences and Arts (16.12.1996)
14. Montenegrin Academy of Sciences and Arts (17.10.2005)
15. Norwegian Academy of Science and Letters (20.03.1992)
16. Polish Academy of Sciences (17.06.1996)
17. French Academy of Sciences (22.03.1994)
18. Royal Swedish Academy of Letters, History and Antiquities (18.01.1995)
19. Royal Swedish Academy of Sciences (17.11.2005)
20. Slovak Academy of Sciences (28.11.1993)
21. Slovenian Academy of Sciences and Arts (28.04.1997)
22. Academy of Finland (03.02.2003)
23. Finnish Academy of Science and Letters (10.03.1992)
24. Swiss Academy of Sciences (18.09.1989)
25. Academy of Sciences of the Czech Republic (10.04.1996)
26. National Academy of Sciences of Ukraine (02.10.2000)
27. Hungarian Academy of Sciences (20.06.1995)
28. National Academy of Science of Belarus (18.02.2002)
29. Russian Academy of Sciences (17.02.1993)

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