

*Facta non solum verba*

ESTONIAN  
ACADEMY OF SCIENCES  
YEAR BOOK

ANNALES  
ACADEMIAE SCIENTIARUM  
ESTONICAE

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## FOREWORD

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Many problems and problematic issues notwithstanding, the year of 2007 was successful to Estonian research, as well as to the Academy of Sciences. The consistent positive change of the Academy has been noticed in the scientific community – there were 16 candidates proposed to three vacant seats of Member of Academy. The steadily improving capacity for analysis of the Estonian Academy of Sciences yielded the first tangible international outcome. The economic growth of Estonian economy achieved the maximum of the current period and started declining.

The experience of other countries gives grounds to hope that in the conditions of decreasing economic growth the rational arguments and decisions of longer temporal perspective will acquire larger importance than heretofore. The first weakly positive sign was the approval of the “Knowledge based Estonia II” in Riigikogu, although regarding the numerical indicators, the draft law was modified rather significantly to the more moderate side. The stagnancy of state budget allocations assigned to the Academy, continuing almost four years changed to a modest growth, wherefore the average salary level of personnel of the Academy Office attained 75% of the average salary in this country. The second wave of the contest of Centres of Excellence will eventually be launched, although the requirements to execution of applications have been squeezed into the form little suitable to research, partly prescribed by instructions of use of structural funds and partly accounted for by the continually developing technical basis of execution of applications.

The report of the European Academies’ Science Advisory Board (EASAC) on use of oil shale in Europe, started in 2006 was presented by Mihkel Veiderma at the open session of Committee on Industry, Research and Energy of the European Parliament. The facts and conclusions presented in the report were not to the liking of several influential political figures and they insisted on changing the contents of the report. After an inquiry, initiated by British Members of the European Parliament and an all-round ethics-related discussion of MEPs, the report was nevertheless approved in its original unaltered form. Hence the EASAC and the academies of sciences of the EU states belonging to it obtained a warning lesson of how the politicians may sometimes view the facts and scientific conclusions and how to react to such attitudes. The Academy published the first book from the series of policy analysis of the Academy of Sciences – “The State of Merchants”.

In accord with the Development Plan of the Academy adopted in 2006, members of the Academy have quite consentaneously determined to set off a more intense interaction with the society – in order to support (and to boost, if possible) the movement of Estonia towards a knowledge-based society.

Several undertakings were started in 2007 – incl. formation of the Marine Commission at the Academy, a membership rejuvenation scheme for the Academy (which, however, would be presented to the Riigikogu no earlier than in 2008), steadily growing attention of the Academy to the unsatisfactory material situation of the Societies associated with the Academy, caused by a prolonged discrepancy between the growth rate of the allocations to the Academy from the state budget and the inflation prevalent in the country – will be continued in the coming years. We have multiplied our efforts in communicating with talking and writing media, striving to minimise the impact of pseudo-scientific approach in Estonia.

In 2008 the Estonian Academy of Sciences will celebrate its 70th anniversary.

*Leo Mõtus*

## CHRONICLE

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January 4 – President Richard Villems signed a co-operation agreement with the Academy of Finland. New principles of reciprocal exchange of scientists were agreed upon.

January 14–17 – President Richard Villems sojourned in Sofia as a guest of the Bulgarian Academy of Sciences, he visited the institutes of the Bulgarian Academy of Sciences and delivered a lecture “Archaeogenetics: genomic era reconstruction of the peopling of the world by anatomically modern humans”. On 16th January Presidents of the Academies signed the renovated programme of scientific co-operation.

January 16–18 – Vice-President Jüri Engelbrecht visited Paris as a guest of the French Academy of Sciences, he met with Vice-President of the French Academy of Sciences Jean Salençon and Foreign Secretary André Capron. Under consideration were issues of international co-operation, including participation of academies in international science organisations.

January 19 – Vice-President Jüri Engelbrecht participated at a Complexity-NET meeting in the Hague. Complexity-NET is an ERA-NET project of the EU 6th Framework Programme, where the Academy represents the Ministry of Education and Research.

January 23 – Meeting of the Board approved the report of Ülo Niinemets for his first working year as Research Professor. The Board decided to award the Karl Ernst von Baer memorial medal to Member of Academy Loit Reintam. The Board approved the activities plan of the Academy for 2007, the structure and composition of the Editorial Board of the journal “Estonian Journal of Earth Sciences” and compositions of the Editorial Boards of the journals “Proceedings of the Estonian Academy of Sciences – Physics. Mathematics” and “Proceedings of the Estonian Academy of Sciences – Biology. Ecology”. The Board decided to announce in 2007 three Member of Academy vacancies: in the Division of Informatics and Engineering (1), the Division of Biology, Geology and Chemistry (1) and the Division of the Humanities and Social Sciences (1).

January 29 – Assistant Secretary General Galina Varlamova attended the Latvian Academy of Sciences Board session in Riga. Under discussion was organisation of the next Baltic Conference on Intellectual Co-operation.

February 8–9 – Vice-President Jüri Engelbrecht participated at a Working Group meeting of the European Commission’s European Research Advisory Board (EURAB) in Brussels.

February 9 – Assistant Secretary General for International Relations Anne Põitel participated, as an expert nominated by Ministry of Education and Research, at opening meeting of the programme committee “People” of the EU 7th Framework Programme. Under discussion were conformity of salary levels of Marie Curie actions with the national level, implementation of COFUND (a new instrument to enhance mobility) and the contemplated scheme of staff exchange with the third countries (IRSES).

February 13 – Vice-President Jüri Engelbrecht sojourned in Brussels at the meeting of the Working Group of the European Research Advisory Board (EURAB).

February 14 – Professor Jaanus Harro delivered a public academic lecture “Is It Feasible to Forecast Behavior?”

February 21 – Estonian Academy of Sciences hosted a seminar “R&D Activities and Competitiveness of the Economy” (see p. 33).

February 27–28 – Vice-President Jüri Engelbrecht participated at opening conference of the European Research Council (ERC).

March 6–9 – Vice-President Jüri Engelbrecht sojourned in Brussels at the meeting of the Working Group of the European Research Advisory Board (EURAB), at the Descartes’ Prize ceremony and participated at the EU-USA roundtable on research.

March 8 – the Academy was visited by Head of Department of Foreign Relations of the National Academy of Sciences of Ukraine Serhiy Myakushko. The guest was met by Secretary General Leo Mõtus. The meeting was also attended by Trade Attache of Embassy of Ukraine Yevhen Kyrylenko.

March 13 – Session of the Board meeting discharged Member of Academy Mihkel Veiderma from the duties of Chairman of Energy Council and appointed Member of Academy Endel Lippmaa new Chairman. Mihkel Veiderma’s long and outstanding work as Chairman of Energy Council was decided to be distinguished with Letter of Appreciation of the Academy. Thereafter the Board decided to consent to proposals of amendment of the Academy Act, amounting to establishment of the Estonian Academy of Sciences Fund, change in principles for creation of vacancies of Academy Members (age qualification), leaving out the Genome Project clause, and to submit the amendment proposals to General Assembly. The Board also deemed it expedient for the Academy to join the Marine Board of the European Science Foundation and authorised Professor Tarmo Soomere of Tallinn University of Technology to represent the Academy for that purpose. The Board also decided to initiate renewal of the Estonian Marine Board composition. The Board decided to award Medal of the Academy to Members of Academy Arvo Krikmann, Haldur Õim, Ilmar Koppel, Agu Laisk and Foreign Member of Academy Endel Tulving. It was decided to announce three Member of

Academy vacancies: in natural sciences and medicine, the humanities and social sciences, engineering and informatics, and to announce public competition to fulfil the aforesaid vacancies. It was decided to launch a phylogenetics-systematics network in Estonia and to set up a commission for organisation and management of its work.

March 15–16 – Member of Academy Jüri Engelbrecht participated at a symposium organised by the European Science Foundation “Promoting Excellence in Science”.

March 18–22 – Programme Manager of International Relations Unit Lehti Veeväli participated at the 3rd annual conference of the European Network of Mobility Centres ERA-MORE in Sitges (Spain).

March 20 – President Richard Villems was elected Foreign Member of the Lithuanian Academy of Sciences.

March 30 – Vice-President Jüri Engelbrecht and Assistant Secretary General for International Relations Anne Pöitel participated at Complexity-NET meeting in Copenhagen. Complexity-NET is an ERA-NET project of the EU 6th Framework Programme. In this project the Academy is representing the Ministry of Education and Research.

April 2 – Academy was visited by Director of the Russian Foundation of the Humanities Andrey Yurasov, who had a meeting with Vice-President Jüri Engelbrecht. The guest gave an overview about the mission and activity of the Foundation, heard out the information about the R&D funding in Estonia and about the Academy. Parties discussed the co-operation options.

April 3 – Session of the Board decided to continue in 2007 granting the scholarships of the Academy for completion of monographic scientific works and popular science books and for getting them ready for print, and to approve the respective guidelines. The Board also decided to announce the contest of students' research papers for 2007 and to set up the Evaluation Panel for appointing the prizes. It was decided to announce a public competition for filling vacancies for three Members of Academy. The Board approved the agenda of the Annual Meeting of 25 April. Having heard out the review of Jüri Engelbrecht, Chairman of the Publishing Strategy Commission about the work of the Commission, the Board decided to change for 2008 the title of the series of Proceedings of the Estonian Academy of Sciences: Engineering for “Estonian Journal of Engineering”, the title of the series of Proceedings of the Estonian Academy of Sciences: Biology and Ecology for “Estonian Journal of Ecology” and to combine two series (Physics. Mathematics and Chemistry) of the Proceedings of the Estonian Academy of Sciences: into one multidisciplinary journal “Eesti Teaduste Akadeemia Toimetised – Proceedings of the Estonian Academy of Sciences”.

April 5 – Vice President Jüri Engelbrecht attended in Frankfurt a meeting of the European Science Foundation *ad hoc* committee for election of a new CEO.

April 10 – Vice-President Jüri Engelbrecht attended an international seminar “European Institutions in the European Research Area” in Brussels.

April 12 – President Richard Villems attended in Tallinn a meeting with Education Commissioner of the European Commission Jan Figel, called by the Ministry of Education and Research.

April 12 – Member of Academy Mihkel Veiderma participated in Brussels at an extended meeting of the Commission of Industry, Scientific Research and Energy of the European Parliament, where he presented a summary of the EASAC working group report “A Study on the EU Oil Shale Industry Viewed in the Light of the Estonian Experience”.

April 13 – Estonian Academy of Sciences held a seminar “Science to Society. Health of the Estonian Population” (see p. 34).

April 18 – Estonian Academy of Sciences held a seminar “Medicines Research and Medicines Development” (see p. 34).

April 18–21 – Member of Academy Jüri Engelbrecht participated in Budapest at a meeting of the European Science Foundation Governing Council and negotiations of EuroHORC and the Hungarian Science Foundation.

April 25 – Conferring ceremony of the Karl Ernst von Baer memorial medal, medals of the Academy and the Letter of Appreciation was held at the annual meeting of the General Assembly, wherein Ants Viires’ scholarly paper “Retrospections on my Path in Science” was heard out. President Richard Villems presented the financial report 2006 and the budget for 2007. Secretary General Leo Mõtus gave a talk on the budgets of the Academy for 2006 and 2007. Discussion and deliberations followed.

April 25–May 5 – Vice-President Jüri Engelbrecht chaired the ALLEA steering committee session in Istanbul and attended the II International Symposium “Universal Values: Science, Technology and Human Values” in Athens.

May 3 – Rakvere was the venue of the Academy Science Day, which was already the second follow-up event to the Science Day held in 2005 at the same place (see p. 38).

May 3 – President Richard Villems and Secretary General Leo Mõtus participated at the festivities of the 150th anniversary of the Norwegian Academy of Sciences and Letters in Oslo.

May 15 – Member of Academy Endel Lippmaa delivered a public academic lecture “Main Problems of Today’s High Energy Physics in CERN”.



May 24–25 – Academy Hall hosted the scientific conference “Episodic Memory and the Brain” organised in honour of Foreign Member of the Academy Endel Tulving on the occasion of the 80th anniversary by students and colleagues of the jubilarian.

May 29 – Estonian Academy of Sciences held a seminar “Ideas of the ERC and Excellence in Research” (see p. 34).

May 31–June 3 – President Richard Villems and Analyst Marek Tiits participated at a meeting of the Central and East European Academies Network (CEEN) in Budva (Montenegro).

June 1–6 – Head of the Division of the Humanities and Social Sciences Peeter Tulviste participated at the 81st General Assembly of the *Union Académique Internationale*. Peeter Tulviste was elected as the UAI Bureau member.

June 6–9 – Vice-President Jüri Engelbrecht participated at a conference organised by Fondazione Edison “Foundations and Associations for Innovation and Economy. Europe and Italy”.

June 11–12 – Head of the Division of the Humanities and Social Sciences Peeter Tulviste represented the Academy at a seminar organised jointly by *Academia Europaea* and the Berlin-Brandenburg Academy of Sciences “Harnessing European Diversity – a New Paradigm for the Humanities?”

June 12 – Extended session of the Board of the Academy and presentation of the book “National Science Prizes 2007”. The Board decided to accept as eligible all applications for filling the vacant seats of Members of Academy and to register as candidates 16 scientists, who were to be presented to the General Assembly for election. The Board assigned the scholarships of 2007 for completion of scientific monographs and popular science books. The Board decided to announce a public competition for 2007 Bernhard Schmidt Prize and to set up an Appraisal Commission for awarding the prize. The Board also set up a commission for organisation and management of phylogenetics-systematics network.

June 12–13 – Assistant Secretary General for International Relations Anne Pöitel participated at the 13th Bridgehead Organisations meeting of the European Network of Mobility Centres ERA-MORE and at the following meeting of the working group on quality issues in Brussels.

June 18–19 – Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus participated at EASAC meeting in Ljubljana. The meeting included election of EASAC governing body, discussion of EASAC Activity Programme 2007–2010 focusing on building science into policy at EU level. Activities of the working groups and reports in progress, among others the particular oil shale related report, were discussed at the session.

June 19 – Estonian Academy of Sciences held a remembrance conference dedicated to the 90th anniversary of Member of Academy Ilmar Öpik (see p. 32).

June 21–22 – Vice-President Jüri Engelbrecht attended the EURAB plenary session in Brussels.

July 10 – Delegation of the Estonian Academy of Sciences visited, in the framework of the series of field-day discussions, the Jõgeva Plant Breeding Institute (see p. 37).

July 16 – Vice-President Jüri Engelbrecht participated at ISE (“Initiative for Science in Europe”) general meeting in Brussels. The participants included representatives of several European science and umbrella organisations. The rules and procedures and the activities strategy in the direction: science for society were discussed at the meeting.

July 27 – Vice-President Jüri Engelbrecht, Secretary General Leo Mõtus and Assistant Secretary General for International Relations Anne Põitel participated at Complexity-NET meeting in Patra (Greece). Complexity-NET is an ERA-NET project of the EU 6th Framework Programme, where the Academy represents the Ministry of Education and Research.

August 28 – The Academy was visited by Chairman Jussi Nuorteva and Secretary General Reetta Kettunen of the Finnish Committee for Public Information. The guests were met by Vice-President Jüri Engelbrecht and Assistant Secretary General Galina Varlamova. The parties spoke about the activities aimed at the wider public, communication of science information and science journalism.

September 7 – Member of Academy Leo Mõtus visited Stockholm, attending the meeting of the energy working group of EASAC.

September 8–9 – Estonian Academy of Sciences House welcomed the session of the steering committee of the *Union Académique Internationale* (UAI). The session was hosted by Member of Academy Peeter Tulviste.

September 16–19 – Vice-President Jüri Engelbrecht participated at the European Science Foundation conference “Research Integrity” in Lisbon.

September 19 – Member of Academy Ülo Jaaksoo delivered a public academic lecture “Property of a Research Organization”.

September 23–29 – Vice-President Jüri Engelbrecht attended as President of ALLEA and Invited Observer the session of the steering committee of IAP at the Australian Academy of Science.

September 25 – Session of the Board and a seminar of the series “New Trends in Science” – “Computer Science and Computational Science” (see p. 35). At the session of the Board, recognition was bestowed on Member of Academy Hillar Aben for his long-time successful activity as Editor-in-Chief of the

Proceedings of the Estonian Academy of Sciences and Chairman of the Publishing Council of the Academy. Hillar Aben was discharged from the said offices and Member of Academy Jaak Järv was appointed as his successor in both of the foresaid offices. The Editorial Board of the journal “Estonian Journal of Ecology” and the composition of the Marine Commission of the Estonian Academy of Sciences were approved. A new representative of Estonia was appointed to the European Science Foundation Standing Committee of the Humanities. Member of Academy Mihkel Veiderma was discharged from his duties in the Estonian National Committee to the World Energy Council and Member of Academy Endel Lippmaa was appointed as the new representative.

September 28 – All-European Researchers’ Night was celebrated in Estonia for the second time. The project was co-ordinated by Science Centre AHHA in co-operation with the Estonian Academy of Sciences and the Estonian National Broadcasting Company (see p. 40).

October 4 – Academy was visited by Ambassador of the Republic of the Philippines Maria Zeneida Collinson. The guest was met by Vice-President Jüri Engelbrecht, who gave an overview of the Estonian science and R&D funding. The parties discussed options for scientific co-operation.

October 7–10 – Vice-President Jüri Engelbrecht visited Lisbon and attended a conference “The Future of Science and Technology in Europe”.

October 9–10 – Members of Academy Richard Villems, Ain-Elmar Kaasik, Leo Mõtus and Rein Küttner participated at the 11th Baltic Conference on Intellectual Co-operation in Riga (see p. 53).

October 16 – The Academy Hall hosted a brief conference “Estonian Science and International Science Organisations: Experience and Trends” (see p. 32).

October 18–19 – Vice-President Jüri Engelbrecht chaired the ALLEA-organised conference “Emerging Regional Co-operation: Southeast European Academies of Sciences and Humanities in the ERA” in Amsterdam.

October 18–19 – Assistant Secretary General Galina Varlamova attended the ESF-organised science communication seminar in Strasbourg.

October 20–22 – Vice-President Jüri Engelbrecht attended a meeting of academies organised by the French Institute “Les Académies en Europe, XIXe–XXe siècle” in Paris.

October 25–26 – Vice-President Ain-Elmar Kaasik participated at a meeting of the European member-organisations of the International Council for Science (ICSU) in Bern. The meeting aimed at co-ordination of opinions, proposals and interests, in order to enable the optimum output for the ICSU General Assembly to be held in 2008.

October 26 – Vice-President Jüri Engelbrecht moderated an ALLEA Steering Committee meeting in Berlin.

October 31 – Academy Science Day in Järvamaa (see p. 38)

November 1–2 – Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus participated at a Complexity-NET meeting in Budapest. Complexity-NET is an ERA-NET project of the EU 6th Framework Programme, wherein the Academy is representing the Ministry of Education and Research.

November 2 – Jubilee events of the Institute of Physics of the University of Tartu and the Tartu Observatory took place, including celebration of the 100th anniversary of Member of Academy Aksel Kipper (see p. 152) and the 90th anniversary of Member of Academy Grigori Kuzmin.

November 8 – Vice-President Jüri Engelbrecht participated at the events of the 40th anniversary of the Macedonian Academy of Sciences and Arts in Skopje.

November 9–10 – Vice-President Jüri Engelbrecht attended the 3rd World Science Forum in Budapest.

November 13 – Information concerning nomination of candidates for Foreign Members of the Academy by the Divisions was heard out and considered at the Board Meeting, in the same way it was decided to change the composition of the Estonian Organising Committee of the International Year of Planet Earth, to approve the Editorial Board of the journal “Estonian Journal of Engineering” and the new composition of the Council for International Exchange of the Academy. The Board heard out the overview of Chairman of the Appraisal Commission of the Academy’s student research paper competition Georg Liidja about the results of the 2007 competition and information of Secretary General Leo Mõtus about the work results of the Appraisal Commission for awarding B. Schmidt Prize. The B. Schmidt Prize was assigned to Jaan Raik, Ph.D. in Engineering of Tallinn University of Technology. Vice-President Jüri Engelbrecht was nominated as the Estonian candidate for ERAB membership.

November 13 – Conference of the winners of the student research paper competition was held, wherein prizewinning papers were delivered by laureates and diplomas were conferred (see p. 33).

November 28 – Assistant Secretary General for International Relations Anne Pöitel participated at the 14th Bridgehead Organisations meeting of the European Network of Mobility Centres ERA-MORE in Brussels.

November 28–30 – Vice-President Jüri Engelbrecht participated at a science policy conference organised by the European Science Foundation “Is ERA a First Step to GLOREA (Global Research Area)? The ERA from an International Perspective” and at the European Science Foundation General Assembly.

December 7 – Meeting of the Council for International Exchanges of the Academy.

December 12 – Session of the General Assembly of the Academy, where the Bernhard Schmidt Prize was conferred and three new Members of Academy were elected – Tarmo Soomere, Mati Karelson and Jaan Undusk.

December 18 – Session of the Board heard out and approved the reports of Research Professors Malle Krunks, Ülo Niinemets and Ilmar Koppel for the second working year and the work plans for the third working year and decided to open funding of the third working year. It was decided to support association of Estonian Association of Engineers with the Estonian Academy of Sciences.

December 19–20 – Vice-President Jüri Engelbrecht and Secretary General Leo Mõtus attended the EASAC meeting in Paris.

## **MEMBERSHIP OF THE ACADEMY**

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On December 12, the General Assembly of the Academy elected three new Members of Academy to previously announced vacancies:

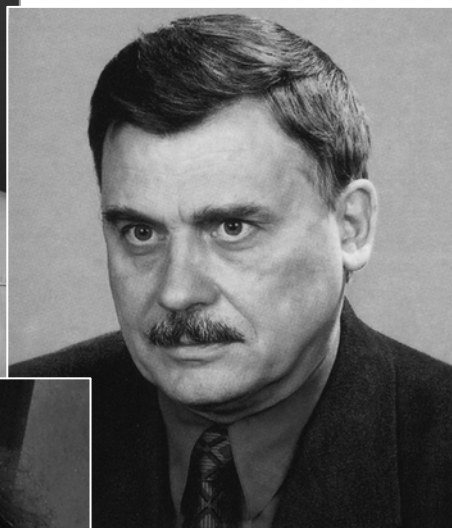
Tarmo Soomere in engineering and informatics (from among 8 registered candidates),

Mati Karelson in natural sciences and medicine (from among 4 registered candidates),

Jaan Undusk in the humanities (from among 4 registered candidates).



*Tarmo Soomere*



*Mati Karelson*



*Jaan Undusk*

The Estonian Academy of Sciences included 58 Members of Academy and 15 Foreign Members of Academy as of 31 December 2007. Their affiliation with the four Divisions was the following:

DIVISION OF ASTRONOMY AND PHYSICS

(14 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, 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

(14 Members of Academy, 3 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, Tarmo Soomere, Enn Tõugu, Raimund-Johannes Ubar.

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

DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

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

Members of Academy: Jaak Järv, Ain-Elmar Kaasik, Dimitri Kaljo, Mati Karelson, 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, Jaan Ross, Huno Rätsep, Karl Siilivask, Peeter Tulviste (Head of Division), Jaan Undusk, Haldur Õim.

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

During 2007 the majority of Members of Academy carried on their research and academic activities as leading experts in their corresponding branches of knowledge. Indicative of the performance of Members of Academy in research were their numerous publications.

Quite a few Members of Academy were acting as experts and advisers, complementary to their principal job. The following Members of Academy sat on expert panels and councils of national significance:

Riigikogu – Ene Ergma (President), Peeter Tulviste;  
Academic Council of the President of the Republic – Jüri Engelbrecht, Jaan Ross, Mart Saarma, Richard Villems;  
Research and Development Council – Mart Saarma, Richard Villems;  
Science Competence Council – Rein Küttner, Enn Mellikov;  
Council of the Estonian Science Foundation – Leo Mõtus;  
Commission of the Estonian Science Prizes – Richard Villems (Chairman), Rein Küttner, Enn Mellikov, Jaan Ross, Peeter Saari, Mart Saarma, Raimund-Johannes Ubar, Raivo Uibo;  
Adviser to the Government of the Republic for Research and Development  
Mati Karelson.

Member of Academy Ain-Elmar Kaasik was elected Chairman of the Estonian Co-operation Forum set up in October (the former Public Understanding Foundation).

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

Member of Academy Enn Tõugu was member of the Higher Education Evaluation Council.

Under the Ministry of Education and Research: Members of Academy Mati Karelson, Ilmar Koppel, Rein Küttner, Peeter Saari and Peeter Tulviste were members of the Research Policy Advisory Committee; Member of Academy Dimitri Kaljo was Chairman of the Steering Committee of the national programme “Files of the Arts and Natural Science”; Member of Academy Ain-Elmar Kaasik was member of the Steering Committee for Preparing the National Programme of Compilation and Publishing Textbooks for Undergraduates in Estonian; Member of Academy Peeter Saari was member of the Terminology Commission.

Under the Ministry of Economic Affairs and Communications: Members of Academy Ülo Jaaksoo, Rein Küttner, Mart Ustav and Richard Villems were members of the Innovation Policy Committee; Member of Academy Ülo Jaaksoo was member of the Informatics Council; Members of Academy Endel Lippmaa, Arvo Ots and Mihkel Veiderma were members of the Energy Council.

Under the Ministry of the Environment: Member of Academy Raivo Uibo was member of the Commission on Gene Technology.

Member of Academy Leo Mõtus was member of the Scientific Council for the Ministry of Defence.



Member of Academy Ain-Elmar Kaasik was member of the Council of Digital Health History of the Ministry of Social Affairs.

Member of Academy Dimitri Kaljo was Chairman of the Commission of Estonian Mineral Resources.

Member of Academy Haldur Õim was a member of the Estonian Language Council.

Member of Academy Rein Küttner was member of the Board of the Federation of Estonian Engineering Industry.

Member of Academy Ülo Jaaksoo was Chairman of the Assessment Commission in Technology and Chairman of the Steering Committee of Development Centres of Technology of Enterprise Estonia, Member of Academy Mati Karelson member of the same bodies.

Many Members of Academy continued their activities on editorial boards of international scientific organisations and scientific journals.

The following Members of Academy acted as Heads of the Centres of Excellence of Estonian Science:

Jüri Engelbrecht – Centre for Nonlinear Studies;

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

Raivo Uibo – Centre of Molecular and Clinical Medicine.

Member of Academy Jaan Einasto (head of the research team) was awarded the National Science Prize for an outstanding discovery influencing the paradigm of the branch of knowledge and the world view (see p. 55).

Member of Academy Huno Rätsep was granted Letter of Acknowledgement of the Ministry of Education and Research.

In 2007, Member of Academy Jüri Engelbrecht was awarded the 3rd Class Order of the National Coat of Arms and Member of Academy Ene Ergma – the 1st Class Swedish Royal Order of North Star and the Big Golden Badge of Distinction of the Order for Merits of the Republic of Austria.

Foreign Members of Academy proceeded to participate in the activities of the Academy and research institutions of Estonia in compliance with time-honoured relations, contacts, and research alliances.

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

## **GENERAL ASSEMBLY**

The General Assembly of the Academy convened twice in 2007:

- April 25 – Annual meeting
  - Address by the Minister of Education and Research Tõnis Lukas
  - Scientific paper by Ants Viires “Retrospections on my Path in Science”
  - Paper by President Richard Villems “2006 Annual Report of the Estonian Academy of Sciences”
  - Report by Secretary General Leo Mõtus “Execution of Budget of the Academy for 2006 and Budget of the Academy for 2007”
- December 12 – Election of Members of the Academy

The first session of the General Assembly was held as an annual meeting, being the 61st in succession. As ever the session focussed on summing up the activities of the Academy in the previous year. The General Assembly approved the consolidated report of the financial activities of the Academy for 2006 and the budget for 2007. Detailed data on the activities of the Academy in 2006 were made available in the newly published Estonian Academy of Sciences Year Book XII (39), which had previously been mailed to Members of Academy in electronic form.

After opening the session, President Richard Villems presented the awards: to Member of Academy Loit Reintam the K. E. v. Baer Medal, to Member of Academy Agu Laisk, Member of Academy Ilmar Koppel, Member of Academy Arvo Krikmann and Member of Academy Haldur Õim Medals of the Academy. Letter of Appreciation of the Academy was conferred on Member of Academy Mihkel Veiderma for long-term activity as Chairman of the Energy Council of the Academy.

President Richard Villems gave as a present to Enn Tõugu, Endel Lippmaa and Viktor Palm the film “Estonians in the Kremlin. The story about the crumbling of the USSR” and reminisced the role of Members of Academy in the events recorded in that film.

The annual meeting was attended by Minister of Education and Research Tõnis Lukas, who made a speech.

A scientific paper on the topic “Retrospective views at my scientific path” was delivered by Ants Viires, laureate of the 2007 National Science Prize for long-term achievements in research and development.

As a keynote paper of the annual session President Richard Villems presented the 2006 Annual Report of the Estonian Academy of Sciences. Questions were posed by Members of Academy Anto Raukas and Viktor Palm. On the motion of the President, the General Assembly approved the 2006 Annual Report of the Academy, basing on the report of the President and the materials, presented in the Year Book.

Secretary General Leo Mõtus rendered an overview on the execution of the budget of the Academy for 2006 and presented the budget for 2007, which was approved by the General Assembly.

During the discussion comments were made by Members of Academy Agu Laisk and Endel Lippmaa.

The second regular session of the General Assembly was held on 12 December.

At the beginning of the session President Richard Villems handed over the Medal of the Academy to Foreign Member of the Academy Els Oksaar. The Bernhard Schmidt Memorial Prize was conferred on Jaan Raik, Ph.D. in Engineering, of Tallinn University of Technology for his work “Turbotester of the test software of microelectronics” (see p. 43).

The agenda of the session included the election of Members of Academy to three announced vacancies: in engineering and informatics, natural sciences and medicine, and the humanities. Among eight candidates for membership in the Academy, proposed by Members of Academy, institutions of higher education and research establishments in the area of engineering and informatics (Ahto Buldas, Jakob Kübarsepp, Andres Metspalu, Mart Min, Ago Samoson, Tarmo Soomere, Tarmo Uustalu, Andres Öpik), Tarmo Soomere was elected as Member of Academy; among four candidates in the area of natural sciences and medicine (Jaanus Harro, Mati Karelson, Martin Zobel, Eero Vasar), Mati Karelson was elected as Member of Academy, and among four candidates in the area of the humanities (Jüri Allik, Toomas Karjahärm, Jüri Talvet, Jaan Undusk), Jaan Undusk was elected as Member of Academy.

## BOARD

The Board of the Estonian Academy of Sciences worked in the following composition in 2007:

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 the Division of Astronomy and Physics	<i>Peeter Saari</i>
Head of the Division of Informatics and Engineering	<i>Rein Küttner</i>
Head of the Division of Biology, Geology and Chemistry	<i>Ilmar Koppel</i>
Head of the 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>

The Board held 7 working meetings in that year.

The schedule of events of the Academy for 2007 was discussed and approved at the first session, taking into account the proposals of the Divisions. For the most part the schedule was carried out by the end of the year.

The report of Research Professor Ülo Niinemets for his first working year was heard at the first session of the year. At the final session of the year, the reports of all Research Professors: Ilmar Koppel, Malle Krunk and Ülo Niinemets for the second working year were heard, their plans for the third working year were reviewed and financing of the 3rd working year of the Research Professors was opened.

On account of the election of new Members of Academy at the end of the year, the issues relating to elections were discussed several times throughout that year. At the beginning of the year, a decision was taken to announce three vacancies, the proposals of the Divisions for vacant titles were discussed in March and April. The following vacancies were subsequently approved: in engineering and informatics, natural sciences and medicine, and the humanities. On June 12, the Board decided to accept all 24 applications and to register 16 scientists as candidates, to fill the announced vacancies of Members of Academy.

Regarding memorial medals of the Academy, the Board decided to award Karl Eduard von Baer Medal to Member of Academy Loit Reintam for out-

standing achievements in the area of biology. It was decided to award the Medal of the Academy to Members of Academy Ilmar Koppel, Arvo Krikmann, Agu Laisk and Haldur Õim, and to Foreign Member of Academy Endel Tulving.

The Board heard information on the results of the student research papers competition, presented by Chairman of the Student Paper Review Committee, Member of Academy Georg Liidja. The session was followed by a conference, where winners of the student research papers competition delivered 4 papers and were granted diplomas (see p. 44). The Board considered the possibilities of awarding B. Schmidt Prize and decided to announce the said competition. The composition of the respective committee was approved (Chairman Member of Academy Hillar Aben). The Board decided to grant scholarships through competition for completion of research monographs and popular science books and for preparation of them for publication. A corresponding commission was established to examine the submitted applications (Chairman Member of Academy Loit Reintam), and scholarships were assigned on the proposal of the commission (see p. 43).

In the reporting year, various issues relating to publishing activity were repeatedly on agenda. In January, compositions of the editorial boards of the journals "Estonian Journal of Earth Sciences", "Proceedings of the Estonian Academy of Sciences – Physics. Mathematics", "Proceedings of the Estonian Academy of Sciences – Biology. Ecology" were approved. The Board changed at its session in April the titles of several publications, upon proposition of the Publishing Strategy Commission. For that matter, the Engineering series of the Proceedings of the Estonian Academy of Sciences was renamed to "Estonian Journal of Engineering", the biology-ecology series to "Estonian Journal of Ecology" and the physics-mathematics and chemistry series were combined into one multidisciplinary journal "Proceedings of the Estonian Academy of Sciences". The session of the Board, held on September 25 decided to satisfy the application of Member of Academy Hillar Aben, relieving him of the obligations of Editor-in-Chief of Proceedings of the Estonian Academy of Sciences and Chairman of the Publishers' Council. At the same session, Member of Academy Jaak Järv was appointed new Editor-in-Chief of the Proceedings of the Estonian Academy of Sciences and Chairman of the Publisher's Council. The session approved the composition of the editorial board of the journal "Estonian Journal of Ecology". In November, the Board approved the composition of the editorial board of the journal "Estonian Journal of Engineering". The Board took cognizance of information about the editorial board of the journal "Proceedings of the Estonian Academy of Sciences", which was not approved by the end of the year.

Discussions and decision-making in issues, related to current commitments constituted a considerable part of the Board's work. Thus the execution of the consolidated budget for 2006 and the budget for 2007 of the Academy was

examined and presented to the General Assembly. The Board heard the proposition of amendments to be introduced to the Academy Act and decided to submit them at General Assembly for approval. The Board approved the composition of the Estonian Organising Committee for Celebration of International Year of the Planet Earth. According to application of Member of Academy Dimitri Kaljo, he was relieved of the obligations of Chairman of the Committee and Professor of the University of Tartu Tõnu Meidla was named new Chairman. A commission was established for organising and supervising the work of philogenetics-systematics network (Chairman Urmas Kõljalg), and the working plan for 2007 of the said network was taken cognizance of. The Board decided to satisfy application of Member of Academy Mihkel Veiderma about relieving him of the obligations of Chairman of Energy Council of the Academy and to appoint Member of Academy Endel Lippmaa Chairman of Energy Council of the Academy. The Board also decided to appoint Member of Academy Endel Lippmaa representative of the Academy in Estonian National Committee of World Energy Council. It was considered expedient for the Academy to join the Marine Board of the European Union, and for adequate representation of Estonian marine sciences in that Committee, the Marine Commission of the Academy was established (Chairman Tarmo Soomere). The Board decided to establish the Estonian Academy of Sciences Fund, as a sub-foundation of the Foundation Estonian National Culture Fund, and appointed the composition of its Supervisory Board. It was decided to support the printing of the publication "Competitiveness of Estonian economy in the Baltic Sea area" and printing costs of the brochure belonging to the DVD disk of the documentary film "Estonians in the Kremlin – the story about the crumbling of the USSR". The Board discussed and approved the agendas of the session of the General Assembly. It took to cognizance of the schedule of meetings of the following jubilee year. The Board considered repeatedly the relations of the Academy with media and set up a commission, at the end of the year, for developing co-operation with the media.

Once a year, one institution having associated with the Academy is visited. In April, a session of the Board was held in the Institute of the Estonian Language. Director Urmas Sutrop presented the activity of the Institute and answered the questions of the members of Board. In the reporting year, the Board received a proposition from Estonian Association of Engineers to associate with the Academy of Sciences, to which the Board agreed in principle.

The Board discussed at its sessions various issues related to the work of international science organisations and the nomination of Estonian representatives to commissions. The Board approved the composition of the Council for the International Exchange Foundation of the Academy (Chairman Vice-President Jüri Engelbrecht). The Board nominated the Head of Centre for Culture and Communication Studies of the University of Tartu Kristin Kuutma as representative of Estonia in Standing Committee of the Humanities of the Euro-

pean Science Foundation. The Board took cognizance of information about establishment of European Research Area Board (ERAB) and nominated Vice-President Jüri Engelbrecht as Estonian candidate for member of ERAB.

## **DIVISIONS\***

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

In 2007 two meetings of the Division were held and jubilee dates of the former and present members of the Division were celebrated.

On February 16, Tõnu Viik delivered a report at the meeting “The rules of procedure and working principles of the Council of Estonian Science Foundation and Science Competence Council in passing decisions on funding”. The meeting discussed the directions of development of the journal “Proceedings of the Estonian Academy of Sciences. Physics. Mathematics”.

The meeting of the Division held on October 19 had on its agenda a scientific paper by Peeter Saari about quantum information technology; opinions and thoughts were exchanged about elections of Members of Academy, at present and in the future.

Jointly with the Institute of Physics of the University of Tartu the Division celebrated the 80th anniversary of Harry Õiglane on March 5 and the 95th anniversary of Member of Academy Harald Keres on November 15. Together with Tartu Observatory as the main organiser, the Division celebrated the 100th anniversary of Member of Academy Aksel Kipper and the 90th anniversary of Member of Academy Grigori Kusmin.

In co-operation with the Estonian Physical Society and authors of the collection “Scientific Thought in Estonia. Exact Sciences”, the Division prepared introductory summaries to the reviews on physics in the collection, aimed at wider public, incl. the youth and posted them along with the full text reviews on the Web portal <http://www.fyysika.ee/fyysika/>.

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

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

Meeting of the Division, held in February discussed the working plan of 2007 and the preparations for seminars of the Academy “Computer science and

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

computational science” and “Developments of energy supply in regions (after the example of Lääne-Virumaa)”.

Papers by candidates for Academy membership were heard and discussed as well as candidate(s) for Foreign Member(s) of the Academy were nominated at a meeting of the Division held on two days in October/November. Resulting from the interdivision elections the Division decided to recommend the election of Tarmo Soomere as a new Member of Academy to the General Assembly of the Academy. It was decided to present Professor Grigori Mints as a candidate for Foreign Member of the Academy, yet on the other hand to recommend consideration of nominating Professor Jurgis Vilemas as an additional candidate for Foreign Member to the Board of the Academy.

With active participation of members of the Division, a seminar “Developments of energy supply in regions (after the example of Lääne-Virumaa)” was held in Rakvere on 3 May in the framework of the Science Day.

One of the priority activities of the Division was compilation of the collection “Scientific Thought in Estonia. Engineering II”, which appeared in February 2007. Presentation of the collection took place at seminar “R&D and competitiveness of economy”, where papers were delivered by representatives of unions of main branches of economy and research institutions (universities).

In September, Member of Academy Ülo Jaaksoo delivered a public academic lecture “Assets of the science organisation”.

By organisation and participation of members of the Division, there were several specialist conferences and seminars held: on oil shale energy (A. Ots), on computer science and technologies of software (E. Tõugu, L. Mõtus, R. Ubar), in the area of mechanics and its applications (J. Engelbrecht, H. Aben, R. Küttner), on new materials and the technologies of their manufacturing (E. Mellikov) etc. The Division also participated in organisation of summer school on stress in glass (H. Aben) and summer school on waves and coastal processes (T. Soomere, J. Engelbrecht), it prepared the special issue of Phys Math – Euromech 478 (guest editors G. A. Maugin, A. Berezovski, J. Engelbrecht).

Members of the Division represented the Academy or the Division at several decision-making bodies for science administration (see “Membership”).

## DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

In 2007 two extended meetings of the Council of the Division as well as two general meetings and two electronic meetings or polls of the Division were held.

The extended meeting of the Council, held on 12 January discussed the activity of the Division in 2006, the working plan for 2007, publishing efforts



of the Academy of Sciences, the matters relating to vacancies of the Academy of Sciences, results of election of the candidacy of nominee for K. E. von Baer Medal (Loit Reintam), preparation of the General Meeting of the Division and other issues.

The General Meeting of the Division held on 22 January approved, after discussion, the activities report for 2006 and working plan for 2007. Members of the Division deliberated on topics of the future of journals of the Academy of Sciences and clarified the positions of the Division regarding the filling of one vacancy of the Academy of Sciences. The Division supported the candidacy of J.-M. Punning for the position of chairman of the editorial board of Proceedings of the Academy of Sciences: Biology Ecology.

The second meeting of the Division held on 4 December was dedicated to selection of candidacies received for filling the vacancies of the Academy of Sciences, hearing the papers of scientists proposed for candidacy of membership in the specialities of the Division (J. Harro, M. Karelson, M. Zobel, E. Vasar), discussion of candidates of other Divisions and carrying out balloting of preferences. The results of balloting were presented at General Assembly.

Upon initiative of the Division, on 13 April there was held the seminar "Health of the Estonian people" – moderator Ain-Elmar Kaasik, and on 18 April the seminar "Medicines research and medicines development" – moderator Mart Ustav (see p. 34).

Members of the Division participated at Science Days in Järvamaa and Rakvere, they visited the Jõgeva Plant Breeding Institute (see p. 38).

Member of Academy Loit Reintam was awarded K. E. von Baer Medal, Medal of the Academy of Sciences was conferred on Member of Academy Ilmar Koppel. Member of Academy Ilmar Koppel was elected Honorary Doctor of Tallinn University of Technology.

On December 12, the General Assembly elected Professor of Molecular Technology of the University of Tartu and Tallinn University of Technology Mati Karelson Member of Estonian Academy of Sciences in natural sciences and medicine.

Members of the Division represented the Academy or the Division at several decision-making bodies for science administration (see "Membership").

The Commission for Nature Conservation and the Commission of Meteoritics proceeded with their activities under the auspices of the Division.

THE COMMISSION FOR NATURE CONSERVATION (chaired by Urmas Tartes) continued to work at the Institute of Agriculture and Environmental Protection of the Estonian University of Life Sciences in the premises of the Baer House at Veski St. 4.

The 46th Day of Speeches of the Commission and a General Meeting were organised, compilation of the new Red Book was continued in co-operation with the Ministry of Environment.

The 46th Day of Speeches on topic “Man and the unique nature of Estonian coast” was held in Tallinn on 31 May 2007. Speeches were delivered by Urmas Tartes, Evald Ojaveer, Henn Ojaveer, Markus Vetemaa, Heli Shpilev, Ivar Jüssi, Kaja Lotman, Valter Petersell and Risto Tanner.

The General Meeting held on December 14 focussed on assessment of cross-border environmental impact of gas pipeline Nord Stream, heard the opinions of experts and formulated a written position to the Ministry of Environment.

The Kumari Prize 2007 was conferred on Member of Academy Loit Reintam and it was handed over in Tallinn Botanical Garden on 14 May. On display in the same place was the exposition on L. Reintam’s life and activity.

The Commission for Nature Conservation organised several other public exhibitions during the year, dedicated to anniversary dates of ornithologists-figures of nature conservation (Heinrich Veromann, Sven Onno, Ahto Jõgi, Olav Renno) and lectors of zoology (Johannes Piiper, Heinrich Riikoja, Juhan Aul, Hans Kauri, Johannes Lepiksaar, Eerik Kumari).

THE COMMISSION OF METEORITICS (chaired by Member of Academy Anto Raukas) proceeded with the research of the morphology of pulverised spherules of Kaali, their chemical composition and genesis in collaboration with the French scientist Professor F. Marini. The study of the main crater and small craters of Kaali was continued on the basis of co-operation project and exchange programme between the Academy of Sciences of Poland and the Estonian Academy of Sciences.

The exhibits of the craters of Tsõõrikmäe and Ilumetsa were updated. The results were published in the journal *Geochronometria* (2007, 28, 25-29).

The Meteoritics Day was held in Kaali on 17 August, commemorating the 80th anniversary of Agu Aaloe and the 70th anniversary of Vello Lõugas. There was a scientific conference held within the framework of the Day, with Anto Raukas, Väino Puura, Ants Kraut, Külli Rikas, and Bruno Pao speaking. There were also presented four meteoritics related films. The main crater and small craters of Kaali were presented to those interested by Reet Tiirmaa, Ants Kraut and Tanel Moora.

A booklet “Estonian Meteorite Craters” (in English and Finnish) was released as a joint publication of Tallinn University of Technology and Turku University of Technology. Released in print was also the book “Star Scars in Saaremaa”, compiled by Reet Tiirmaa (in German and English) and as a repeat issue, with new illustrative material “Meteorite Craters of Kaali” in

Latvian. To commemorate Ago Aaloe, the book “Memento. Portrait of Ago Aaloes” was released.

#### THE DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

On January 19, the 65th anniversary of Member of Academy Haldur Õim was celebrated in the Veski auditorium of the University of Tartu with a conference.

On February 7, the 80th anniversary of Member of Academy Raimund Hagelberg was celebrated in the Bank of Estonia, as well as publication of his book “Money matters and role of the state in organising them”.

The meeting of the Division held on February 26 discussed, besides nominating candidates for Member of Academy, the proposals of creating ESTICA, i.e. the Estonian computer system, and decided to present, as candidates to the Medal of the Estonian Academy of Sciences, Member of Academy Arvo Krikmann, for introduction of modern approaches and methods to Estonian folkloristics; to Member of Academy Haldur Õim for systematic successful implementation of methods of computational linguistics in research of Estonian; and to Foreign Member of the Academy Endel Tulving for the deep imprint left in the world science in the area of experimental-psychological research of memory.

On May 24–25, the Estonian Academy of Sciences House witnessed the conference held in honour of the 80th jubilee anniversary of Foreign Member of the Academy Endel Tulving “Episodic Memory and the Brain”.

On October 27–28, the Division celebrated jointly with the Estonian Literary Museum the 80th anniversary of the Estonian Archives of Folklore and the 150th anniversary of Matthias Johann Eisen.

Upon initiative of the Division, the Science Day was held in Järvamaa (see p. 38).

On November 13, the meeting of the Division decided to present Ilse Lehiste as candidate of Foreign Member of Academy.

The Division participated at events of the 100th jubilee of the Estonian Literary Society and at the 51st Kreutzwald Days at Literary Museum, where Member of Academy Peeter Tulviste delivered a paper on Estonian identity.

On December 21, the 80th anniversary of Member of Academy Huno Rätsep was celebrated in the Veski auditorium.

Members of the Division represented the Academy or the Division at several decision-making bodies for science administration (see “Membership”).

## COUNCILS

### ENERGY COUNCIL

At session of the Board of the Academy, held on March 13, Member of Academy Mihkel Veiderma was relieved of the obligations of Chairman of the Energy Council of the Estonian Academy of Sciences and Member of Academy Endel Lippmaa was appointed the new Chairman. The long and outstanding work of Mihkel Veiderma as Chairman of the Energy Council was acknowledged with Letter of Appreciation of the Academy.

In 2007, the Council held three meetings: on June 20, on September 18 and December 3.

The first meeting of June 20 discussed the future problems of Estonian energy: preservation of the oil shale energy, the question of the CO<sub>2</sub> limits, export of shale oil, the questions of nuclear energy and the problems related to the gas pipeline to be built in the Baltic Sea. Under consideration, too was the document drawn by Endel Lippmaa in March 2007 “Energy Council Position Paper in the Matter of Estonian Oil Shale in a Global Context”. The meeting decided to address Government of the Republic of Estonia in issues of CO<sub>2</sub> limits.

On September 18, a special meeting of the Council was held, focussing on Nord Stream AG problems. Attending the meeting as a guest was Einari Kisel (Ministry of Economy and Communications). In the process of exchange of thoughts the members of the Council noted, that the Estonian coast is geologically much more complicated than the Finnish coast. Here, there are located deep ancient valleys, filled with porous sediment, where deep testing holes cannot be bored, under Estonian Economic Zone Act. The whole Baltic Sea is seismically somewhat unstable. Insufficient has been co-operation with Finland and Sweden. As a result of the discussion the Energy Council reached the conclusion – the gas pipeline is energetically useless to Estonia and hazardous both from security and environmental aspects. Having analysed all various aspects, the Energy Council did not find substantiated the realignment of the gas pipeline to be laid in the Baltic Sea.

The meeting held on December 3 discussed the work of the World Energy Council (WEC) in Rome, the ways of development of the Estonian energy and the energy strategy of the Baltic States. Attending the meeting as guests were President of the Academy Richard Villems and Sandor Liive and Raine Pajo of Eesti Energia. The work of the World Energy Council conference in Rome was introduced by Endel Lippmaa, Ülo Rudi and Sandor Liive – members of the Energy Council having attended the conference.

A comprehensive report on ways, of development of Estonian Energy was delivered by Sandor Liive and Raine Pajo. The speakers elaborated on strate-

gic international connections to be completed in 2012–2018, problems of electricity production and CO<sub>2</sub>, the ash disposal system being worked out. For initiating a discussion, four strategic options were proposed for production of electricity by 2025. After an exchange of opinion the Council resolved that the issue, whether and how we wanted to produce electricity, was to be decided in the nearest future. The Council decided that the oil shale energy was to be maintained in its current volume and emphasised the need to force building of energy cables. It was decided to separately prepare the meeting dedicated to nuclear energy problems.

Members of the Council considered the document on the Baltic energy strategy, approved by the Ministry of Economy and Communications, as subject to revision and decided to address appropriate questions to the Ministry for reply, comments and potential amendments.

# CONFERENCES, SEMINARS, LECTURES, DISCUSSIONS

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## CONFERENCES

19 June – Academy Hall was the venue for a commemorative conference, dedicated to the 90th anniversary of MEMBER OF ACADEMY ILMAR ÖPIK, organised by the Estonian Academy of Sciences and the Department of Thermal Engineering of Tallinn University of Technology. Opening speeches were delivered by Rein Küttner and Rein Vaikmäe.

Papers were presented by:

- A. Paist* Making of a researcher;
- A. Ots* Ilmar Öpik as research scientist;
- J. Saar* Tutor through a student's eye;
- A. Prikk* Ilmar Öpik in picture.

Ilmar Öpik was remembered by *M. Veiderma, A. Raukas, K. Rebane, A. Hamburg, R. Talumaa, A. Kogerman, M. Kaare, E. Pajumaa* and *A. Öpik*.

16 October – Academy of Sciences held a brief conference ESTONIAN SCIENCE AND INTERNATIONAL SCIENCE ORGANISATIONS: EXPERIENCE AND TRENDS. Moderated by Jüri Engelbrecht.

Speaking at the brief conference were:

- J. Engelbrecht* Academy in international science organisations;
- R. Vaikmäe* Estonia and the European Polar Board;
- D. Kaljo* Estonian National Committee for Geology in the International Year of Planet Earth;
- K. Reivelt* Activities of the Estonian Physical Society and the European dimension;
- M. Sirendi* Estonia in the European Science Foundation;
- A. Leete* Experience of participation in the ESF programme (EUROCORES BOREAS);
- Ü. Must* Co-operation in the field of scientific and technical research network (COST).

When summarising the conference Member of Academy Jüri Engelbrecht highlighted the following positions: representation of Estonian science and scientists in international science organisations is rather good; their voice reads fine and clear (incl. in decision-making matters); as compared with the neighbouring countries, a number of steps have been made in Estonia at the proper time, incl. the choice of international organisations to join, the time of

joining, organisation of membership fee payments; in the framework or through participation in international organisations both actual research work and the informatory work (popularisation) is carried out; the Academy of Sciences proceeds to support national committees and science societies.

13 November – CONFERENCE OF THE STUDENT RESEARCH PAPER COMPETITION WINNERS was held. Academy recognises by monetary prizes for research the students having attained outstanding results in research and encourages capable students to start into independent research in the future as well. The conference was opened by President of the Academy Richard Villems, diplomas were handed over to the laureates.

Authors of prize-winning works delivered their papers:

- R. Maigre* of Tallinn University of Technology: Web-services composition software equipped with user interface;
- A. Sang* of University of Tartu: Impact on the mobility of *Parnassius mnemosyne*, Lepidoptera: Papilionidae of the density of food plant of larvae and landscape cohesion;
- T. Tuvikene* of University of Tartu: Garages and car parking lots in the city of Tartu;
- M. Pärn* of Tallinn University: Drug usage problems among Estonian school students.

## SEMINARS

21 February – Estonian Academy of Sciences held a seminar RESEARCH AND DEVELOPMENT ACTIVITY AND COMPETITIVENESS OF ECONOMY, focussing on implementation of results of research and development activity and promotion of innovation in entrepreneurship. The present day economic policy, where Estonia has heretofore been successful and which has been directed at creation and maintenance of stable macro-economic environment lacks effective levers, which would be directed at linking research with entrepreneurial sector. Falling short is the development of factors, which would bolster the competitive posture of the companies and provide for the significant growth in the nearest proximity of the export volume of knowledge based production and services. The seminar was opened by President of the Academy Richard Villems.

The following papers were on schedule:

The role of university research in enhancing the competitive edge of economy

- R. Vaikmäe* Tallinn University of Technology
- A. Heinaru* University of Tartu
- A. Koppel* Estonian University of Life Sciences

Vision of the Estonian Chamber of Commerce and Industry

*T. Luman*

Professional associations: problems, trends, needs

*A. Hamburg* Estonian Association of Engineers

*J. Riives, A. Hõbemägi* Federation of Estonian Engineering Industry

*M. Virkebau* Estonian Clothing and Textile Association

*T. Saron* Estonian Dairy Association

*A. Kull* Estonian Woodworking Federation

*U. Kõlli* Estonian Association of Information Technology and Telecommunications

On the strength of the proposals by several speakers, the moderator of the event Rein Küttner concluded the seminar with an idea, that it would be expedient to organise a “forum of industry”, where researchers together with representatives of professional associations and larger enterprises could meet and discuss topical issues in the development of economy. That association could have further regular meetings to collaborate with a view to find solutions for averting bottlenecks in technological development of economy.

13 April – the Academy House hosted a seminar of the series SCIENCE TO THE SOCIETY with the subtitle HEALTH OF THE ESTONIAN POPULATION.

Papers were presented by:

*A. Kasmel* Future vision for the development of health systems;

*A.-E. Kaasik* Health of Estonian population and the factors affecting it;

*M. Rahu* What shall we do with epidemiology?;

*R. Uibo* Medical science in Estonia – achievements and problems.

Presentation of papers was followed by a discussion moderated by Ain-Elmar Kaasik.

18 April – House of the Estonian Academy of Sciences hosted the seminar MEDICINE RESEARCH AND MEDICINE DEVELOPMENT. The seminar was opened by President of the Academy.

The following papers were heard:

*A. Karis, M. Ustav* Medicine development competency in Estonia;

*N. Spurr*, Vice-President of the pharmacy company GlaxoSmithKline: Challenges of large pharmacy companies and their possible co-operation with Estonia.

Thereafter, Estonian entrepreneurs expressed their opinions, followed by a discussion, that was moderated by Mart Ustav.

29 May – Estonian Academy of Sciences held a seminar IDEAS OF THE ERC AND EXCELLENCE IN RESEARCH. Speaking at the seminar were researchers, involved in the formation of the European Research Council (ERC). The



European Research Council is an assembly instituted by the European Commission for funding the front line research in implementation of the 7th Frame Programme. ERC science council will determine the research strategy of ERC and will provide the conformity of its activity with quality requirements of the science competence.

Seminar was opened by Jüri Engelbrecht and Richard Villems. Heard out were the following papers:

*Ch. Simon*, European Commission: The Present State of the European Research Council;

*J. Engelbrecht*, Estonia: On European R&D Policy and the Estonian Programme on Centres of Excellence in Research;

*E. Neher*, Germany: The Biophysics of Short Term Synaptic Plasticity.

25 September – a seminar of the series NEW TRENDS IN RESEARCH with the subtitle COMPUTER SCIENCE AND COMPUTATIONAL SCIENCE.

On the agenda were:

*P. Ellervee* Design of digital yesterday, today and tomorrow;

*T. Uustalu* Certified software;

*J. Vilo* Bioinformatics;

*L. Mõtus* Computations in proactive systems;

*E. Tõugu* How smart is the software?

The papers were followed by a discussion, moderated by Enn Tõugu.

Under scrutiny were development phenomena of the recent years: layering, proactivity, mobility and interactivity, as well as the safety and correctness of software. Interest was raised by development of bioinformatics in recent years and the related challenges faced by computational methods, as well as proactive methods and computations therein and the evolution of the concept of proactivity.

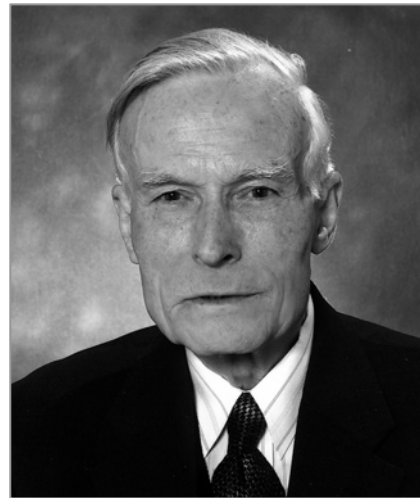
## PUBLIC ACADEMIC LECTURES

The traditional series of “Estonian Academy of Sciences public academic lectures” were complemented in 2007 with three lectures:



14 February  
“Is It Feasible to Forecast Behavior?”  
Professor *Jaanus Harro*

15 May  
“Main Problems of Today’s High  
Energy Physics in CERN”  
Member of Academy *Endel Lippmaa*



19 September  
“Property of a Research  
Organisation”  
Member of Academy *Ülo Jaaksoo*

## DISCUSSIONS

On 10 July the delegation of the Estonian Academy of Sciences visited the Jõgeva Plant Breeding Institute, within the field-day discussion series. The delegation was given an intimate and detailed overview of the activities of the Institute, its plans and developments. The delegation also introduced itself to the selection works on the experimental fields and greenhouses. Of particular interest to the delegation was the experimental field of grain (see photo), complete with the commentaries of Member of Academy Hans Küüts and senior researcher Ülle Tamm and explanations of Member of Academy Loit Reintam about creation of soil and its quality.

Members of Academy were received by Director of Institute Mati Koppel and Member of Academy Hans Küüts (former long time Director of Institute). From the administration of the Academy the visit was attended by President Richard Villems, Vice-President Ain-Elmar Kaasik, Secretary General Leo Mõtus, Head of the Division of the Humanities and Social Sciences Peeter Tulviste and Members of Academy Dimitri Kaljo, Ülo Lepik, Georg Liidja, Loit Reintam, Arved-Ervin Sapar and Mihkel Veiderma.



From left: Members of Academy R. Villems, L. Reintam, P. Tulviste, L. Mõtus, Director of the Institute M. Koppel, Members of Academy Ü. Lepik, G. Liidja, A.-E. Sapar, M. Veiderma.

On 3 May 2007, the seminar “Academy Members Day” was held in Rakvere as the second follow-up event to the Science Day. Attending were Members of Academy Anto Raukas, Arvo Ots, Rein Küttner and Professor *Mati Valdma* and Associate Professor Arvi Poobus. Lääne-Virumaa was represented by about 20 participants headed by County Governor. Seminar was chaired by Member of Academy *Anto Raukas*.

Papers were delivered by Mati Valdma (Institute of Electrical Energetics of Tallinn University of Technology), Arvi Poobus (Institute of Thermal Engineering of Tallinn University of Technology), Arvo Ots (Institute of Thermal Engineering of Tallinn University of Technology). Mati Valdma spoke on current situation of Estonian energetics and its perspectives for the future. Arvi Poobus spoke about the possibility of Lääne-Virumaa self-sustaining in energetics, and the paper of Arvo Ots was dedicated to the problems of the most important mineral resource of Estonia – the oil shale, its suitability for producing electricity and oil.

The papers were followed by a panel discussion, moderated by the journalist *Illar Mõtus* from Lääne-Virumaa. The main problem at discussion became the issue of what the development plan of energetics of the county should look like and how it should be drafted. Discussion about perspectives of use of oil shale met with lively interest. There were questions posed regarding the size of oil shale resources, the possible and necessary production volumes and environmental protection. Nor were the needs for nuclear energy and the related problems dismissed.

On 31 October, a Science Day of the Academy was held in Järvamaa. It was already the eighth undertaking in the tradition of science days, started at the beginning of 1999.

The Science Day started with a meeting in the hall of Mainor Higher School in Paide, where the following papers were delivered:

- Järva County Governor *Ü. Vahtramäe*: Järvamaa: the present day and the plans;
- President of the Estonian Academy of Sciences *R. Villem*: Estonian Academy of Sciences and its tasks;
- Member of Academy *L.Mõtus*: Natural and man-made environment;
- Researcher of Estonian Literary Museum *M.-A. Remmel*: Image of an evil landlord in popular heritage of Järvamaa: Albu Tuglas, Purdi Pukk and others.

The County Governor spoke about the development of industry, agriculture and education of the county. Members of Academy obtained a thorough overview of the high level of Järvamaa, as compared to other counties, in almost all areas. The County Governor displayed especial pride over the Järvamaa development agreement 2007–2013, which was signed by 61 parties

and which the other counties are lacking as yet. President of the Academy spoke about the place of Estonian Academy of Sciences among its counterparts and about its historical formation. Member of Academy Leo Mõtus delivered a paper on natural and man-made environment, interspaced with examples causing animation in the hall. Researcher of folklore Mari-Ann Rimmel spoke about the evil landlords of Järvamaa, bringing a host of examples from the popular tradition.

After the meeting, a visit was rendered to AS Mäo Klaas, whose Manager Tiit Raud presented the story of development of the plant, its background and the work process, guided an excursion in production premises and answered a host of questions by Members of Academy.

In the second half of the day, Albu manor and Tammsaare Museum were visited.

The Science Day was visited by Members of Academy Ain-Elmar Kaasik, Georg Liidja, Leo Mõtus, Loit Reintam, Huno Rätsep, Arved-Ervin Sapar, Peeter Tulviste, Mihkel Veiderma, Richard Villems ja Haldur Õim.

## **RESEARCHERS' NIGHT 2007**

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On 28 September 2007, Estonia celebrated the pan-European Researchers' Night for the second time, continuing the tradition of promoting science and scientists to the public at large in an amusing and relaxing key. Science Centre AHHA co-ordinated the project in Estonia, with Estonian Academy of Sciences and Estonian National Broadcasting Company as co-partners.

The Academy was in charge of the events in Tallinn, bringing under its umbrella several other organisers, e.g. Tallinn Engineering and Science Centre (Energy Centre), National Institute of Chemical Physics and Biophysics, Tallinn Botanical Garden, Tallinn Zoo, Estonian Media Artists' Union (MARTU), Science Bus team, Estonian Art Museum (KUMU), etc. – all of them turning out excellent co-operation partners. The “Night” in Tallinn extended into a full day, actually, introducing researchers of different scientific disciplines at venues across the town.

The event “Researchers in the World of Plants” that took place on the premises of Tallinn Botanical Garden was a starter in the morning. Nelli Orissaar (Deputy Director) and Siiri Liiv (Head of Department) organised excursions and an orienteering game for school children.

The Academy opened its doors for the event “Researchers in the World of Music”. Town people had an opportunity to listen to a lecture and the following concert “The Pre-History of Estonian Music: Baroque Music in Tallinn and Narva”. Professor Toomas Siitan, Chairman of Estonian Musicological Society moderated the evening.

Night strolls in Tallinn Zoo had been popular in 2006 already, so the idea was retained in 2007 under the title “Researchers in the World of Animals”. One of the tours was guided by Aleksei Turovski. Afterwards the participants could learn about the progress that Tiit Maran and his colleagues had made on re-introducing European mink and other species in Estonia, also about the application of genetics in wildlife protection as presented by Maris Roht.

The pivotal event of the Night “Researchers and the Art of Science” was held in KUMU. After the opening address by Secretary General of the Academy Leo Mõtus, the audience could attend several activities, a number of them running in parallel:

- two science theatre performances on science that surrounds us even if we are not aware of the fact: “Kitchen” by Aare Baumer (Acting Director of Energy Centre) and “Electricity” by Margit Vallikivi and Ahto Kuusk of Science Bus team;
- exposition of interactive exhibits “Sound and Voice”, created by Energy Centre specially for this event;

- workshop “Arts&Lights”, with Kaido Reivelt (Chairman of Estonian Physical Society) as a key speaker and co-speakers associated with MARTU, incl. Ron Haselden, Veronika Valk and Michael Dumiak. The workshop was a follow-up on the media artists initiative in mounting four metre high LED-lamp figures on a Swan Pond isle in the park Kadriorg (the attraction had been up from 20 September);
- virtual programme “Cosmos“, presented by Aare Baumer and Mario Mars (the latter of Tallinn University of Technology);
- tour to the art conservation department of KUMU, guided by Alar Nurkse;
- two additional workshops targeted at younger children (“Clay Laboratory” and “Trace”);
- laser-graffiti show, organised by media artists, with the introduction by Kaido Reivelt about the physical essence of the phenomenon presented.

The Science Centre AHHA organised various events in Tartu and the national television channel ETV broadcasted a live programme from one of the sites.

# ACADEMY MEDALS, AWARDS, SCHOLARSHIPS

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## MEDAL OF THE ACADEMY

In 2007, the Medal of the Estonian Academy of Sciences for contribution towards the Academy was awarded to

Member of Academy *Arvo Krikmann*

Member of Academy *Haldur Õim*

Member of Academy *Ilmar Koppel*

Member of Academy *Agu Laisk* and

Foreign Member of the Academy *Endel Tulving*

## MEMORIAL MEDALS OF THE ACADEMY

The tradition of memorial medals of the Academy was started in 2004, when the first Karl Schlossmann medal was conferred for outstanding achievements in medicine and related areas. The first Paul Ariste medal (in the humanities and social sciences) and the first Nikolai Alumäe medal (in informatics and engineering) were conferred in 2005.

The Wilhelm Ostwald medal was established in 2006 to acknowledge Estonian scientists for outstanding achievements in chemistry and related areas.

The Karl Ernst von Baer medal of the Estonian Academy of Sciences was instituted in 2006. It is conferred as the highest token of recognition to an Estonian scientist, who has outstanding achievements in specialities of life sciences and geographical sciences.

In 2007, it was decided to confer Karl Ernst von Baer medal, designed by the metal artist Margus Kadarik, on Member of Academy *Loit Reintam*; the medal was handed over at annual meeting of the Academy.





## **BERNHARD SCHMIDT MEMORIAL PRIZE**

The Bernhard Schmidt memorial prize of the Estonian Academy of Sciences was instituted in 2001 with the aim of highlighting the achievements of young scientists and engineers working in the sphere of development, and in implementation of results of fundamental research. The award is conferred on the basis of public competition once in two years.

In 2007, the Board of Estonian Academy of Sciences nominated, on the basis of decision of Appraisal Committee (Chairman Hillar Aben, members Ilmar Koppel, Rein Küttner and Peeter Saari) the Bernhard Schmidt memorial award for implementations of research and development work in Estonian economy to



*Jaan Raik,*  
Ph.D. in Engineering, Tallinn  
University of Technology

for his work “Microelectronics Test Software Turbo Tester”.

## **LETTER OF APPRECIATION OF THE ACADEMY**

In 2007 the Letter of Appreciation of the Estonian Academy of Sciences was conferred to

Member of Academy *Mihkel Veiderma*  
for his long-term outstanding work as Chairman of the Energy Council of the Estonian Academy of Sciences.

## **SCHOLARSHIPS OF THE ACADEMY**

In 2007 the Estonian Academy of Sciences assigned four scholarships by way of public competition for completion of monographic research works and popular science books to the following scientists:

*Sabine Brauckmann* (Dr. Phil., Visiting Professor of Estonian University of Life Sciences) – 25 000 kroons, for completion of the monograph “The Organismic System”, delivery of the manuscript has been delayed until

2008 pursuant to problems related to the publisher (Pittsburgh University Press).

*Maido Rahula* (D.Sc. in physics and mathematics, Prof. Emer. of the University of Tartu) – 25 000 kroons, for preparation for printing of the monograph “Puutujastruktuurid, vektorväljad ja liikumised” (Tangent structures, vector fields and movements). The scholarship has been used for conversion of the text block into LaTeX format, preparation of figures, purchase of technical equipment; copies of the first printout have been delivered to co-authors Gh. Atanasiu, N. Brinzei, V. Balan for final examination, an agreement with a Moscow publisher LKI has been signed, the book is planned to appear in print within 2008. In 2007 another title by Gh. Atanasiu and M. Rahula “Teist järku diferentsiaalgeomeetria uusi aspekte. Seostuste teooria juurde” (New aspects of second-order differential geometry. Complementary to the theory of coherence) was published as a separate edition.

*Kai Rünk* (Ph.D., researcher of the University of Tartu) – 25 000 kroons for completion of the manuscript and preparation for printing of the popular science book “Eesti sõnajalad” (Estonian ferns Pteridophyta); for the most part the text has been completed, it is planned to take photos of the currently missing 13 plant species. The book is intended to appear in print in 2009.

*Maie Tuulik* (Doctor in pedagogical sciences) – 25 000 kroon for completion of the popular science monograph “Peeter Põld”. The book appeared in print in 2007.

## **STUDENT RESEARCH PAPER PRIZES**

On 21 May, 2007 the Board of the Estonian Academy of Sciences announced a contest for the prize of the best student research papers. 38 papers were received by the Academy within the established deadline, 16 of them were Master’s level theses and 18 Bachelor level theses, 2 articles, 1 pro-seminar work and 1 upgraded Master thesis drawn as a contest paper. By specialities the works distributed among the following areas: 11 social sciences and the humanities, 16 natural sciences, 10 exact sciences and 1 economics. 14 papers were presented from the University of Tartu, 9 from Tallinn University and 11 from Tallinn University of Technology. Represented with one work were Estonian University of Life Sciences, Estonian Business School, Imperial College London and The University of Nottingham.

The papers were examined by the Appraisal Committee of the Academy including: Members of Academy Georg Liidja (Chair), Arvo Krikmann, Udo Margna and Enn Tõugu (the latter did not participate in appraisal of the paper of his supervision). Outside experts too were involved in the appraisal pro-

cess. The Committee decided at its session on 26 October to award eight first prizes of 5000 kroon and ten second prizes of 3500 kroon.

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

*Riina Maigre* (Tallinn University of Technology) Master's thesis "Web-services composition software with visual user interface" (supervised by Member of Academy Enn Tõugu);

*Ave Mets* (University of Tartu) Master's thesis "Philosophical analysis and treatment of laws of nature in Ilya Prigogine's book "End of certainty. Time, chaos and new laws of nature"" (supervised by Prof. Rein Vihalemm, Dr. Piret Kuusk);

*Liina Saar* (University of Tartu) Master's thesis "Link of richness in species of plant community and yield, and the mechanisms providing it – experiment in mesophyte grassland" (in English, supervised by Prof. Martin Zobel);

*Anu Sang* (University of Tartu) Master's thesis "Impact on mobility of *Parnassius mnemosyne*, Lepidoptera: Papilionidae of density of feed plant of larvae and cohesion of landscape" (in English, supervised by Dr. Tiit Teder);

*Pavel Starkov* (Imperial College London) research paper "Analysis of deacetylases of hystone by the method of chemical genetics" (in English, supervised by Prof. Alan Armstrong, Prof. Eric W Lam, Dr. David J Mann);

*Andres Toom* (Tallinn University of Technology) Master's thesis „Automatic code-generating from Stateflow models" (in English, supervised by Prof. Tarmo Uustalu, Manager for Development of IB Krates OÜ Tõnu Näks);

*Merli Toom* (Tallinn University of Technology) Master's thesis "Some opportunities for activating the Estonian oil shale fluidized bed and pulverized fuel combustion ashes" (supervised by Senior Research Scientist Tiit Kaljuvee);

*Siim Trumm* (The University of Nottingham) research paper "Options for voting of members of European Parliament coming from the Baltic States and party politics in European Parliament" (in English, supervised by Dr. Torsten Selck).

Assessed as meriting the second prize were:

*Kristi Grünberg* (University of Tartu) Bachelor thesis "Soviet-discourse in the memory process of the beginning 21th C. in Estonia after the example of Andrus Kivirähk/Taago Tubin's staging "Blue waggon" (2003)" (supervised by Docent Ene Kõresaar);

*Anna Kon* (Tallinn University) Bachelor thesis "Types and functions of body language in Sarah Waters' novels *Tipping the Velvet* and *The Night Watch*" (in English, supervised by Dr. Julia Tofantšuk);

- Aleksei Lissitsin* (University of Tartu) Master's thesis "Approximation properties defined by numbers of operators" (in English, supervised by Prof. Eve Oja);
- Kärt Metsoja* (University of Tartu) Bachelor thesis "'Oh! You really needn't do that!' Giving gifts and communication networks in patient-doctor relations in Socialist and post-Socialist Estonia" (supervised by Docent Ene Kõresaar);
- Madis Paalo* (University of Tartu) contest paper "Preparation of oxide fibers doped with carbon nanotubes" (supervised by Docent Uno Mäeorg and Dr. Tanel Tätte);
- Jelena Passenko* (Tallinn University of Technology) Master's thesis "Check on validity in Gulf of Finland of hydrostatic and non-hydrostatic version of model of hydrodynamic MIKE 3 applied to the Baltic Sea" (in English, supervised by Dr. Gennadi Lessin);
- Margit Pärn* (Tallinn University) Master's thesis "Drug usage problem of Estonian school students" (supervised by Docent Ene Lausvee);
- Tõnis Relvik* (University of Tartu) Bachelor thesis "Wind-created resuspension and its impact on heterotrophic bacteria in large shallow lakes" (supervised by Dr. Veljo Kisand);
- Tauri Tuvikene* (University of Tartu) Bachelor thesis "Garages and parking lots in the city of Tartu" (supervised by Prof. Rein Ahas and Lecturer Taavi Pae);
- Margit Vallikivi* (Tallinn University of Technology) Bachelor thesis "Impact of power field on propagation of deformation waves" (in English, supervised by Prof. Andrus Salupere).

Research prizes together with corresponding diplomas were handed over at the Conference for the winners of contest of student papers on 13 November, hearing out the papers of four prize winners.

## **PRIZE FOR POPULARISATION OF ESTONIAN SCIENCE**

In 2007 the prize for popularisation of Estonian science was conferred for the second time, as a joint prize of the Estonian Academy of Sciences, the Archimedes Foundation and Ministry of Education and Research. The aim of competition for prize is to highlight popularisation of science, to spur the activities presenting research to public and to bestow recognition for outstanding work on individuals and teams, who have been successful in popularising science, scientific knowledge and researcher's profession, in raising understanding of science by wider public, in efficiently attracting young people to research activities and to the profession of scientist.

The Appraisal Board included Member of Academy Georg Liidja (Chair), Member of Academy Ene Ergma, Member of Riigikogu and media expert Hannes Rumm, Counsellor to Ministry of Education and Research Sirje Kivi, Member of Board of the Archimedes Foundation Ülle Must, Director of the School of Research of the University of Tartu Viire Sepp and representative of the Estonian Academy for the Young Researchers Dimitri Teperik.

In 2007, the following prizes of popularisation of science were awarded. Two first prizes were merited by OÜ Haridusmeedia ETV for the series of programme BioNina and by Prof. Emer. Leo Võhandu of Tallinn University of Technology for long activity in popularising mathematical and informatics sciences.

The second prize was assigned to Ivar Puura, Tõnu Meidla, Oive Tinn and Heikki Bauert for the project “Evolution and fossils in word and picture” and to Professor of the Institute of Physics of Tallinn University of Technology Jüri Krustok for long successful activity in popularisation of science.

The third prize was won by five projects: Rein Pullerits, Uno Mäeorg, Natalia Nekrassova for successful implementation of Estonian and international chemistry olympiads in popularisation of science, the Energy Centre (Tallinn Technology and Science Centre) for events held in 2006, Aivar Leito and the team of authors for Crane Books in Estonian and English, the Scientific Centre AHHA for organising in Estonia the all-European Researchers’ Night (22 September), the Centre for Mediaeval Studies of Tallinn University jointly with ETV for popular science activities in 2006.

Special issue “Estonian Science Foundation 15” of the journal “Horisont” was recognised by Letter of Appreciation, so was the editor of modern sciences Rein Veskimäe for the collection “Ever persistent score. Estonian scientists on the horizon”.

There were 28 researchers and teams participating at competition, who have issued books for popularising science, made films, telecasts, series of events and exhibitions and have written series of articles.

In 2007, the prize fund of the competition was 160 000 kroon. The winners of the first prize were handed over 40 000 kroon. The size of the second prize was 15 000 kroon and the third prize 10 000 kroon.

Prizes were handed over in the Estonian Academy of Sciences Hall on 26 April 2007.

## **PUBLICATIONS OF THE ACADEMY**

Published by the Academy in 2007 were:

- “Estonian Academy of Sciences Year Book XII (39)” in Estonian\* and English\*;
- The eleventh book in the series “National Science Prizes”, providing an overview of the prize-winning scientists in 2007 and their research papers;
- A book in the series “Scientific Thinking in Estonia (IV). Engineering (II)”\* (in Estonian).  
This collection is follow-up to the volume “Scientific Thinking in Estonia. Engineering” published in 2002, which in principle surveys developments in the field of engineering research in Estonia in 2002–2006. When selecting articles, it was the goal of the editors to present the most outstanding achievements of Estonian research scientists in engineering, to provide a synopsis of new developments in the area and to contribute to solving the tasks confronting the R&D system.
- A book in the series of policy analysis “The State of Merchants”\*.  
This opening book in the series of policy analysis in the Estonian Academy of Sciences expands upon economical specialisation of Estonia in the Baltic Sea region, the operational strategies of companies and development needs in critical sectors of the Estonian economy.

Scientific journals see p. 84.

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

## **INTERNATIONAL SCIENTIFIC RELATIONS**

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Estonian Academy of Sciences represents Estonia in several international organisations that bring together science community on issues that cross specialities, at the level of top researchers and science policy makers. In 2007 the Academy was actively involved with the following institutions.

Vice-President of the Estonian Academy of Sciences Jüri Engelbrecht is heading, as President the European Federation of National Academies of Sciences and Humanities “ALL European Academies”. In 2007 he concentrated on elaboration of the action strategy of ALLEA against the background of European and world science organisations (EASAC, ESF, EUA, IAP, ICSU etc.), incl. on achievement of better partnership with those organisations. Through ALLEA the Academy has an opportunity to make statements with more power and authority in wider science strategy issues– for instance ALLEA brought together the opinions of academies on European science policy (Reflections of ALLEA on the EC Green Paper 2007), as representative of ALLEA J. Engelbrecht also participates in governing bodies of EASAC and ESF.

European Academies’ of Science Advisory Council (EASAC) is constituted by authorised individual members of the academies, of whom from Estonia comes Secretary General of the Academy Leo Mõtus. L. Mõtus attended the meetings of the Council and participated in the energy working group. Experts nominated by the Academy were active in two more working groups: senior research scientist Tanel Tenson of the University of Tartu in WG on Antimicrobial Resistance (working group made public its report in June 2007) and Mihkel Veiderma, Member of Board of the Academy (until spring 2007 Chairman of Energy Council) and Professor of Tallinn University of Technology Andres Siirde in WG on EU Oil Shale Industry. M. Veiderma gave in April an overview about the report of the latter working group titled “Oil shale industry of the European Union in the light of Estonian experience” at an extended meeting of the Commission of Industry, Scientific Research and Energy of the European Commission in Brussels. The final version of the report was made public in August 2007.

The Academy participates in the European Science Foundation (ESF) together with the Estonian Science Foundation. Payment of the membership fee takes place through the Academy, funding of participation in programmes through Estonian Science Foundation. Representatives of the Academy and Estonian Science Foundation, commonly appointed, act both in the Governing Council and the Standing Scientific Committees. In the year 2007 Estonian scientists participated in 15 ESF Research Networking Programmes; the Estonian Science Foundation has joined several EUROCORES (“European Collaborative

Research”) programmes in various stages of development, incl. two of them (TOPO-EUROPE and FANAS) in 2007.

The European member organisations of International Council for Science (ICSU) hold annual conferences, which have already become traditional. The meeting of that year, attended by Vice-President Ain-Elmar Kaasik, was held in October in Bern with the main aim of co-ordinating the opinions, proposals and interests, in order to make possible to European academies – against the background of handling the problems of developing countries as the priority of the ICSU – the optimum output at the next General Assembly of ICSU (2008).

Union Académique Internationale (UAI), uniting the academies concerned with the so-called “soft” sciences and focusing in its activity mainly on the humanities, held its 81st annual meeting in June in Oslo. The General Assembly elected the delegate of the Academy, Head of the Division of the Humanities and Social Sciences Peeter Tulviste member of the UAI Bureau. Upon invitation of P. Tulviste, the Steering Committee of the UAI held in September its field session in Tallinn, in the Estonian Academy of Sciences.

Academy continued supporting contacts of Estonian scientific community with international scientific unions, giving preference to member organisations of the ICSU. The Academy organised the payment of membership fees with the help of a targeted allocation from the Ministry of Education and Research, whereas increasing of the targeted allocation made it possible to expand the target groups in 2007, and supplied the Ministry with a review on the activities of respective national committees (see the list in Appendix 1 p. 157). National committees disseminated information materials obtained from the original sources, attended scientific forums of scientific unions and organised them in Estonia within international series of events; participated in working groups, networks, research projects; recommended and nominated Estonian researchers in the steering bodies of scientific unions (as well as expert panels, as candidates for prize winners etc.).

In order to obtain a better overview of the representation of Estonian science in international science organisations, incl. the doings of national committees inside Estonia and directed outside, and to promote discussion with interested parties, the Academy organised in October a brief conference “Estonian science and international science organisations – experience and trends” (in more detail see p. 32).

In common with many European academies, the Estonian Academy of Sciences supports and finances international mobility of researchers through a scientific exchange programme. Bilateral co-operation agreements (full list of partners is presented in Appendix 2 p. 159) serve as the formal basis for the exchange of scientists. In 2007 the co-operation agreements were renovated (a new protocol was signed) with the Bulgarian, Latvian and Lithuanian Academies of Sciences. A new agreement was also signed with the Academy of Finland, renouncing the so-called quota system and changing the procedures



of handling the applications for visits. The activity of the programme is supervised by the Council for International Exchanges, comprising representatives of the Divisions of the Academy and four main public universities – the University of Tartu, Tallinn University of Technology, Estonian University of Life Sciences and Tallinn University.

The Academy acts upon the traditional cost-sharing principle (the receiving party covers the living costs in the host country) and gives preference over individual research to reciprocal visits within bilaterally accepted joint projects. As a rule, the sending Academy selects the scientists, who are to be nominated to the receiving Academy for funding. The Estonian-Finnish exchange of scientists is an exception from that rule: a Finnish scientist has to apply to his Academy for the reception costs of his or her Estonian colleague (and contrariwise). In 2007 the Estonian scientists made 108 study and conference visits, using in total 936 days. At the same time 115 visiting researchers working in Estonian universities and research institutions in the total of 907 days were hosted by the Academy. To cover the living costs of the visiting scientists, 649.2 thousand kroon was expended. As ever, the University of Tartu is the most active inviting party of the guests and also the most active applicant for trips (share over 40%). Quantitative data as per partner by agreement have been presented in the following table.

The reception of visiting scientists kept on the comparative level, basing both on the previous years and taking into account the average of this century. Whereas the volume of outbound trips evidences a significant decrease (approximately by one third). Quite naturally, the opportunities for co-operation of Estonian scientists have become wider in the proximate past years and it is possible to apply for various mobility supports from different sources, which does not fail to impact on exchange of scientists between academies. On the other hand, it needs be taken into account that in the previous years the outbound trips to Finland constituted over one third of the total volume, however in 2007, i.e. after implementation of the new scheme of exchange of scientists, as little as 16.1%. The Academy of Finland has nevertheless remained the leading partner of the Estonian Academy of Sciences besides the Hungarian Academy of Sciences, to be followed by the Polish Academy of Sciences.

The Academy was traditionally visited by several delegations in 2007, the representatives of the Academy visited, in their turn the partner Academies and delivered, as invited speakers, papers at international conferences and meetings. For greater detail see Chronicle p. 7–15. The Academy supports direct contacts of young scientists with the top actors in the world of science – in 2007 the Academy sent the doctoral student of the University of Tartu Hendrik Luuk to participate at a joint conference of the Nobel Prize laureates and outstanding young researchers in Lindau (Germany).

Of particular note was participation of the delegation of the Academy at the 11th Baltic Conference on Intellectual Co-operation (Riga-Turaida, October).

Exchange of scientists upon co-operation agreements of  
the Estonian Academy of Sciences in 2007

Partner- organisation	Annual quota in days	Visiting scientists		Estonian scientists	
		Number of trips	Number of days	Number of trips	Number of days
Austrian Ac.Sci.	56	-	-	2	14
British Academy	90	1	9	2	28
Bulgarian Ac.Sci.	86	7	70	6	52
Flemish Ac.Sci.	28	-	-	2	27
Spanish Council for Sci. Research (CSIC)	98	2	32	4	24
Israel Ac.Sci.	28	1	8	2	14
Lithuanian Ac.Sci.	75	5	27	2	10
Latvian Ac.Sci.	75	17	64	17	61
Montenegro Ac.Sci.	21	-	-	-	-
Norwegian Ac.Sci.	84	-	-	3	30
Polish Ac.Sci.	100	14	105	12	89
French Ac.Sci.		-	-	2	8
Royal Swedish Ac.Lett.Hist.&Ant.	28	1	5	4	23
Slovak Ac.Sci.	35	6	40	-	-
Slovenian Ac.Sci.		3	26	3	27
Academy of Finland		24	177	7	151
Swiss Ac.Sci.	60	1	9	1	10
Czech Ac.Sci.	70	5	46	6	66
National Ac.Sci. of Ukraine	50	6	82	2	24
Hungarian Ac.Sci.	203	15	139	25	190
National Ac.Sci. of Belarus	30	2	22	1	11
Russian Ac.Sci.	75	5	46	5	77
<b>TOTAL</b>	<b>1292</b>	<b>115</b>	<b>907</b>	<b>108</b>	<b>936</b>

The tradition of Conferences started between two world wars was invigorated again by the Latvian Academy of Sciences in 1999. After being held in Tallinn, Vilnius and Helsinki, the round of organisation of that Conference again arrived in Riga in 2007. Traditionally, co-operation medals of the three Baltic Academies were handed over. Professor Emeritus of Tallinn University Raimo Pullat earned this recognition by supervising the Estonian-Latvian common work in preparation for printing of the commented volume of Johann Christoph Brotze "Estonica". President of the Estonian Academy of Sciences Richard Villems delivered a scientific paper "Haploid genomics: revolution in spatial and temporal reconstruction of the peopling of world by modern humans". After lecture he was handed over the Diploma of the Foreign Mem-

ber of the Latvian Academy of Sciences. Member of Board Rein Küttner presented the strategy of Estonian R&D activity and innovation for 2007–2013.

Estonia is a natural part of European Research Area. In those conditions, inevitably, the accent transmits to co-operation with scientific institutions of the European Union and to active participation in the EU structures. For instance, Vice-President Jüri Engelbrecht belonged among members of the European Research Advisory Board (EURAB) and participated in the EURAB's working groups. As a follow-up to his involvement in the working group preparing the creation of European Research Council (ERC), J. Engelbrecht organised an international seminar "Ideas of the ERC and Excellence in Research" in the Academy in May (in greater detail see p. 34).

In 2007, the Estonian Academy of Sciences took directly part in the projects of three European Union framework programmes of R&D activity.

Upon authorisation of Ministry of Education and Research, the Academy participated as partner in the 6th FP project "Complexity-NET" ("Coordination of National Complexity Research and Training Activities") initiated for coordination of complexity research and respective training programmes and their reciprocal opening. The Project was co-ordinated by Engineering and Physical Sciences Research Council of UK (EPSRC), with altogether 11 countries participating (UK, Belgium, Denmark, Estonia, Greece, Hungary, Ireland, Italy, Holland, Portugal and Spain) and two more observing (France and Germany). Work was started as early as in 2006, the Academy was represented in the project by J. Engelbrecht and L. Mõtus. By now, the partners have made it to mapping and generalising the complexity research on the European level; pending is elaboration of the common activity strategy.

Estonian Academy of Sciences participated as partner in the 7th FP project "Researchers' Night 2007", oriented at popularisation of the profession of scientist. For more detail see p. 40.

Since 2004, the Academy has belonged to the European Network of Mobility Centres ERA-MORE. The Mobility Centres advise researchers moving to another country, including those proceeding to work or to embark on a doctoral programme, on administrative and practical issues. The Archimedes Foundation co-ordinates the Estonian network activities. The national network activities (publication of reference materials, trainings and information days, conferences etc.) were co-funded up to April 2007, as project-based by the European Commission (EC). Presently the EC organises to members of network on the European level the training events and conferences, as well as the activity of working groups, also attended by officers of international service of the Academy.

# NATIONAL AWARDS TO MEMBERS OF THE ACADEMY

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## NATIONAL SCIENCE PRIZE

Awarded by the Ordinance of the Government of the Republic of Estonia, upon proposition by the Commission for National Science Prizes, No: 85 of 19th February 2007

SCIENCE PRIZE FOR OUTSTANDING DISCOVERY AFFECTING THE  
PARADIGM OF A BRANCH OF KNOWLEDGE AND THE WORLD-VIEW

to collective research work on the topic “Discovery of dark matter surrounding the galaxies and the honeycomb structure of the Universe”:



On the left *Jaan Einasto* (head of collective), *Maret Einasto*, *Enn Saar*, *Erik Tago* (photo taken on 24 February 2007 at handing over the national prizes).

“... in the second half of the 20th C. the views on buildup of the Universe evidenced several paradigm shifts: the cosmic background radiation and its vascillations were discovered (both works have merited the Nobel Prize); it was discovered that the bulk of the matter of Universe is not constituted by ordinary baryon matter, but by dark matter of hitherto unknown origin; it was found that galaxies are not randomly distributed in the space, they constitute

long chains, which are arranged in super-clusters, and the space between them is empty (honeycomb structure of the Universe). In two last changes of paradigm, the astronomers of Tartu headed by Jaan Einasto played a leading role, being the first presenting the arguments regarding the new paradigms ...”

Science prizes of the Republic of Estonia, 2007, p.8.

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

Awarded by Resolution of the President of the Republic No: 94, of 7 February 2006

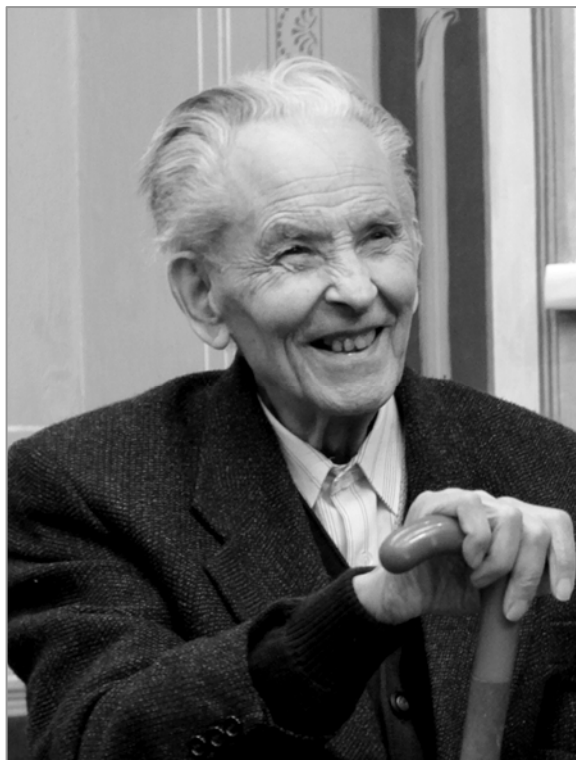
Order of the National Coat of Arms, 3rd Class

Member of Academy *Jüri Engelbrecht*

## ANNIVERSARIES

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Member of Academy *Harald Keres*

Harald Keres was born on 15 November 1912 in Pärnu to an artisan's family.

In 1932 he graduated from the Boys' Gymnasium of Pärnu and in 1936, *cum laude* from the Department of Mathematics of the University of Tartu. In 1938 Harald Keres was awarded the Master's degree in Mathematics and in 1942 the Ph.D. degree. He had to defend his Doctorate for the second time in 1947 and obtained the Doctor of Sciences degree in Physics and Mathematics, and in 1954 the Professorship in theoretical physics.

After graduating from the University of Tartu Harald Keres started his teaching career at the University. He was a junior associate lecturer in mathematics and an acting docent in mathematics.

After the complicated years of the war he headed the Department of Theoretical Physics and held the office of Vice-Rector for Research in 1958–1960.

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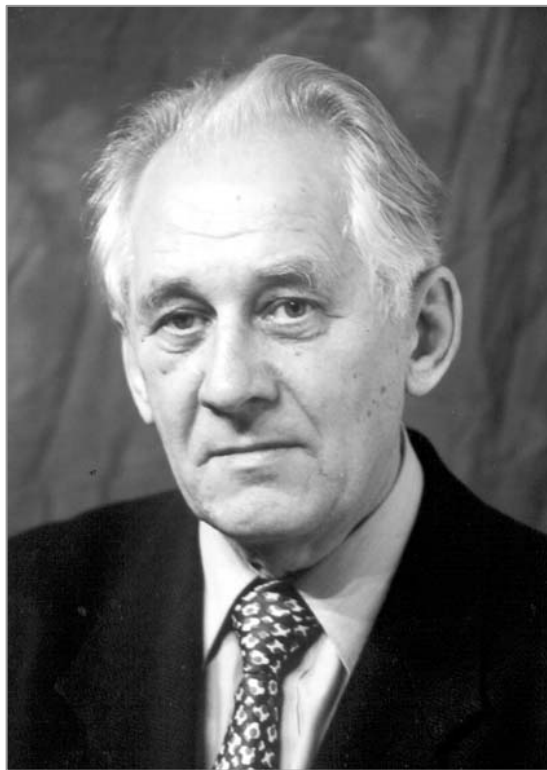
Simultaneously with his academic career at the University Harald Keres worked as Head of the Observatory of the Institute of Physics and Astronomy of the Estonian Academy of Sciences and until his retirement in 1989, as Head of Laboratory of Theoretical Physics of the Institute of Physics. Since 2000 he has been Professor Emeritus of the University of Tartu.

In 1961 Harald Keres was elected Member of the Estonian Academy of Sciences in theoretical physics.

In his research, Harald Keres focused on developments in general relativity and gravitation theory. He became founder of the theory of relativity research direction. He has authored over thirty scientific publications. He has been notably efficient in the area of publicistics, presenting and popularising science as an integral part of national culture.

Harald Keres has been assigned the national science prize and he has been awarded 3rd Class Order of the National Coat of Arms. He has been elected Honorary Citizen of the city of Tartu and in 2005 he was awarded the Lifetime Achievements Gratitude Award of the Estonian National Culture Foundation.

Harald Keres has also been keen on music, his favoured instruments are the flute and the piano.



Member of Academy *Raimund Hagelberg*

Raimund Hagelberg was born on 7 February 1927 in Tallinn.

He graduated from Tallinn Secondary Science School in 1946 and enrolled in the Economics Department of Tallinn University of Technology. His graduation in 1950 was followed by the post-graduate programme at the same University.

He dedicated his candidate's work "Role of credit in development of collective farm production" (1954) and the doctoral thesis "Bases of economic analysis of work of agricultural enterprises" (1968) to the problem range of banking and economical analysis. Such choice turned out especially advantageous in reinstatement of the Bank of Estonia and in taking the kroon anew into use, in the process of which he contributed to all major steps made.

In 1953–1954 Raimund Hagelberg worked as a junior researcher in the Estonian Academy of Sciences, at the Institute of Economics, thereafter from 1954–1982 at Economics Department of the University of Tartu, as senior lecturer, Docent, Head of Department and Professor. From 1982–1989 he held



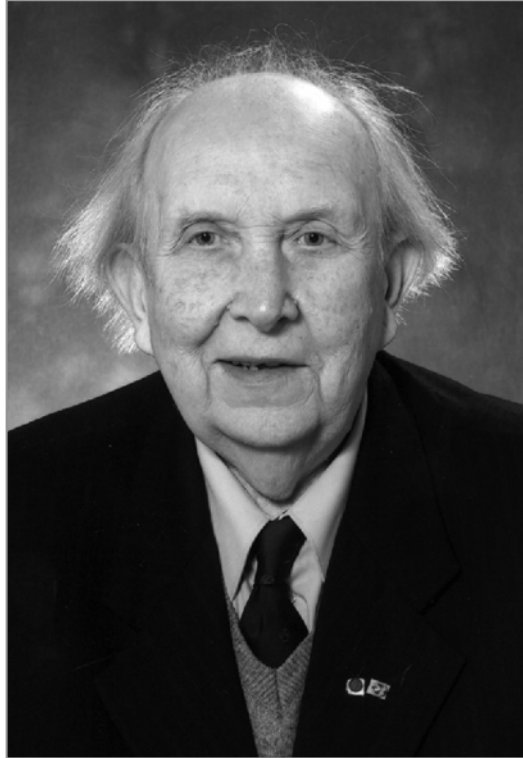
the post of Scientific Secretary General of the Academy. In 1989-1992 he was Counsellor to Chairman of Supreme Council of the Republic of Estonia. In 1990, Raimund Hagelberg was elected member of Council of the newly reestablished Bank of Estonia. He held that position until 1998, whereafter he became Counsellor to the Bank of Estonia. He has been working there as supernumerary Counsellor until now.

Since 1995 Raimund Hagelberg has been Professor Emeritus of the University of Tartu.

In 2000 he was awarded 3rd Class Order of the National Coat of Arms.

The main directions of research of Raimund Hagelberg have been methodology of economic analysis of enterprises, theory of finance, finance of enterprises, financial management of education, science and higher school, general theory of economy, banking and credit. However he considers of no lesser importance his teaching effort in the University of Tartu.

Raimund Hagelberg has integrated his few moments of leisure with nature and countryside, loving as he does to be in the peace of forest and to dip his finger in soil at his summer house in South Estonia.



Member of Academy *Valdek Kulbach*

Valdek Kulbach was born 6 April 1927 in the county of Virumaa, in the Joala village to a farmer's family.

In 1945 he graduated from Tallinn 10th Secondary School and in 1951 *cum laude* from Tallinn University of Technology, in the specialty of industrial and civil construction. He continued studies in post-graduate programme of Leningrad Polytechnic Institute, Department of Hydro-Engineering.

In 1955 Valdek Kulbach defended his Candidate in Engineering thesis and in 1973 Doctor in Engineering thesis at Tallinn University of Technology.

In 1948–1952 Valdek Kulbach worked in Eesti Projekt as engineer, senior engineer and head of the building team. Since 1955 his employment has been with Tallinn University of Technology, where he has been assistant lecturer, senior lecturer, Docent and Professor. In 1963–1975 he was Pro-Dean of Night Department and Dean of Distant Studies Department, in 1975–1990 Head of Department of Building Structures, in 1990–1998 Professor in Steel Structures of Buildings Design Institute, in 1994–1995 Dean of Building De-

partment. Since 1998 he has been Professor Emeritus at Chair of Steel Structures.

Valdek Kulbach was elected Member of the Estonian Academy of Sciences in 1986.

Main directions of research of Valdek Kulbach have been analysis of work of steel structures, filtration and slope stability problems, area of temperature stresses and problems of calculation of suspension structures. Developing the theory of bridge building and its practical solutions, he has participated in supervisory capacity in erecting railway, highway and pedestrian bridges in Tartu, Pärnu, Narva and elsewhere, as well as in building of the acoustic screen for song festival tribunes in Tallinn and Tartu. As a solution to permanent connection between Saaremaa and the mainland he built a model, by which in three years a 6.1 km long and up to 40 m high suspension bridge could be built over the Suur Sound.

Valdek Kulbach is member of several science organisations both in Estonia and abroad. He has supervised many master, candidate and doctoral works and has released over 140 scientific articles. He has authored two monographs and several textbooks.

His works brought him the Prize of Soviet Estonia in 1970 and the national science prize in 1995. In 1999 he was awarded 4th Class Order of the White Star.

In 2000 he was elected the Engineer of the Year.

Beside academic activities Valdek Kulbach considers building design and expert assessment of construction work as his favoured hobbies. He enjoys doing health sport in his leisure time and collecting stamps.



Member of Academy *Huno Rätsep*

Huno Rätsep was born 28 December 1927 in Tartu.

In 1946 he graduated from Treffner Gymnasium (then named Tartu I Secondary School) and enrolled in University of Tartu to study Fenno-Ugric languages. His graduation of the University in 1951 was followed by post-graduate programme and defence of the Candidate's thesis in 1954 on the topic "Infinite forms in Fenno-Ugric languages". In 1974 Huno Rätsep defended his Doctoral thesis, the extended version of which appeared in 1978 as monograph "Types of Simple Sentences of the Estonian Language". In 1980 that work merited the national prize.

Huno Rätsep was awarded Professorship in 1977.

Huno Rätsep's work on the faculty at Tartu University started in 1954 and was over forty years long, in nearly twenty of which he headed the Department of the Estonian language and in 1992–1993 was Professor Ordinary. Since 1994 Huno Rätsep has been Professor Emeritus of the University of Tartu.

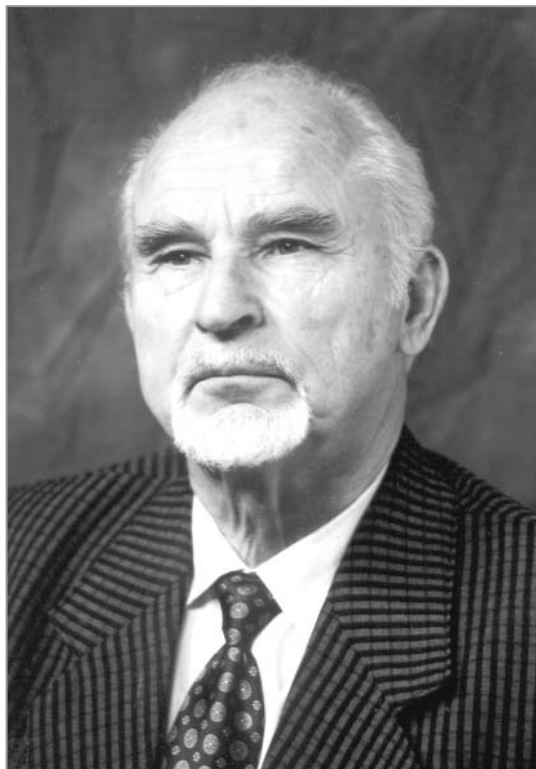
Through his years of teaching Huno Rätsep used to be, in the first place the historian of language and researcher of word stock. In his voluminous set of

lectures, the primary place was occupied over years by the basic course of history of the Estonian language, integrated with a special course in origin of word stock of the Estonian language and a special course in the Livonian language. In 1960s his lectures and seminars in the area of structural linguistics and other new directions in linguistics brought about a principled shift in the development of the Estonian linguistic thought. The team of researchers basing on generative grammar theory, set up upon initiative of Huno Rätsep has spawned a whole Pleiad of linguists – his pupils. That line of development has also given rise to research teams of computational linguistics of the University of Tartu and the working group of language technology. He has supervised a dozen theses and has delivered lectures on history of the Estonian language and syntax also in Finnish and Swedish universities.

In 1981 he was elected Member of the Estonian Academy of Sciences in the Estonian language.

As a researcher, Huno Rätsep has delved in studies of both the history of language and the modern language, he has written profoundly on syntax and word stock of the Estonian language, on history of study of the Estonian language, on etymology of words etc. He has authored over 120 scientific articles, two monographs and two higher school textbooks on historical morphology of the Estonian language. In 1980s Huno Rätsep led the whole Estonian language life as Chairman of the Estonian Mother Tongue Society and as Chairman of the National Orthology Commission. He belongs to the editorial board of the international journal "Linguistica Uralica" and in the Estonian Fenno-Ugric Committee and he is honorary member of the Estonian Mother Tongue Society and the Société Finno-Ougrienne seated in Helsinki. In 1998 Huno Rätsep was awarded the most reputed prize of the Estonian linguists – the F. J. Wiedemann language prize.

In 2001 Huno Rätsep was awarded 4th Class Order of the White Star.



Member of Academy *Karl Siilivask*

Karl Siilivask was born 20 January 1927 in the county of Võrumaa, parish of Veriora.

His studies at Võru Secondary School were broken up by the events of war and evacuation to Tšeljabinsk oblast. After return to Estonia in 1945 Karl Siilivask passed the graduation exams of secondary school and enrolled in the next year in Department of History of the University of Tartu. His graduation from University was followed by post-graduate programme and defence of the Candidate's thesis. In 1968 Karl Siilivask defended his Doctor's thesis on February and October Revolutions in Estonia.

Starting from 1954 Karl Siilivask worked for twenty years in the University of Tartu, including in 1969–1974 as Professor, in 1962–1974 as Head of Department, three periods also as Dean. He delivered the general course of Estonian history and specialist courses.

In 1974–1983 Karl Siilivask was Director of Institute of History of the Estonian Academy of Sciences, in 1984–1992 Head of Division of the Institute, in 1974–1992 part-time Professor at University of Tartu.

Starting from 2004 Karl Siilivask has been senior researcher of Estonian Union of the History and Philosophy of Science.

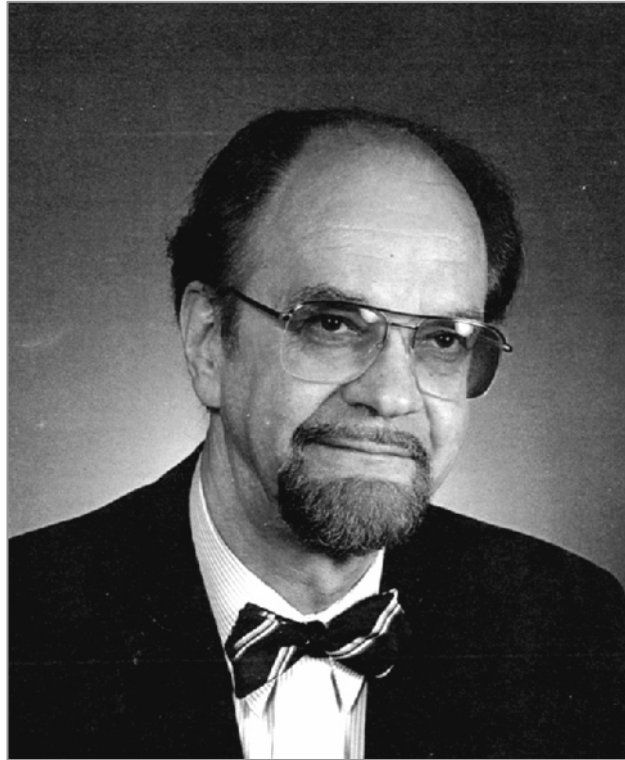
In 1977 he was elected Member of the Estonian Academy of Sciences in history.

In 1974–2004 Karl Siilivask was Chairman of Estonian Union of the History and Philosophy of Science, since 2004 member of board. In the period 1991–2003 he alternatively fulfilled the obligations of President and Vice-President of Baltic Association of the History and Philosophy of Science and has been since 2003 member of Board of Baltic Association of the History and Philosophy of Science.

His history of science related research work is reflected in serial volumes “Questions of history of the University of Tartu”, “Pages of history of science of Estonia” and “History of science and the present day” and since 1977 in materials of conferences of history of science of the Baltics (since 1997 “Historiae Scientarum Baltica”). Beneficial co-operation of a team of authors resulted in completion of “Biographical Lexicon of Estonian Science”.

After the Baltic States regained independence, Karl Siilivask was concerned with presentation of development of science of Estonia and other Baltic States and laying down international contacts, in 1992 he participated in organisation of the I Symposium of History of Science of the Baltic States and Nordic countries in Tallinn and Tartu and prepared joining of Baltic Association of the History and Philosophy of Science to International Union of History and Philosophy of Science in 1993. Karl Siilivask has published over 200 scientific articles. He is author or co-author of over 10 monographs.

Among other hobbies of the jubilarian special mention should be made of physical fitness areas: athletics, tennis, skiing (he has also participated in Tartu-Kääriku ski marathon).



Foreign Member of Academy *Endel Tulving*

Endel Tulving was born on 26 May 1927 in Petseri to a jurist's family.

His studies at Treffner Gymnasium were broken up due to war events, his educational path as an expatriate continued in Germany at Geislingen Estonian Gymnasium. In 1949, after emigration to Canada, he enrolled at Toronto University, in order to major in psychology. His studies continued in Harvard University, where Endel Tulving was awarded the degree of Doctor in 1957. A year earlier he started pedagogical work as lecturer in Toronto University and in 1965 was elected Professor Ordinary in Psychology. During five years (1970–1975) Endel Tulving held in parallel another office of Professor in Yale University. His academic career also contained six years of work as Dean of Department of Psychology of Toronto University and editing of the *Journal of Verbal Learning and Verbal Behavior* to evolve into one of the most influential psychology journals in the world. In 1985 Endel Tulving was elected Toronto University university professor, a token of recognition bestowed on very few. Since 1992 he has been Professor Emeritus of Toronto University and has continued research at Rotman Research Institute as Head of Department of Neuropsychology of Perceptive Processes. Every year Pro-



fessor Tulving sojourns a couple of months as visiting professor at Washington University and several weeks in Tallinn. In 1997, Tallinn was transformed into the capital of memory study, for the period of conference on memory psychology, held under organisation of Endel Tulving. He is Doctor Honoris Causa of the University of Tartu and founder of the University of Tartu Toronto Foundation.

Discoveries of Endel Tulving have dramatically changed the concept of human memory. The key words marking the areas of his research are episodic memory, specificity of coding, priming, HERA and cronesthesia. Professor Tulving pioneered in 1960s the research of revitalising recollections and recovery thereby of information from the memory. He has made distinction between at least two memory systems: episodic memory helps retain in memory the personally experienced events, while semantic (meaningful) memory retains facts and knowledge about the world. He also described the type of memory, currently known under the name of priming, the memory not rendered conscious. Pursuant to supposition of Endel Tulving, the human culture is unique in that it possesses the autobiographic memory – cronesthesia, presupposing the ability to perceive time and consciousness of time.

Endel Tulving has released over 200 scientific articles and several books. He is foreign member of academies of the USA, Sweden, and Europe, member of royal associations of Canada and London, Doctor Honoris Causa of many universities, among others the University of Tartu, Foreign Member of Estonian Academy of Sciences since 2002.

The list of academic recognitions of Endel Tulving is imposingly long. He has been considered worthy of Howard Crosby Warren medal (1982), Prize of Association of American Psychologists for outstanding achievements in science (1983), Golden Medal of Americal Psychological Society (1994), Gairdner Prize (2005) etc. In 2000 he was awarded 2nd Class Order of the White Star.

Endel Tulving is the best known and the most often cited scientist of Estonian descent, who has significantly changed and formed the present day countenance of psychology. He is a witty and genial person, whose strength lies in simplicity.



Member of Academy *Hans Kiiits*

Hans Kiiits was born 20 December 1932 in the county of Põlvamaa, parish of Mooste to a peasant household.

In 1951 he finished Tartu I Secondary School and in 1956 *cum laude* the Department of Agronomy of Estonian Agricultural University. Thereafter he worked until 1958 as agronomist of the collective farm in Erumäe, near Elva.

In 1958, Hans Kiiits was invited to Jõgeva Plant Breeding Station as junior researcher in barley breeding. In 1964 he became head of Breeding Department and in 1973 Director of Plant Breeding Station (starting from 1992 Jõgeva Plant Breeding Institute), holding that position until 1998.

In 1968 Hans Kiiits defended his thesis of Candidate in Agriculture on the topic “The best Estonian barley sorts and the impact of nitrogen fertilisers on their yield and quality”. He worked on probation in 1968–1970 with Svalöf Plant Breeding Institute in Sweden, obtaining excellent theoretical and practical training in barley breeding and many valuable contacts. The work of Hans Kiiits has been breeding of new barley sorts and growing the seed, and development of sort agrotechnology. He is the main author of seven sorts of

barley and co-author of five oats and two wheat sorts. In 1987 he was awarded the national plant breeding prize.

In 1992–1995 Hans K  its was Head – Professor of Plant Breeding Department of Estonian Agricultural University, thereafter Professor Emeritus. In 1994 Hans K  its was elected Member of the Estonian Academy of Sciences in agricultural sciences. In 1997 he was awarded 5th Class Order of the National Coat of Arms.

Member of Academy Hans K  its is an inveterate agriculturist and definitely proud of it. He has been successful both as scientist and director. Presently he is working as senior researcher at J  geva Plant Breeding Institute, passing his leisure on Lake Peipus fishing.



Foreign Member of Academy *Indrek Martinson*

Indrek Martinson was born on 26 December 1937 in Tartu.

As a six year old boy, he landed together with his family in the turmoil of war in Germany, where his school path started, which continued after settling in Sweden, in Stockholm Estonian grade school, in Brännkyrka science school and gymnasium. In 1957, Indrek Martinson started studies in Stockholm University, majoring in English, thereafter he studied one year mathematics and another year physics. Having worked some time as teacher in physics in Estonian Night Gymnasium, he proceeded to work on faculty in Stockholm Royal Institute of Technology as lecturer. Besides work he continued studying in Stockholm University, where he was awarded Licentiate in nuclear physics in 1967. After specialist self-improvement as visiting scientist in the USA Arizona University, he continued service since 1970 as researcher-physicist in Stockholm Institute of Physics. In 1971 he was awarded the degree of Doctor in atomic physics. In 1975 Indrek Martinson was elected Professor of Lund University and he has been working at the same place since 2003 as Professor Emeritus. Since 1986 he has been Member of the Swedish Royal Academy of Sciences, entitled like all other members of the Swedish Academy, to participate in nomination of the Nobel Prize.

Indrek Martinson is a scientist of world stature in the area of atomic spectroscopy, whose main concern is related to experimental study of highly ionised atoms. He is also a recognised specialist in synchrotron spectroscopy of atoms and crystals. He has released over 160 scientific articles in pre-reviewed physical journals and he has been supervisor to many future doctors of science.

In 1998 Indrek Martinson was elected Foreign Member of the Estonian Academy of Sciences in physics. He is Doctor Honoris Causa of the University of Tartu, Foreign Member of Lithuanian Academy of Sciences, member of American Physical Union and American Optical Union as well as numerous scientific councils.

Since 1989, Indrek Martinson has helped the Estonian physicists to find access to and achieve resonance in world science. He has done that in the first place through research done in the framework of co-operation agreement on emitter of synchrotron radiation of Lund University MAX-laboratory and through organisation of studies in Doctoral programme. He is Chairman of South-Sweden Division of Estonian Learned Society in Sweden and long-term member of many expatriate Estonian organisations.

Indrek Martinson has been keenly interested in literature, history and classical music, which he developed already in his years in University; out of the areas of sports he prefers athletics, orienting and chess.

In 2001 Indrek Martinson was awarded 4th Class Order of the White Star.

More anniversaries in 2007:

65th anniversary

22 January Member of Academy *Haldur Õim*

20 June Foreign Member of Academy *Jaan Laane*

4 November Member of Academy *Olav Aarna*

50th anniversary

5 April Member of Academy *Jaan Ross*

## MEMBERS OF THE ACADEMY

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As of February, 2008\*

**Olav AARNA**, born 4.11.1942, elected 1990, informatics. Tallinn University of Technology 1965. Lecturer, Professor, Estonian Business School (2007); Lauteri 3, 10114 Tallinn ESTONIA, Tel: +372 665 1385, Fax: + 372 665 1339, E-mail: olav.aarna@ebs.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. Minister, Ministry of Defence (2007); Sakala 1, 15094 Tallinn ESTONIA, Tel: +372 717 0010, Fax: +372 717 0001, jaak.aaviksoo@kmin.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 University of Technology 1953. Head of the Laboratory of Photoelasticity, Institute of Cybernetics at Tallinn University of Technology (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.

**Jaan EINASTO**, born 23.02.1929, elected 1981, astrophysics. University of Tartu 1952. Senior Researcher, Department of Cosmology, Tartu Observatory (2004); 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0110, Fax: +372 7 410 205, E-mail: einasto@aai.ee. HOME ADDRESS Observatooriumi 6-3, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0151. Widower, a son and two daughters.

**Jüri ENGELBRECHT**, born 1.08.1939, elected 1990, mechanics. Tallinn University of Technology 1962. Vice-President, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 2013, Fax: +372 645 1805, E-mail: J.Engelbrecht@akadeemia.ee. HOME ADDRESS Trummi 34J, 12617 Tallinn ESTONIA, Tel: +372 672 6045. Married, a son and a daughter.

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\* Organisations are presented according to their current names.

**Ene ERGMA**, born 29.02.1944, elected 1997, exact sciences. Moscow University 1969. President, Riigikogu (Parliament) (2007), Lossi plats 1a, 15165 Tallinn ESTONIA, Tel: +372 631 6301, Fax: +372 631 6304, E-mail: ene.ergma@riigikogu.ee. HOME ADDRESS Ropka 15A-11, 50111 Tartu ESTONIA, Tel: +372 738 1874. Single.

**Raimund HAGELBERG**, born 7.02.1927, elected 1981, economics. Tallinn University of Technology 1950. Professor emeritus, University of Tartu (1995). HOME ADDRESS Uus-Tatari 16-39, 10134 Tallinn ESTONIA, Tel: +372 646 1253, E-mail: hage@hot.ee. Widower, a daughter.

**Vladimir HIZHNYAKOV**, born 25.05.1938, elected 1977, physics. University of Tartu 1960. Senior Researcher, Institute of Physics at University of Tartu (2004); Riia 142, 51014 Tartu ESTONIA, Tel: +372 738 3017, Tel/Fax: +372 737 5570, Fax: +372 738 3033, E-mail: hizh@fi.tartu.ee. HOME ADDRESS Aardla 154-6, 50415 Tartu ESTONIA, Tel: +372 747 5290. Married, a son and two daughters.

**Ülo JAAKSOO**, born 16.04.1939, elected 1986, informatics. Tallinn Tallinn University of Technology 1962. Chief Executive Officer, Cybernetica AS (1997); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 639 7991, Fax: +372 639 7992, E-mail: ulo.jaaksoo@cyber.ee. HOME ADDRESS Trummi 30N, 12617 Tallinn ESTONIA, Tel: +372 672 6009. Married.

**Jaak JÄRV**, born 05.11.1948, elected 1997, natural sciences. University of Tartu 1972. Professor of Organic Chemistry, University of Tartu (1992); Jakobi 2, 51014 Tartu ESTONIA, Tel: +372 737 5246, Fax: +372 737 5247, E-mail: jaak.jarv@ut.ee. HOME ADDRESS E. Wiiralti 1, 51011 Tartu ESTONIA. Married, a son and two daughters.

**Ain-Elmar KAASIK**, born 2.08.1934, elected 1993, neurology. University of Tartu 1959. Vice-President, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 645 2528, +372 697 7452, Fax: +372 645 2742; E-mail: Ain-Elmar.Kaasik@akadeemia.ee. HOME ADDRESS Ülase 14, 50412 Tartu ESTONIA, Tel: +372 742 5426. Married, a son.

**Mati KARELSON**, born 27.12.1948, elected 2007, natural sciences and medicine, University of Tartu 1972. Professor of Molecular Technology, University of Tartu, Tallinn University of Technology (2004); Akadeemia tee 15, 12618 Tallinn ESTONIA, Tel: +372 620 2814, Fax: +372 620 2819, E-mail: mati.karelson@ttu.ee, HOME ADDRESS B.G. Forseliuse 3-7, 50107 Tartu ESTONIA, Tel: +372 734 8399. Married, two sons.

**Dimitri KALJO**, born 12.10.1928, elected 1983, geology. University of Tartu 1953. Head of the Department of Basic Research, Institute of Geology at Tallinn University of Technology (1990); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3016, Fax +372 620 3011, E-mail: kaljo@gi.ee.



HOME ADDRESS Raja 7A-6, 12616 Tallinn ESTONIA, Tel: +372 672 6551. Married, a son and a daughter.

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Chemistry	4	13.0
Engineering	4	30.5
Estonian Journal of Earth Sciences*	4	32.0
Oil Shale	5	37.0
Linguistica Uralica**	4	20.0
Trames	4	29.4
Acta Historica Tallinnensia	1	10.0
Estonian Journal of Archaeology	2	10.0
Total	36	226,4

\* The journal Proceedings of the Estonian Academy of Sciences. Geology started to appear from the beginning of 2007 under a new title Estonian Journal of Earth Sciences. The journal is issued by the Estonian Academy in co-operation with Tallinn University of Technology, the University of Tartu and the Estonian Geological Centre. Editor in chief is Member of Academy D. Kaljo. The journal has new design in format A4 and it appears four times a year. With the same number of printed sheet, the new design has significantly increased the textual volume of the journal: in 2007 there were 25 articles published, of which 9 were drawn as a brief communication.

\*\* Published as appendix to the journal was the book "The Estonian Language"<sup>1</sup>.

<sup>1</sup> Supplementary Series to Linguistica Uralica vol. 1 "The Estonian Language" is a comprehensive overview of the Estonian language, written in English. Compiler of the book is Professor Emeritus of the University of Tartu Mati Ereht. The said volume is the second complemented edition of the book "The Estonian Language"; the first edition appeared in 2003 and has been sold out.

The journals are internationally peer-reviewed and have international editorial boards. They are recognised as such by Estonian Science Foundation and Science Competence Council. Journals are electronically available at website of Estonian Academy Publishers and through mediation of well known electronic publishers EBSCO and C.E.E.O.L. Starting from 2006, the website of the Publishers offers free access to full texts of all articles of all journals

The articles published in journals are reflected in scores of international review journals and databases. The latter are replenished by the day. Starting from 2007, the journals *Acta Historica Tallinnensia* and *Estonian Journal of Archaeology* have won recognition by European Reference Index for the Humanities (ERIH) and they belong respectively among C and B category journals.

In 2007, as usual several special issues of journals were released. It is an internationally recognised way to publish the materials of international conferences, providing an opportunity to document in a compact way the results of research in certain problems related to Estonia. Interest in special issues is large both on part of authors (often this is the sole way for them to jointly publish the problems concerning Estonia) and readers. There were the following special issues released:

Proceedings of the Estonian Academy of Sciences. Biology. Ecology  
no. 1:

Special issue on remote sensing for monitoring Estonian environment.  
Guest editor A. Reinart, Tartu Observatory.

Proceedings of the Estonian Academy of Sciences. Biology. Ecology  
no. 2:

Special issue on ecosystems of Estonian lakes. Guest editor J. Haberman, Limnology Centre of the Estonian University of Life Sciences

Proceedings of the Estonian Academy of Sciences. Biology. Ecology  
no. 4:

Special issue on marine biology. Guest editor J. Kotta, Estonian Marine Institute at the University of Tartu.

Proceedings of the Estonian Academy of Sciences. Physics & Mathematics  
no. 2:

Special issue on non-equilibrium dynamical phenomena in inhomogeneous solids; EUROMECH 478. Guest editors J. Engelbrecht, Institute of Cybernetics of Tallinn University of Technology; G. A. Maugin, Pierre and Marie Curie University, Paris.

Proceedings of the Estonian Academy of Sciences. Physics & Mathematics  
no. 4:

Special issue on control and information technology, 5th Junior European Meeting. Guest editor S. Nõmm, Institute of Cybernetics of Tallinn University of Technology.

Proceedings of the Estonian Academy of Sciences. Engineering no. 2:  
Selected papers of the 5th International Conference of DAAAM Baltic,  
Industrial Engineering. Guest editor R. Küttner, Tallinn University of  
Technology.

Proceedings of the Estonian Academy of Sciences. Engineering no. 3:  
Special issue on oceanography, meteorology and coastal engineering.  
Guest editors T. Soomere, Institute of Cybernetics of Tallinn University  
of Technology, S. Keevallik, Marine Systems Institute of Tallinn Uni-  
versity of Technology.

Proceedings of the Estonian Academy of Sciences. Engineering no. 4:  
Special issue on electronics, devoted to T. J. Seebeck. Guest editors  
M. Min, Tallinn University of Technology; E. Schrüfer, München Uni-  
versity of Technology.

Oil Shale no. 2s:  
Special issue of electrical energy, additional issue to the scheduled four  
issues per year (Oil shale power and power system). Guest editors R. Ta-  
lumaa and H. Tammoja, Tallinn University of Technology.

Linguistica Uralica no. 1:  
Special issue on Livonian prosody.

Trames no. 2:  
Special issue “Dynamics around and within organisations”. Guest edi-  
tors M. Vadi and R. Vedina, the University of Tartu.

Trames no. 4:  
Special issue “Global ethics”. Guest editor J. Räikkä, Turku University.

The demand for special issues is larger than the Publishers can offer.

For furthering easier readability and better availability of journals, the Pub-  
lishers signed a Digital Object Identifier agreement with CrossRef.

For analysis of the publishing activity of Estonian Academy Publishers the  
Board of the Estonian Academy of Sciences set up the Publishing Strategy  
Commission, Chairman Vice-President Jüri Engelbrecht. Involved in the  
Commission were Heads of Divisions of the Academy, Chairman of the Pub-  
lishers’ Council and Chairmen of Estonian Science Foundation and Science  
Competence Council. Opinions were also expressed by heads of several hig-  
her schools and many scientists. The final position was adopted at session of  
the Board of the Estonian Academy of Sciences on 3 April 2007 (minutes no.  
3 § 20).

It was decided to redesign the series of Proceedings of the Estonian Academy  
of Sciences as follows:

- To convert Series of the Proceedings of the Estonian Academy of Sci-  
ences “Engineering” into the journal Estonian Journal of Engineering;
- To convert Series of the Proceedings of the Estonian Academy of Sci-  
ences “Biology. Ecology” into the journal Estonian Journal of Ecology;

- To combine Series of the Proceedings of the Estonian Academy of Sciences “Physics. Mathematics and Chemistry” into one multidisciplinary journal Proceedings of the Estonian Academy of Sciences.

Board of the Estonian Academy of Sciences approved the editors in chief of the named new journals, editors and editorial boards. Editor in chief of the Estonian Journal of Engineering is Member of Academy Jüri Engelbrecht, editor in chief of the Estonian Journal of Ecology is Professor Jaan-Mati Punning, and of the Proceedings of the Estonian Academy of Sciences Member of Academy Jaak Järv.

Besides journals, there appeared in 2007 as commissioned works 6 more works. As a result of several years of work, completed was the monograph in English by Member of Academy V. Kulbach “Cable Structures. Design and Static Analysis” (224 pp.). Special notice should be made of the enthusiasm of electrical engineers H. Pitsner and L. Kaber to eternalise the Estonian history of engineering. Besides the earlier published four books, in that year they authored the books “Electricity from Tallinn Power Station 1913–1979” (184 pp.) and “Glimpses at history of the Pärnu Power Station” (56 pp.). Presentation of the last book took place at the magnificent conference – “Estonian Electricity Network 100”.

## **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: 17, 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)

<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, +372 Tel: +372 644 3147,  
[eneken@utkk.ee](mailto:eneken@utkk.ee)

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

The 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 and the local written culture in general, both in historical and theoretical perspectives, within the context of historically multilingual Baltic space as well as world literature. It promotes literary and cultural thought in line with contemporary trends in textual research (discourse analysis, rhetorico-narratological models of culture, postcolonial theory and the theory of cultural transfer, memory and gender studies). Under scrutiny beside fiction and theatrical texts are various historiographical, philosophical, publicist and scientific modes of self-expression in Estonian and German, insofar as they have played a role in the Baltic literary space, as well as relevant texts of European history of ideas, which have influenced the course of thinking both in the universal embrace and in the Baltics. In this context, the history of certain basic concepts and models of thought in the whole of Europe is considered (e.g. tradition of antithetic thinking, the concept of infinity).

In the course of its developmental activities, Literature Centre publishes original researches and source materials of Estonian written culture, maintains the book and art collection of historical value, organises conferences, exhibitions and cultural events (the ceremony of F. Tuglas' prize for the best Estonian short story of the year, anniversary of the literary monthly Looming, events of the Scientists' House etc.). The Museum Department of the Litera-

ture Centre in Nõmme administrates the legacy of the writer Friedebert Tuglas, Member of Academy, and other collections (incl. F. Tuglas' library and art collection, and partly the library of A. Adson and M. Under, all collections totalling over 41 000 archival holdings), as well as the house and garden attached to it, carries out lecture-excursions and serves individual researchers and visitors.

The major areas of research of the Literature Centre are:

- Estonian literature and culture in the 20th C. (including literature in exile and the works of F. Tuglas)
- Earlier Estonian and Baltic German written culture in the 13th-19th C., German legacy in the development of modern Estonian culture
- Modern Baltic literatures and Estonian-Latvian literary relations
- Rhetorico-narratological models for description of European and Estonian culture
- Drama and theatre research.

Literature Centre participates in the work of the Centre of Estonian Cultural History and Folkloristics at Estonian Literary Museum.

2007 was the final year of the Centre's governmental research project "Estonia's Identity Narrative: Ideological and Rhetorical Models of Cultural Discourse" (2003–2007, head of the project Jaan Undusk). The goal of the project was to find new ways for historical in-depth description of Estonia's national, ethnic and cultural identity. The range of texts used as sources varied from the belletristic to the historiographical, philosophical, essayist and dramatic ones. Assigning value to geo-cultural factors and these pertaining to the history of ideas, some new features were foregrounded in the until now ethnically centered versions of Estonian identity. In this context, the Baltic German culture assumed a more constructive significance and was linked directly to the former stages of Estonian cultural development.

Within the framework of the subdivision "Estonian Culture in the 20th Century" (coordinators Aare Pilv and Rein Ruutsoo), an integral treatment of the progress of modern Estonian culture in the 20th C. was provided, as well as its situation at the end of the last century estimated. Involved in the project were many commissioned authors from other research institutes. The volume under completion is in the stage of copy editing and will be published in 2008.

Starting from 2001, the Literature Centre together with different partners in Estonia and abroad has organised the international Baltic German symposia every second year, which belong to the largest among their kin. IV symposium "Environmental Philosophy and Landscape Thinking" was organised in co-operation with the Department of Semiotics of the University of Tartu on 27–30 September 2007 in Tartu (organisers from Literature Centre J. Undusk, Liina Lukas). Speaking at the event were 30 representatives of various fields from Germany, Latvia, Lithuania, England, Sweden and Estonia, summaries

of the papers were published as a separate book (ed. L. Lukas, T. Maran, K. Tüür). A study excursion was organised across South Estonian landscapes. At the symposium, proceedings of the earlier symposia in German were presented as well. A selection of papers of the I symposium appeared as a collection of essays “Literatur in baltischen Bezügen: Jakob Michael Reinhold Lenz und Kristian Jaak Peterson” (compiled and edited by L. Lukas, Th. Tarterka, J. Undusk. Riga – Bonn, 2007. 260 pp.). Papers of the II symposium have been brought together in a voluminous omnibus collection “Baltisches Welterlebnis: Die kulturgeschichtliche Bedeutung Alexander, Eduard und Hermann Graf Keyserlings” (compiled and edited by M. Schwidtal, J. Undusk. Heidelberg, 2007. 586 pp.), published in Germany and completed with additional materials.

As a continuation of standing co-operation with Latvian literary scholars, a research seminar “Turn of the Century, Turns in Literature II: Estonian and Latvian Literatures in European Context at the Turn of the 20th/21st Century” (organiser Anneli Mihkelev) took place at Viinistu on 22–23 May 2007. In this seminar, typologically similar texts of Estonian and Latvian literature were considered, in order to enhance the rather embryonic Estonian-Latvian comparative literature research. The most important co-operation forum for the Baltic literary scholars is a joint conference held every second year, this time on 29–30 November in Riga. The collection of essays “We Have Something in Common: The Baltic Memory”, comprising the papers of the previous conference in Tallinn in 2005, was presented in Riga (compiled and edited by A. Mihkelev and B. Kalnačs. Tallinn, 2007. 214 pp.). The biggest co-operation project of the Baltic literary scholars is the writers’ lexicon “300 Baltic Writers”, co-ordinated on part of Estonia by Literature Centre and published in Lithuania. A. Mihkelev and J. Undusk belong to the research group, which prepares the collection “Baltic Literature” to be released in Latvia. A. Mihkelev has the grant from the Estonian Science Foundation for the comparative Baltic researches “Intertextual contacts as sources of strategies and ideologies” (2006–2008).

In co-operation with the Institute of Cultural Research and Fine Arts of the University of Tartu, the Centre launched the interdisciplinary theory seminar “Travelling concepts” for researchers and post-graduate students (organised by M. Grišakova and E. Laanes). The first seminar of the series was held in Tartu on 30 November 2007.

Co-operation continued with the Department of Fenno-Ugric Languages and Literatures of Groningen University and with the Departments of Literature of the University of Tartu. The third workshop “The End of Autonomy?” of the cooperation project was held on 22–23 November in Groningen, and concentrated on the applications of post-colonial theory in research of Estonian literature and art.



Literature Centre cooperates also with Stockholm University in the field of studying the historiography of Estonian diaspora. The follow-up symposium held in Rapperswil (Switzerland) "History Writing in Exile 2" embarked on elaboration of a joint project for writing the history of Polish, Estonian, Latvian, Lithuanian and Ukrainian exile historiography.

In 2007 the researchers of the Literature Centre delivered 25 scientific papers, including 23 at international scientific events. The most important of them was the 7th European Baltic Studies Conference "The Baltic Region between Germany and Russia" in Lüneburg (8–10 June 2007), with 4 papers delivered.

In May 2007 the director of the Literature Centre met with the Vice President of the German Research Foundation (Deutsche Forschungsgemeinschaft) Prof. Luise Schorn-Schütte. The topic of the meeting was a possible research project titled "Nordosteuropa" of German Research Foundation.

In 2007 the researchers of the Literature Centre published 28 major articles, including 13 in foreign languages.

Researchers of the Literature Centre are involved in co-operation with Estonian universities in supervising and reviewing B.A., M.A. and Ph.D. theses. In 2007, P. Kruuspere delivered a lecture course at the University of Art and Design of Helsinki and L. Lukas at the University of Vienna.

The Literature Centre is regularly participating in work of the academic council of the Academic Library of Tallinn University and in completing the collections of it.

Within the framework of the state programme "The Estonian language and national memory", the Museum Department has since 2004 performed the research project "Intellectual heritage of Friedebert Tuglas" (supervisor Ülle Kurs). The goal is to mediate the legacy of E. and F. Tuglas and M. Under and A. Adson as historical cultural assets to public by way of academically edited issues, through art exhibitions etc. One of the main goals of the project is completion of the "Collected works" by F. Tuglas, edited text-critically and supplied with forewords and detailed commentaries.

Since 2004, the Museum has implemented the project "Scientific collections of the Under and Tuglas Literature Centre" (supervisor Eha Rand) within the state programme "The humanitarian and natural science collections". The goal is streamlining the collections of scientific and historical value, improvement of the maintenance conditions and optimising the opportunities of use.

In 2007, the affiliated Museum was visited by the total of 1259 people. The Museum organised 29 lectures and excursions on literature and culture, and served 93 researchers on the basis of collections. Electronic database KVIS was continually replenished with entries. As of 31 December 2007, the database contained 9165 entries of archival holdings, of which 3790 were keyed in during the past year.

Art collection of the Literature Centre features ca. 1100 works of art, of which 5 works were exhibited from November 2007 until end January 2008 at the exposition “Önningeby artists” in Amos Anderson Art Museum in Helsinki. In 2007, the Estonian Cultural Foundation in the USA donated to the Literature Centre its art collection, containing 29 works (incl. 8 paintings) from 18 authors performing in exile (incl. K. Luts, A. Veeber, E. Kõks, H. Talvik, O. Mikiver, A. Vihalemm). Festive ceremony of signing the deed of gift took place on 17 March in the Estonian House of New York. The majority of works have arrived in homeland thanks to the help of the former General Consul of Estonia Peeter Reštšinski, and have been given for restoration with the help of the Ministry of Culture’s subsidy. The art collection of the Cultural Foundation will be exposed to public at the exhibition to be opened in the Vabaduse Gallery of the Tallinn Art Hall on 14 July 2008.

In 2007, part of the working premises of the Literature Centre at address Roosikrantsi 6 were renovated, and ventilation system of the Museum Department at Väikese Illimari 12 was completed.

## **FINANCIAL ACTIVITIES**

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The budget of the Estonian Academy of Sciences for 2007 and its execution  
(thou kroons)

	Budget	Implemen- tation
<b>INCOME</b>		
<b>ALLOCATIONS TO THE ACADEMY OF SCIENCES FROM</b>		
<b>THE STATE BUDGET</b>	19025.00	19025.00
incl. for basic activities of the Academy	13565.00	13565.00
for fees of Members of Academy	3960.00	3960.00
for fees of research professors	1500.00	1500.00
<b>OTHER REVENUE</b>	5320.07	5340.74
Target allocations of Ministry of Education and Research. incl.	3984.07	3984.07
membership fees	720.00	720.00
for study loan	55.54	55.54
for investments	600.00	600.00
for renovation of Kohtu 6	850.00	850.00
for organisation of issuing the national science prizes	230.00	230.00
for issuing the collection "Science prizes of the Republic of Estonia 2007"	30.00	30.00
for contribution to elaboration of support mechanisms of build-up of national programmes	498.53	498.53
for mapping the situation necessary for infrastructures and apparatus programme of the Estonian science and for carrying out the background research	1000.00	1000.00
Receipts from own income and sale of the bus	512.00	510.39
Reciepits from residual funds (Academy Publishers)	24.00	23.58
Reciepits from sale of printed matter and commissioned works (Academy Publishers)	800.00	822.70
<b>INCOME OF THE ACADEMY</b>	<b>24345.07</b>	<b>24365.74</b>

ALLCATIONS TO UNDER AND TUGLAS LITERATURE CENTRE	3347.50	3306.90
Through Ministry of Education and Research. incl	2822.50	2822.50
targeted funding of research	1325.50	1325.50
for infrastructure expenses	397.00	397.00
basic funding	246.60	246.60
for fulfilment of the state programme	480.30	480.30
for study loan	23.10	23.10
for investments	150.00	150.00
for renovation of the Literature Centre	200.00	200.00
From residual funds (for renovation of the Literature Centre)	125.00	125.00
Target allocations	375.00	338.70
From sale of literature	25.00	20.70
TOTAL INCOME	27692.57	27672.64

## EXPENDITURES

### GENERAL BREAKDOWN

Main activities of the Academy (through Academy Office)	9487.00	8977.70
Estonian Academy Publishers	4424.00	4446.28
Fees of Members of Academy	3960.00	3751.95
Fees of research professors	1500.00	1500.00
Study loan	55.54	28.51
Prizes, grants and medals incl.	305.00	302.30
K. E. von Baer Medal	40.00	40.00
Grants	100.00	100.00
Prize for the students' works	130.00	128.97
B. Schmidt Prize	35.00	33.33
Scientific Societies. incl	1315.00	1315.00
Estonian Naturalists' Society	530.00	530.00
Mother Tongue Society	140.00	140.00
Estonian Geographical Society	130.00	130.00
The Society of Estonian Regional Studies	115.00	115.00
Estonian Union of the Philosophy and History of Science	100.00	100.00
Estonian Literary Society	100.00	100.00
Learned Estonian Society	100.00	100.00
Estonian Musicological Society	50.00	50.00
Estonian Physical Society	50.00	50.00
Membership fees to internat. science organisations	720.00	696.73
Capital repairs of the Academy House	850.00	850.00
Commission of the national science prizes	230.00	230.00
Contribution to elaboration of support mechanisms of build-up of national programmes	498.53	0.00
Mapping the situation necessary for infrastructures and apparatus programme of the Estonian science and carrying out the background research	1000.00	0.00
Under and Tuglas Literature Centre	3347.50	3181.90
<b>TOTAL EXPENDITURES</b>	<b>27692.57</b>	<b>25280.37</b>

MAIN ACTIVITY OF THE ACADEMY (THROUGH ACADEMY OFFICE)		
Wages. incl.	4278.00	4131.61
permanent staff	3700.85	3613.41
other than permanent staff	413.00	362.20
fees to Emeritus Professors	99.00	99.00
allowances to widows of the Members of Academy	66.00	57.00
Social tax and unemployment insurance premium	1430.00	1342.86
Office expenses	550.00	500.82
Maintenance expenses of the property and premises	700.00	621.97
Current repairs	14.00	13.55
Investments	750.00	717.16
Maintenance expenses of vehicles	220.00	190.23
Mission expenses	400.00	356.48
Representation and entertaining expenses	300.00	269.99
Young scientists and popularisation of science	60.00	54.93
Training expenses	15.00	11.31
Expenses on commissions and divisions	70.00	70.00
Expenses on Foundation for International Exchange	650.00	649.16
Accounting and auditing	50.00	47.63
TOTAL OFFICE EXPENDITURES	9487.00	8977.70
ESTONIAN ACADEMY PUBLISHERS		
Wages. incl.	2105.00	2067.50
permanent staff	2025.00	1995.20
other than permanent staff	80.00	72.30
Social tax	701.00	688.50
Administration expenses	360.00	374.80
Printing expenses	419.00	411.10
Acquisition of equipment and inventory	44.00	58.10
Expenses related to commissioned work	795.00	846.28
TOTAL EXPENDITURES OF THE PUBLISHERS	4424.00	4446.28
UNDER AND TUGLAS LITERATURE CENTRE		
Wages. incl.	1605.00	1644.90
permanent staff	1512.50	1551.20
other than permanent staff	92.50	93.70
Social tax		543.00
Research and administration expenses	709.90	620.90
Investments (acquisitions and renovation)	475.00	350.00
Study loan	23.10	23.10
TOTAL EXPENDITURES OF LITERATURE CENTRE	3347.50	3181.90

Explanation

498.53 thou. EEK	Contribution to elaboration of support mechanisms of build-up of national programmes – term of execution 31.10.2008
1000.00 thou. EEK	Mapping the situation necessary for infrastructures and apparatus programme of the Estonian science and carrying out the background research – term of execution 31.10.2008
125 thou. EEK	Building the sewerage system of the Under and Tuglas Literature Centre – term of execution 31.12.2008

## **ASSOCIATED INSTITUTIONS**

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Pursuant to “Estonian Academy of Sciences Act” passed by the Riigikogu in 1997, the research, development and cultural institutions and scientific societies outside the structure of the Academy, whose activities and objectives however conform to the activities and objectives of the Academy can associate themselves with the Academy. The association of institutions with the Academy is effected under bilateral agreements, which specify the purpose of association as well as the tasks and commitments for both parties.

Mutual exchange of information appears as one form of co-operation between the Academy and an associated institution. Surveys on the activities of the institutions associated with the Academy have been published in the Academy Year Book since 1998. Included reviews differ from one another by their structural composition, exposition and scope. They are practically presented in the same form as submitted, with minor modifications, suggested by the editorial board and kindly accepted by respective institutions.

At the end of 2007 the Estonian National Museum associated with the Academy.

Reviews on the 2007 activities of the institutions associated with the Academy have been presented in the chronological order of their association date:

Tartu Observatory . . . . .	99
Institute of Ecology at Tallinn University . . . . .	103
Academic Library of Tallinn University . . . . .	106
Institute of the Estonian Language . . . . .	109
Estonian Literary Museum . . . . .	114
Institute for International and Social Studies at Tallinn University . .	117
Estonian National Museum . . . . .	119



## TARTU OBSERVATORY

Associated with the Estonian Academy of Sciences  
8.05.1998



Founded 1808

Personnel: 72, of whom 45 researchers

Address: 61602 Tõravere, the Tartu county, ESTONIA, aai@aai.ee

<http://www.aai.ee>

Director: Laurits Leedjärv, Tel: +372 741 0265, Fax +372 741 0205,  
leed@aai.ee

Head of Information Team: Mare Ruusalepp, Tel: +372 741 0261,  
mare@aai.ee

Tartu Observatory is a research centre, studying the whole Universe on its largest scale. The more or less regular structure, formed by clusters and superclusters of galaxies, has become the natural component of the present day astronomical picture of the world. So has the dark matter, the existence of which we are aware only due to its gravitational impact, and which is found in Universe as many as up to ten times more than is found the ordinary, visible matter. About thirty years back those truths were not yet as fully known and proved. Estonian astronomers have impressive merits in their discovery and imbedding in the world picture. 2007 was ushered in with due acknowledgement of those discoveries: Member of Academy Jaan Einasto and his colleagues Maret Einasto, Enn Saar and Erik Tago were awarded the largest and most prestigious science prize of the Republic of Estonia for the discovery, impacting on the paradigm and the world picture of this branch of science. It is heartening to ascertain that Member of Academy Jaan Einasto has been until today in the science, and also in science policy of Estonia very active and that he is undoubtedly in the frontline of the world cosmologists.

Research of the large-scale structure of the Universe continued at the Observatory also in 2007. It is not sensible to set up under the grey sky of Estonia the telescopes, suitable for observation of distant clusters of galaxies. Fortunately, the observations made with large telescopes in a good astro-climate are available to all astronomers nowadays. The Sloan digital sky survey and the so-called two-degree-field survey are the main databases, by use of which our cosmologists identified the superclusters of galaxies, studied their morphology and compared their models with the observational data. They also studied smaller clusters of galaxies. Of single galaxies, our neighbour the Andromeda Galaxy M 31 was taken under close scrutiny, and a detailed model was drawn for it. The researchers displayed continually interest to the radio radiation of our home galaxy, i.e. the Milky Way in the 21 cm spectrum line of hydrogen, which makes it possible to discover the hydrogen clouds, differing from the general background of Galaxy. The works carried out in the

framework of the cosmological topic also included the hydrodynamic calculations of formation and evolution of the first stars – those that were formed *ca* 200-400 million years after the Big Bang. This is evidence of a close connection of cosmology with the physics of stars.

Structure of stars, their chemical composition and evolution was another research topic of the Observatory, which ended in 2007. Out of the diverse world of stars, our researchers focused traditionally on the coolest end of the temperature range (*ca* 2000-3000 K) and on the hottest end ( $> 30\,000$  K), and also on several interim objects and binary stars. R CrB type cool stars are known by rapid and deep drops of brightness, created by outflow of dust from the star. Specification of chemical composition and physical parameters of the prototype itself and another star of that type Z UMi, as well as the cool star HD 161796 in 2007 enables better understanding of the behaviour of stars, having reached the late phase of evolution. Regarding the hot Wolf-Rayet type stars, of interest is the dependence of their mass loss rate on metal content of the star. It turned out, that it all is not as simple and unambiguous as was earlier thought. The Observatory continued development of the software package SMART, with the main accent on working out the algorithms of calculation of spectra of eclipsing binary stars and spectra of rapidly rotating stars. Our researchers continued deep involvement in preparations for future data processing of the project Gaia of the European Space Agency (the start is planned in December 2011). We also further expanded the circle of stars with emission lines, the observation of spectra whereof help calibration of results of observations by Gaia. Statistical research focused, besides the sunspots, also on photometric changes of magnetically active stars. The novel methods used can be applied for instance also with meteorological and actinometric time-series. In the area of theory, the researchers also developed the methods of solution of radiative transfer equation in optically semi-infinite homogeneous atmosphere and the methods of calculation of radiation processes in the vicinity of compact objects (neutron stars and black holes).

Our third research topic is concerned with more mundane matters: atmosphere of the Earth and surface of soil and water. Like always, those executing that topic were eager to upgrade their research apparatus and to participate in contractual works. They continued registration of UV radiation spectra of the Sun with our relatively simple and cheap devices. Control of the quality of our measurements during several years showed, that the results are fully reliable. One of the possible causes of global warming, very topical today – the increasing of the greenhouse effect – is related to changes in infrared radiation of the atmosphere. Although the part of atmospheric radiation directed to the base surface i.e. counter-radiation of the atmosphere is one of the most important components of the radiation balance, it has been very little researched, until now. Analysis of the data collected in Tõravere meteorological station during the past four years has shown, that in Estonia the quantity of counter-

radiation falling on surface of soil in one year exceeds almost thrice the total annual global radiation. Remote sensing from satellite pictures embraces both the surface of soil and water. In case of water bodies, it is an important activity to validate the measurement algorithms on the example of two large and relatively different lakes: the lake Peipsi of muddy water and the lake Vänern (Sweden) of clear water. The researchers started further development of bio-optical model of the water bodies, where the first task was finding links between concentration of optically active substances and the primary optical properties of the water. For that purpose, last summer there were carried out extensive field works with participation from several research institutions on the lake Peipsi and in coastal waters of Estonia, as well as measurements from a plane within framework of the GREASEMH project. That series of measurements funded by FP6 project EUFAR continued in Estonia from 17–20 July 2007, during which period it was possible to use the plane of the Spanish National Institute of Aeroengineering. The remote sensing specialists benefited most of the observation data from that campaign. 80 channels of the scanning spectrometer AHS covered the spectrum range 450 nm (blue light) up to 13  $\mu\text{m}$  (thermal infrared radiation). At the same time, support measurements were made from surface of the soil in Järvelja training base and, and the reflectance factor of forests was measured from helicopter. The researchers also continued the studies of more theoretical type about radiative transfer in canopy.

The performance of the work of researchers is usually assessed by the number of scientific publications. The year of 2007 was successful for the Tartu Observatory in that regard: the number of articles fell within the range of 75, which number was equalled by popular science pieces of writing. Another yearbook appeared from print, as well as the Observatory Calendar; the Calendar of Starry Sky appeared for the second time. That year will be also reminisced due to the fact, that we boosted significantly the speed of our Internet connection, which reaches now 155 Mb/s. Mention must also be made of successful performance of the Observatory at the European Union 7th Framework Programme Capacities call REGPOT, where the application of the Tartu Observatory for exposing and developing the potential of Estonian space research merited a very high appraisal from experts; the project EstSpace is one of 23 successful applications, which was selected from among 258 for funding.

Ernst Julius Öpik memorial prize to the best student majoring in astronomy was conferred on doctoral student of the University of Tartu Lauri Juhan Liivamägi. In case of Juhan Ross memorial prize, the scientific council decided to recognize equally both doctoral students of the University of Tartu, having submitted the application, hence it was split between Krista Alikas and Tõnis Kärdi.

It is worth sometimes to recall the past, in order to look into the future. That day for remembering was 2 November 2007, when we celebrated, jointly with the Institute of Physics of the University of Tartu the 60th anniversary of our common predecessor– the Institute of Physics, Mathematics and Mechanics. The time of the festivities was selected in view of the fact, that on November 5 was the 100th anniversary of birth of the long-term Director of the Institute, organiser of the building of a new observatory in Tõravere, Member of Academy Aksel Kipper. We also celebrated the 90th anniversary of Member of Academy Grigori Kusmin. Such common reminiscence of history will help us better face the year 2008, when very many important rounds of applications and decision-makings will challenge us– hopefully the euro-moneys will contribute also to the development of our relatively specific and unique research institution.

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

Associated with the Estonian Academy of Sciences  
16.06.1998



Founded 1992

Personnel: 36, of whom 26 researchers

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In 2007, scientific research was carried out within the framework of 26 topics of different levels and projects, incl. 2 target-financed topics by Ministry of Education and Research of Estonia, 6 Estonian Science Foundation grants, 3 international projects of different levels and 15 applied co-operation agreements. In addition, 5 international co-operation agreements were completed. The institute participated in several international programmes. Research work was carried out within framework of 7 Doctoral and 1 Master thesis.

Out of the international co-operation programmes, the most comprehensive were the European Regional Development Foundation funded Interreg IIIB Project ASTRA – “Developing Policies and Adaptation Strategies to Climate Change in the Baltic Sea Region” (leader of working group of the Institute of Ecology: Are Kont); European Commission VI Framework Projects “Action for Training in Land Use And Sustainability” (ATLAS) (co-ordinator on part of Estonia Hannes Palang) and EroGRASS – “Failure of Grass Cover Layers at Seaward and Shoreward Dike Slopes” (expert on part of Estonia A. Kont).

The main research effort of the Institute was carried out within the framework of the following target financed topics.

Topic “Lake-level fluctuations during the postglacial period: causes and impact on lake ecosystems” (project leader: Prof. J.-M. Punning). Comprehensive analysis of the sediments of lakes Väike-Juusa and Ruusmäe showed that fluctuations in water level were the leading factors determining the habitats of diatom assemblages in the lake. In the surface sediment samples planktonic species such as *Cyclotella* spp., *Stephanodiscus* spp. and *Aulacoseira* spp. had a depth optimum at 3–4 m and the most abundant periphytic taxa were distributed mostly below 3.5 m.

Large water-level fluctuations result in erosion of earlier accumulated sediments and their transport. Research of the bottom sediments of the Lake Mar-

tiska enabled to assess the impact of transport on age correlation of sediments. Results of pollen analysis of sediment cross-cuts collected from transect of the Lake Väike-Juusa show, that the long term fluctuation of the water level determines the species-specific pollen distribution between various parts of the lake.

Preliminary results of research of polycyclic aromatic hydrocarbons (PAHs) in bottom sediments of the Lake Peipus show, that the main import of those compounds takes place through atmosphere, while in the process of transport the cancerogenic PAHs may again get into circulation. The team started granulometric mapping of the bottom sediments of the Lake Peipus and research of phosphor content and carbon circulation of small lakes.

Topic “Impact of disturbances on wetland ecosystems in Estonia” (project leader: M. Pensa). In the global scale, wetlands are one of the most vulnerable ecosystems. It is, thus, important to study the development of wetland ecosystems and the factors affecting it. The results of these studies enable us to restore wetlands that have been affected by human activities. The objective of the current project is to study the effect of disturbances on the structure and nutrient cycle in wetland ecosystems that are in different developmental stages. By fulfilling the project we get results, which demonstrate 1) how the duration and strength of disturbances affect the characteristics (e.g., primary production, accumulation of organic matter) of the state of mire ecosystems, 2) whether fluctuations in the ground water level affect the movement of peat pore water and 3) how the changes in atmospheric circulation influence the frequency of geological and geomorphological processes in coastal wetlands.

The results of the research obtained in the reporting year revealed that in Seli bog, located in the impact area of the underground mining district of Ida-Viru county, the growth of trees has accelerated during the last 50 years. Significant microtopographic changes have taken place predominantly in the eastern and southern parts of the bog. Preliminary study of peat stratigraphy, water movements, and the pH and electric conductivity of pool water showed that these parameters differed in the eastern and western parts of the bog. In Kalina bog, undermined 11–25 years ago, areas with different hydrological and ecological conditions were discovered. Sunk areas with fen vegetation have emerged; the bog has been disposed to alkali dust pollution, particularly during 1950–1978, negatively influencing the growth of *Sphagnum* mosses. The water levels in the Lake Kalina, at the same time, have not changed notably in 1969–2007.

The knowledge gained from palaeoreconstructions inferred from mire deposits plays an important role in the studies of the formation and development of mire ecosystems. The analyses of the composition of sediments from several bogs showed that human impact is to be taken more seriously than before.

The impact of human activities interacting with climatic factors on the formation of sediments may appear much earlier than considered so far.

In the course of the studies of coastal wetlands wave parameters, directions and velocity of currents were measured during five months in the Saaremaa study area. At Sillamäe, repeated levelling of sea bottom profiles was carried out in order to discover counterparts from earlier periods to recent changes and to consider possible differences occurring in the modelling of coastal processes

57 scientific articles and individual issues were published by the staff members of the Institute in 2007, incl. 14 articles in high level international scientific publications, 16 articles in Estonian scientific publications, plus 6 popular science articles. 36 papers were delivered at international conferences and meetings, 20 papers at national events and 32 papers at scientific seminars of the Institute. The 10th publication of the Institute of Ecology "Problems of Contemporary Environmental Studies" came out edited by J-M. Punning. The 36th volume of Year Book of the Estonian Geographical Society came out edited by T. Koff and A. Raukas.

The majority of applied researches were involved with analysing the status of the environment and its improvement potentialities. The accent of the applied researches has started to incline towards general and more science oriented environmental policy projects.

In autumn 2007, the Institute organised the national inter-universities symposium of young geographers "The Muhu monologues", where some papers were delivered. Students supervised by personnel of the Institute were acknowledged as worthy of approval at competitions of the students' papers.

Researchers of the Institute were actively involved in teaching at universities – by delivering lectures and supervising students at Tallinn University, Tallinn University of Technology and the University of Tartu. Out of personnel of the Institute, the Master's degree in geo-ecology was defended by Kairi Sepp, Egert Vandel, Piret Kuld, and in environmental technology by Kristel Kund.

## **ACADEMIC LIBRARY OF TALLINN UNIVERSITY**

Associated with the Estonian Academy of Sciences  
17.06.1998



Founded 1946

Personnel: 143, of whom 2 researchers

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Number of users 43 770

Number of copies in the circulating collection 2 536 117

Academic Library of Tallinn University is an autonomous scientific, educational and cultural institution of Tallinn University, fulfilling independent tasks. As a scientific and archival library providing public service, the Library's goal is to preserve the existing collections, to guarantee continuous influx of the newest scientific information, to provide for availability to readers of the scientific information, to create the archival collection of national holdings and University publications, to preserve the archives of national cultural heritage, to compile and publish the retrospective national bibliography and to support the comprehensive research into historical collections of the Library.

As a university library, the Library's goal is to support acquisition of top level higher education; as a research and development institution – to pinpoint and solve the topical issues of information and library services, both as executor and co-executor of independent research and development projects.

In the reporting year the Library fulfilled the tasks set in the area of design, development and completing of the collections. Development of library services directed at users was overly satisfactory. Important landmark in development of active holdings and making available the scientific information was establishment of the Medical Information Centre, created on the basis of medical literature of Estonian Medical Library and Academic Library. The reading room of the Centre was opened to readers on November 2.

Because nowadays a significant part of scientific information is available through electronic databases, much attention was paid to replenishment of electronic collections, development of e-services and training of the users. In 2007 the Library acquired WEB of Science citation databases, ISI Proceedings conference materials' databases, and the databases reflecting the impact



factor of Journal of Citation Reports, for which there had already developed the demand of researchers.

One of the tasks of the Academic Library is composing the bibliographic databases and providing information services. By end of the reporting year the Library website had made available to users 11 bibliographic and 2 biographic databases.

For updating the library services, the courier service was launched, which enables delivery of holdings, ordered by readers throughout Estonia. Readers have also been provided an opportunity of card payments for charged services, penalties and compensations for documents.

A highlight event was the creation of the Centre for Early Printed Book in spring 2007, the task of which was co-ordinating the structural units concerned with early printed book (i.e. publications, which appeared from 15th C. until the first half of 19th C.) on the basis of the Baltic collection and collections of rare books, in order to present the rarity books and the sources of research and objects of preservation, and to support the Humanities and the cultural history areas of research. The Centre has been successful at presentation the early printed book collections: the website of the Library opened the virtual book exhibition *Hortus Librorum* updated once per quarter, which presents the important early printed books from the Baltic collections. The recent literature exhibitions were organised in showcases of the Baltic reading rooms, and the public presentations of seminar and diploma works on rare book, completed at Department of Information Sciences of Tallinn University, which offered new information about research works in the given area elsewhere in the world.

At the beginning of the reporting year, the cataloguers and readers got access to the databases of Consortium of European Research Libraries (CERL). That enabled us to significantly enlarge the volume of re-cataloguing the rare publications and to improve the accuracy and reliability of the entries (incl. national bibliography).

One of the tasks of the Library is compiling the Estonian retrospective national bibliography. The Academic Library is responsible for that in the following scope: book in Estonian 1525–1917; journalism in Estonian in 1766–1940; book related to Estonia in foreign languages, having appeared out in Estonia or elsewhere until 1940; periodicals related to Estonia in foreign languages, having appeared in Estonia and elsewhere in 1675–1940.

In 2007 the biographic database ERICUS of national bibliography was launched open to the readers, containing data on persons, responsible for intellectual or artistic content and performance of works, registered in Estonian retrospective national bibliography. The database, containing data for 445 per-

sons by the end of the reporting year has already met with a positive reception by users.

Researchers of the Library continued the topics started in 2005/2006. Kaja Tiisel continued her research on history of mentality in Tallinn of the 19th C. on the basis of the Baltic collections, and Anne Valmas continued handling the Estonian literature in exile. Anne Valmas delivered papers at several international seminars and conferences.

Active in the Library is the Restoration Department working on scientific bases, concerned with restoring the rarities and research of history of bindings. Head of Department Rene Haljasmäe has presented the results of his research at several conferences and at HIBOLIRE workshop in Helsinki.

## **INSTITUTE OF THE ESTONIAN LANGUAGE**

Associated with the Estonian Academy of Sciences  
11.05.1999



Founded 1947

Personnel: 78, of whom 36 researchers, 15 editors

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Institute of the Estonian Language has three departments:

Department of standard written Estonian grammar and language planning (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; starting from 01.09.06 acting Head of Department Tuuli Rehemaa.

As from 2006, Institute of the Estonian Language includes the Centre of Estonian Terminology, headed by Tiina Soon.

GRM and 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 Kristiina Ross, Ph.D.

DEPARTMENT OF STANDARD WRITTEN ESTONIAN GRAMMAR AND LANGUAGE PLANNING acts in three areas:

- Language Planning And Terminology. Department provides free of charge language consultation in issues, concerning the use of general Estonian, it answers letters and e-mails, organises language care courses, see <http://www.eki.ee/keeleabi/>. The place names related information is available at address <http://www.eki.ee/knab/>. Language planning and care is also funded through national programmes, whereas the language care has been funded since 2004 with the help of the state budgetary support. Publications of the Department handle both the general language planning (Tiiu Erelt, Tiina Leemets, Argo Mund, Sirje Mäearu, Maire Raadik, T. Rehemaa), the terminology planning (T. Erelt) and the name

planning (P. Päll). Speaking at the symposium organised by Department “Language of the European Union as our common language” were scientists of the Institute of the Estonian Language, Finnish Research Centre of National Languages and specialists of Translation Services of the European Union.

- Links between Grammar and lexicon. Various lexical-grammatical databases were created on the basis of ÕS 2006 (ÕS=Orthological Dictionary): morphology basis for updating the stem basis of automatic morphology, basis of the style and speciality notes of the system of the dictionaries of the Institute (Ülle Viks, Indrek Hein). Department continued the application of structures based language theory to syntax of nominalisations and infinite verb forms of Estonian (Heete Sahkai). At the analysis of lexicon of the standard written Estonian on the basis of word families (units of lexicon, related by word formation), emphasis was made on issues connected with conversion (transfer of the same stem to another word category) (Silvi Vare). Completed has been the database of composite verbs, reflecting the part-entirety verbal meanings, recurrent in languages (they manifest themselves in Estonian through full and partial object). Research of Estonian partitive case, unique among languages of the world has made it possible to discover the part-entirety type meanings also in more abstract categories of languages (Anne Tamm). The researchers were also concerned with perception verbs of Estonian (Maria-Maren Sepper), links of text type and contextuality (Hille Pajupuu, Rene Altrov), perception of emotions (R. Altrov), proxemics (R. Altrov), noun collocations (Liisi Piits), breaks in the read-out speech (Kairi Tamuri, H. Pajupuu).
- Language technology. New public web-version of ÕS 2006 was created (Ü. Viks, I. Hein, Andres Loopmann, Kati Sein) <http://www.eki.ee/dict/qs2006/>. In co-operation with Department of Lexicology, there was developed the dictionary base of Estonian-X-language (EXS), a unified system of XML-signs and language notes was created, electronic versions of “School student’s ÕS” and other dictionaries were analysed, for the ultimate purpose of transferring them to XML-editor (Ü. Viks, A. Loopmann, M. Langemets). In progress is compiling the corpus of Estonian emotional speech for text-speech synthesis of the Estonian language (H. Pajupuu, R. Altrov, K. Tamuri). There continued efforts of making the synthesised speech more natural: researchers were concerned with modelling the temporal structure of speech and creation and structuring the speech corpus (Meelis Mihkla, L. Piits, Tõnis Nurk).

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”). Released was the last fascicle of the Dictionary of

Standard Written Estonian: Volume VII, 2nd fascicle (*vunts–yuppie*) / Edited by Rudolf Karelson, Mai Tiits, Tiia Valdre and Leidi Veskis; Executive editor Margit Langemets; Institute of the Estonian Language. Tallinn: Eesti Keele Sihtasutus, 2007. However this is not the end of the 50-years-long work with the Dictionary– the researchers have already tackled editing the manuscript of “Dictionary of Standard Written Estonian” to be released in 2008 in volumes (Piret Voll, L. Veskis, M. Tiits, T. Valdre, M. Langemets). There continued, too the compilation and editing of the manuscript of “Estonian-Russian Dictionary” Volume V (T. Valdre, Maimu Liiv, Tiiu Lagle, Nelli Melts).

In the research works, there were handled the Estonian emotional words in work environment (Ene Vainik), colour names (Kaidi Rätsep, Mari Uusküla, Urmas Sutrop, Elena Rjabina), problems of polysemy (M. Langemets).

Jointly with Estonian Society of Applied Linguistics and Tallinn University, there was organised the 6th Conference of Applied Linguistics “Language and Lexicon”. By the time of Conference, there appeared in print “Yearbook 3 of Estonian Society of Applied Linguistics” (a pre-reviewed serial issue).

DEPARTMENT OF ESTONIAN DIALECTS AND COGNATE LANGUAGES continued editing the Dictionary of the Estonian dialects. Released from print was Dictionary of the Estonian dialects, volume IV, 19th fascicle (*körtsis – lahhest*) / Edited by Mari-Liis Kalvik, Mari Kendla, Jüri Viikberg; Institute of the Estonian Language. Tallinn: Eesti Keele Sihtasutus, 2007, pp. 621–820. Continued was the compilation of new entries of etymological dictionary (Meeli Sedrik, Sven-Erik Soosaar, Iris Metsmägi) and editing and analysis of the sample articles (Lembit Vaba, Helmi Neetar).

Since 1985 the Department has been involved with joint project “Atlas Linguarum Fennicarum” (Institute of the Estonian Language, Kotimaisten kielten tutkimuskeskus, Institute of Language, Literature and History of the Karelian Science Centre of Russian Academy of Sciences) and “Atlas Linguarum Europae” (partners from over 40 European countries). As a result of joint work, released was Atlas Linguarum Fennicarum = Itämerensuomalainen kielikartasto = Läänemeresoome keeleatlas = Ostseefinnischer Sprachatlas = Лингвистический атлас прибалтийско-финских языков. ALFE 2 / Editor in chief Tuomo Tuomi; Senior editor Tiit-Rein Viitso; Editorial board: Anneli Hänninen, Arvo Laanest, Helmi Neetar, Vilja Oja, Vladimir Rjagojev, Seppo Suhonen, Tuomo Tuomi, Tiit-Rein Viitso, Nina Zaitseva. Helsinki: Suomalaisen Kirjallisuuden Seura. Kotimaisten kielten tutkimuskeskus, 2007, 540 pp. (Suomalaisen Kirjallisuuden Seuran Toimituksia; 800. Kotimaisten kielten tutkimuskeskuksen julkaisuja; 118).

An important area of the Department is the research into place names and personal names (Marja Kallasmaa, Marit Alas). Researchers participate in the

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 (Kristiina Ross). The Department participates in the joint project “Common Roots of the Latvian and Estonian Literary Languages” (Institute of the Estonian Language and University of Latvia). The co-operation gave birth to the book *Common Roots of the Latvian and Estonian Literary Languages* / Edited by K. Ross, Peteris Vanags. Frankfurt am Main-Berlin-Bern-Bruxelles-New York-Oxford-Wien : Peter Lang, 2008, 377 pp.

There continued the joint project “Digitalising and exposition in Internet of the sound archive of Estonian dialects and Fenno-Ugric languages” with Department of History of the Estonian Language and Dialects of the University of Tartu (involved in project are M.-L. Kalvik, J. Viikberg) and organisation of sound archive of Institute of the Estonian Language and compiling the database of sound archive tapes of Estonian dialects.

CENTRE OF ESTONIAN TERMINOLOGY is oriented at co-operation between areas, for streamlining the terminology, for its novation and updating. The Centre also organises the work of interdepartmental terminology commission established by Ministry of Defence, where represented, besides Ministry of Defence are Ministry of Foreign Affairs, United Educational Institutions of the Defence Force, Estonian Encyclopedia Publishers, Institute of the Estonian Language, land, naval and air force and the North Estonian Rescue Centre. Participating in work of the commission from Centre of Estonian Terminology are Tiina Soon, Liia Piirmets and Kaur Männiko.

In co-operation with Office of Riigikogu, in progress is the project of development of translation and the technical solution of Eurovoc thesaurus (project leader Helve Trumann). Ongoing was the co-operation with medical terminology commission, launched as a pilot project in the past year, for streamlining and novation of medical terms (Eva Tamm and Merily Plado, K. Männiko).

In 2007, European Commission organised a competition for streamlining the Estonian terms of the terminology database IATE (InterActive Terminology for Europe). Centre of terminology submitted to the competition a successful offer and it was elected contractor of the terms streamlining project. The object of the project is checking and updating of the terms in Estonian.

The largest project of the Centre is novation and administration of military, security and defence policy terms base “Militerm”.

Starting from 2005, operating at Department of Philosophy of the University of Tartu, through agency of Foundation SA Innove, supported by the EU

Structural Fund, is the Doctors' 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 the Institute of the Estonian Language enrolled at Doctors' School, see <http://www.eki.ee/eki/doktorikool.html>. In the past year, doctoral degree was defended by M. Mihkla on the topic Modelling the temporal structure of speech to Estonian text-speech synthesis.

## **ESTONIAN LITERARY MUSEUM**

Associated with the Estonian Academy of Sciences

11.05.1999

Founded in 1909 as the Archive Library of the Estonian National Museum

Centre of Estonian Cultural History and Folklore since 2001

Personnel: 107, of whom 41 researchers, 13 librarians and bibliographers

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Secretary: Annela Oona, Tel: +372 737 7700, [annela@kirmus.ee](mailto:annela@kirmus.ee)

The main goals of the state research and development institution Estonian Literary Museum is to guarantee preservation, scientific research and transmission of cultural history source materials, necessary for existence of the national identity and retention of social memory, for intellectual freedom and for full-blown development of culture, by reference to needs and interest of science and society. In 2007, the Estonian Literary Museum functioning as a research institution fulfilled 4 target-financed topics and 10 grants of the Estonian Science Foundation. During that year, three researchers of the Museum – Eda Kalmre, Anu Korb and Ergo-Hart Västriik – defended their PhD degrees at the University of Tartu. Applications for 5 new target-financed topics were drafted and submitted. Support for replenishment of stocks and separate projects was obtained from national programmes “Collections in the Humanities and Natural Sciences”, “The Estonian Language and National Memory”, “South-Estonian Language and Culture”, the Compatriot Programme, the Setomaa cultural programme and classics programme, the Cultural Endowment of Estonia and from elsewhere. When implementing the Compatriots Programme of the Ministry of Education and Research, close co-operation was carried out with the Karl Ristikivi Society and other memorial institutions, there were organised the archives-related trainings and seminars both in Estonia and Sweden. Development of the Centre of Estonian Cultural History and Folklore and development of the project LABOR under the support of the Enterprise Estonia Foundation achieved the phase of writing the final report, and merited excellent appraisal.

The Estonian Literary Museum consists, like in the former years of five structural units, of which three are based on collections important as regards the cultural history:

Archival Library with Department of Bibliography – head Merike Kiipus;

Estonian Cultural History Archives – head Piret Noorhani until October 2007, since November acting head Vilve Asmer; the collection contains extensive photo archives and works of art;



Estonian Folklore Archives – head Ergo-Hart Västrik;  
Department of Folklore – head Mare Kõiva;  
Department of Ethnomusicology – head Triinu Ojamaa.

In 2007, the most important activities and achievements of the Estonian Literary Museum were as follows.

**COLLECTING.** By Regulation of Government of the Republic of 9 September 2007 the Archive Library of the Estonian National Museum was again renamed Archive Library, to stay so until end 2011. That will guarantee regular arrival of deposit copies of printed matter further on. At variance with the regular notion that the hard copies are increasingly substituted with Internet-based issues, the production of the printers' evidences the trend of growth; by the year the quantity of titles has increased, and that sets higher demands regarding the storage premises and organising labour of the archive library. For instance in 2007 accessions amounted to 14 385 registered items. Altogether 28 689 registered items were entered in the unified electronic catalogue ESTER of the Estonian Academic Library. As of 31.12.2007 the size of collection was: 860 316 registered items, of which entered into the electronic catalogue were 424 740 items i.e. 49.4% of library holdings. In database of the older journalism of Estonia DEA, 120 micro film bobbins were made available. The Museum participated in compiling the national bibliography of the Estonian book (1918–1944). In 2007, the Archive Library had ca. 4300 visits and 22000 borrowings, there were 350 electronic inquiries, and consultations were extended also over telephone. There were organised 31 study excursions to 420 participants. Welcomed were 20 researchers from abroad.

Voluminous and unique accessions were also witnessed in the Estonian Cultural History Archives and the Estonian Folklore Archives. Collection and transfer of archival legacy of Estonians in exile was carried on. For instance, in autumn the personal archive of the author and ethnologist Ilmar Talve arrived in Tartu, materials related to Estonians from Brazil were received, including the chronicle of cultural life starting from end 1940s, recorded on DVD. There were negotiations held on issue of transfer of archives of Jaan Toomla, Debora Vaarandi, Oskar Kruus, Mati Unt. The efforts of collection of heritage of the Estonian Folklore Archive and the competitions of writing the life stories of the Estonian Life Stories Association were successful. Co-operation with Estonians in exile for consolidation of information about dispersed archival materials became tighter – for that purpose in September at Koke there was the training directed at Estonian archivists in exile.

**RESEARCH.** In 2007, the Estonian Literary Museum fulfilled 4 target financed topics and got ready 5 topics for a new round of applications. Issued in 2007 by the Estonian Literary Museum, in quest of the status of a scientific publishers, authored by its researchers or with their contribution were 57 publica-

tions, of which 21 topical collections or monographs (2 in networks), 9 issues of scientific journals (hard copy and networks issues), 5 fascicles of theses (hard copy and network issues), 1 bibliography. Researches were based predominantly on collections preserved in the Estonian Literary Museum. The largest recognition bestowed on the research done in the Estonian Literary Museum in 2007 was the National Science Prize granted to senior researcher of the Estonian Folklore Archives Mall Hiimäe.

POPULARISATION OF RESEARCH AND CULTURAL HISTORY. Issued by the Estonian Literary Museum were 13 network publications of the old book and 8 other network publications, the Museum digitalised *ca* 150 annual volumes of the first calendars in Estonia. In database of the older journalism of Estonia DEA, 120 micro film bobbins were made available.

EQUIPMENT AND INFORMATION TECHNOLOGY SUPPORT. End 2007 was the deadline for the final report of the round of support to centres of excellence in research by Enterprise Estonia Foundation. In the framework of the project "Labor", the computer stock of the Museum was replenished by a modern newspaper scanner and a new server.

RENOVATION. The repairs started in 2006 continued in the reading hall and workrooms of the 2nd floor of Estonian Cultural History Archives. In the premises of the old ventilation system standing useless, there was built a new repository with fire-fighting signalling device and alarm, and the gas extinguishing system.

**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 17 researchers

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<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 2007 was successful – the personnel published a number of scientific publications, attended numerous scientific 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.

The main outcome of the work of the Institute is publications. In 2007 researchers of the Institute authored numerous publications at home and abroad. Special mention should be made of the CC category articles:

- Saar, E.; Unt, M.; Kogan, I. (2007) “Transition from Educational System to Labour Market in the European Union: A Comparison between New and Old Members”. *International Journal of Comparative Sociology* 48(6): 551-579;
- Saar, Ellu; Kazjulja, Margarita (2007) “Individual Planning or Adaptation: Personal Destinies of Non-Estonians in the Period of Socio-Economic Reforms of the 1990s in Estonia”. *Qualitative Sociology Review* 3(2): 144-170;
- Derman, N. (2007) Этнический аспект эволюции семьи в современной Эстонии. *Социологические исследования*, 9, 93-98. ISSN 0132-1625.

In 2007 the Institute fulfilled three grants of the Estonian Science Foundation and three target financed topics: “Impact of Lifelong Learning on Life Course and Social Cohesion in Estonian Society”, “Changes in the Socio-economic Environment in Estonia: Adaptive and Coping Strategies of Families” and “Consolidation of Democracy in Multicultural Society”.

The Institute participated in numerous international projects. In 2007 fulfilment of the 6th EU Framework Programme project “Peace Processes in Community Conflicts” (Raivo Vetik) ended. Good headway is making the 6th EU Framework Programme project “Towards Life-long Learning Society in Europe: The Contribution of Educational System”, which the Institute co-ordinates (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. The Institute also participated in European School Survey Project on Alcohol and Other Drugs (ESPAD), uniting researchers from 35 European countries.

Very important continues to be the participation in European research networks TIES and IMISCOE, focussing on the topic of integration of the second-generation migrants.

In 2007, a reform of structure took place in Tallinn University, as a result of which the whole sociology related education concentrated in 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 the Riigikogu and the State Chancellery. Serving as an example is the participation in formation of the strategy of “Integration programme of Estonian Society for 2008–2013”.

## ESTONIAN NATIONAL MUSEUM

Associated with the Estonian Academy of Sciences  
21.12.2006



Founded 1909

Personnel: 92, of whom 15 researchers

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Director: Krista Aru, Tel: +372 735 0403, Fax +372 742 2254,  
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In the outgoing days of 2006, the Estonian National Museum adopted its strategic plan of development for 2007-2012. Discussions and disputes dragged on for months and involved the whole personnel. We did not draft the plan of development just because it was demanded of us. We drew the plan of development for ourselves, because in the contemporary world, where there are many various options for activities, an institution needs to know, where it is heading, why and how to develop further on. Although it may seem that the goal of the Estonian National Museum for the nearest years is as clear as can be – to go flat out, to get the main building of the Museum rise at Raadi – the more essential so is to answer, in the timely manner the questions, determining the contents of the building to be erected. A building, howsoever grand and exceptional by its architecture, is not yet a museum. A building is a possibility, containing seeds of development.

Key words of the activity of the Estonian National Museum for the coming years are: knowledge basedness, interdisciplinarity and co-operation, openness.

### A KNOWLEDGE BASED MUSEUM

Museum is, already by its essence, knowledge based: chance and incompetence should not find place in the collections of the museum, telling *via* history of culture, or in the activity, directed at visitors. Every exposition is preceded by research. Preparation of every programme, be it presenting the costumes and mores of folk culture or introducing into the modern time the traditional possibilities of handicraft, implies the need to earlier make everything clear to oneself.

In 2007, the Museum made headway in the direction elected. The expositions meeting with lively interest and excellent repercussion “The living folk costume: folk costume tradition in Estonia and Finland” (in co-operation with Finnish National Museum and Finnish Centre of Folk Costumes), “The Soviet style dispatch into life – the summer days of the youth in the ESSR”,

“The colours of the Norden – handicraft of the Lapp” etc. offered not only the joy of discovery and recognition, but also several intellectual and practical programmes of activities, souvenirs and events to visitors in every age. The co-operation projects directed at children otherwise able (“My own sign” jointly with Kaagvere Special School within the framework of the national programme “Crime Prevention”, with children’s home “Cuckoo’s nest” etc.) were able to fulfil the educational and training goal posed, and they proved, that knowledge and skill to transfer the knowledge will make an inimitable learning centre out of the Museum. Hand in hand in the Museum go the theoretical knowledge and application of knowledge, aesthetical perception and spiritual emotion. And the most important – it is always time to stop over here. When a certain knowledge remains at first strange and distant, there is always the right and possibility to return to it. Proceeding from the conviction collected in practice of the need for museum as an educational institution, the Estonian National Museum will make all efforts, so that the museum education would become part of curricula of our comprehensive schools.

#### INTERDISCIPLINARITY AND CO-OPERATION

The aspiration of the Estonian National Museum to evolve, on the basis of its research, into an institution comprehensively studying the cultural space has gained impetus thanks to new interdisciplinary research topics and directions. Researchers of the Estonian National Museum were executors of several research grants funded by Estonian Science Foundation (research of everyday cultures, impact of media culture, information society and the youth, nationalism in the Russian Empire, development of book culture in Estonia etc.), they also participated in several target financed research topics, co-ordinated by institutes of the University of Tartu, and they were executors of five projects in three state programmes.

The Estonian National Museum wishes to stay the centre of one ethnological research work and the accent of our research topics is directly related to our other activity. For that reason, in particular, we need today more than ever before good co-operation with other research institutions and research topics. Research of an ethnologist, folklorist, anthropologist etc. must take place hand in hand. The best example of the possibility of such co-operation is the new pre-reviewed scientific journal in English titled JEF (Journal of Ethnology and Folkloristics), published in 2007 by combined efforts under editing by the Estonian National Museum, issued by the Estonian National Museum, Institute of Estonian and Comparative Folklore and Ethnology of the University of Tartu, Archives of Folklore of the Estonian Literary Museum. The JEF, planned to appear twice per year is expected to offer the newest and the best from the area of research in ethnology, anthropology, folkloristics and museology, and to prove the necessity and viability of those areas of science.

The slash-and-burn agriculture project, launched upon initiative of the Museum, one stage whereof being the genuine slash-and-burn bee, held in Karula in August 2007, consolidates geographers, zoologists, scientists in agriculture, archaeologists, landscape researchers and other specialists in their domain, uniting by specialities also fundamental and applied research. That multi-year project carries, besides new knowledge, also the output to the economy: the possibility of slash-and-burn agriculture, its strengths and weaknesses for agriculture of the present day Estonia will be proven by tests.

The enlargement of the research topics was positive, and so were pithy, interesting and successful all conferences, starting from the anniversary conference held in April, focusing on problems of documenting the audio-visual matter. The series of conferences "Path to the Estonian Museum", of which the first was held at the beginning of 2007 and the second at the end of the year, were designed to handle the history of creation and development of Estonian museums as part of the cultural policy of Estonia. The same applies, starting from the perception and formulating of the need to create museums in the 19th C., until the requirements of today.

International co-operation was very successful with various museums of the Republic of Finland within the framework of several different expositions (exposition of folk costumes, Lapp exposition). The Estonian National Museum is connected with the Hungarian State Ethnographical Museum with preparatory research project on the world of beliefs and thinking of Finno-Ugric peoples. Co-operation with the Copenhagen Workers Museum holds us on the research wave of the Soviet period (the order of collective farms, nutritional culture in the Soviet time and other topics).

The research in the Finno-Ugric direction is born both by research projects of the appropriate topicality and the expositions, seminars, participation at conferences of the Finno-Ugric peoples. The travelling exposition presenting the Finno-Ugric peoples "Finno-Ugrians and the Samoyeds" was completed at the end 2007 and suggests an answer to the question, so very often posed: who are those Finno-Ugric peoples, after all?

#### OPENNESS

We live in an open world, teeming with bits of information, where a person will have ever less time for himself and for one another. Like a counterbalance to multiplicity of information and the velocity of movement the people ever more frequently develop the need to know and sense their roots, their belonging. An imperative need develops to find a fulcrum, which would provide, asking nothing for compensation, the background to the new information and the assurance in duration of times.

The Estonian National Museum wishes to be the progenitor of cohesion and the source from which that assurance develops.

We started issuing our newspaper *Värat*. This our own newspaper appearing twice per year, for the time being, should encourage all those, who have heretofore been distant in sympathy to us, to visit the Estonian National Museum. The newspaper must be our first welcoming call to everybody, who still fear that the Estonian National Museum might be musty and dusty. Our electronic publications and multimedia issues address specifically those, who do not hear the story of the museum exhibit, who have become estranged from books, however feel well before the computer monitor. The Museum is able to converse with them in the language, easily understandable to them, to offer virtual expositions and video programmes from its conferences.

The academic publications will never catch the fancy of everybody, nor will they reach their reading table. That has always been so. But beside academic publications there are also other possibilities: to speak about the present through simple things of the past. Not even for teaching, but for understanding and helping the present and himself. Just such goals are pursued by the series of publications of the Museum "From collection trips of the antiquities" and the series issued in co-operation with Union of Popular Art and Handicraft about the folk art handicraft ("Buchels and boxes of straw", "Embroidered wishes and teaching", "Pouches on waistband, bags in hand" etc.).

The Society of Friends of the Estonian National Museum and the network of correspondents amalgamate the fiery supporters of the Museum. Members of the correspondents network answer the questionnaires composed by researchers of the Museum and help thereby to store in the Museum the everyday work and doings of the people, which is the hardest to come by and the most characteristic part in the people's life. Members of the Society of Friends explain the message of the Museum, upon need they serve the role of a protecting shield round the Museum, and upon need as confirmation of the rightness of our way.

Besides those two "whales of support" the Museum established one more of the kind: its network of photo correspondents. As it is, camera is the witness of situations at the most opportune moments and in very many hands. The best moments of the Estonian life can be today shot by anyone, one need not be Johannes Pääsuke for that. The Museum is now awaiting the most characteristic photos of Estonian life in its photo archives, through portal "Estonian Moments". The moments to be selected to the Museum's photo archives will transmit to the future generations and they would be someday set next to photos from 1928.

Inscribed in the honoured name of the Estonian National Museum has been the responsibility for monitoring the life and wellbeing of its land and people and for eternalising it. We want, more than in the past years, start eternalising the life of people on film and sound carriers. So that even fifty years later the



successors would have an opportunity to see and understand, how bread was made in 2007/2008 or how the family anniversaries were celebrated.

At the same time, the Museum is vested with the obligation to become and to be the uniting bridge not only between yesterday, today and tomorrow, but also between all Estonians in the world. To support the striving of Estonians living in various places of the world to maintain the contact with their roots, to organise their archives for that purpose, to establish new viable undertakings. Development as a pivotal point of Estonian diaspora is one of the directions of the Museum for the nearest years.

Museum has the larger and better opportunity than several other institutions to be the creator of cohesion of the society, to be the mediator of different languages, the provider of feeling of security. This all, however must be done with responsibility, through knowledge, co-operation and openness. On the threshold of its 100th anniversary, the Museum has set those goals.

## **ASSOCIATED SOCIETIES AND UNIONS**

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Scientific societies and unions outside the structure of the Academy are entitled to associate with the Academy, provided that their activities and objectives are in conformity with the activities and objectives of the Academy. Their association with the Academy is effected under bilateral agreements, which specify the purpose of association as well as the tasks and obligations for both of the Parties.

Reviews on the 2007 activities of the societies and unions associated with the Academy have been presented in the chronological order of their association date:

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Estonian Union of the History and Philosophy of Science. . . . .	137
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## **ESTONIAN NATURALISTS' SOCIETY**

Associated with the Estonian Academy of Sciences  
23.01.1998



Founded 1853

Membership: 811 members, 16 honorary members,  
642 trustees

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

A wide spectrum of the Estonian Naturalists' Society (ENS) activities take place in sections and commissions, altogether in 21 subunits. Subunits that work as sections are: section of amateur meteorologists, anthropology, biology, botany, entomology, forestry, geology, and theoretical biology; the Commission of Lakes, the Estonian Malacological Society, the Estonian Mycological Society, the Estonian Teriological Society and Jakob von Uexküll Centre. Commissions with special tasks focus on history of natural sciences, library, natural education, observation networks and plant names. In addition, ENS has assemblies of ecology, of honorary members and the round table of nature conservation.

Every year Estonian Naturalists' Congresses (The Naturalists' Days), conferences, meetings, general assemblies, discussions, scientific and popular scientific meetings, exhibitions are organized. In 2007, nine general assemblies and the series with 3 lectures "From natural scientists to the teachers of natural sciences" were held. The XXX Estonian Naturalists' Congress "The North Estonian clint" took place at Nõva. On the first day lectures were delivered and on the second day the Pakri peninsula was visited. ENS participated at the organization of the conference "Carl von Linné 300 and the natural Museum of the University of Tartu 205". The overview of biosystematics and importance of the scientists of Tartu as well as the importance of Carl von Linné and his connections with the Baltic countries was provided. The state of compiling of the Estonian Register of Species was presented.

Traditional sessions of spring school of theoretical biology "The theory of communication" at Mäeküla, the autumn school of geology "Models and modelling" at Pikajärve and the autumn school of teriology at Järvselja were held. Jakob von Uexküll Centre participated at organization of the symposium "Environmental philosophy and natural thought in the Baltic cultural area" organizing the section "The methods of ecocritics and the theoretical perspectives".

Subunits of ENS held traditional meetings with academic presentations. This year members of the botanical section participated at the trip to Åland organized by Finnish Vanamo Society. The gatherings at spring and autumn camps for those interested in mushrooms, a series of lectures and hikes for learning to know mushrooms, the gathering of the friends of mosses were held. Members of the commission of lakes, entomological section and the malacological society organized and participated several times at training teachers and school students interested in biology.

The gathering of amateur meteorologists was held in the frame of the XXX Estonian Naturalists' Congress. The commission of plant names works actively under the support of the Estonian terminological society.

Estonian Naturalists' Society organizes and supports research. ENS participated in the projects financed by Ministry of the Environment, Environmental Investment Centre, State Centre of Environment Protection, Centre of Forest Protection and Silviculture, Tallinn Environment Department, Estonian University of Life Sciences, Tartu City Government, Cultural Endowment of Tartu and Läänemaa Bird Club.

Within the project "Interactive geological learning modules in Estonian" interactive geological learning material was translated and was arranged for use at Estonian schools. Estonian universities have appreciated the integrative role of ENS, the organizer of geological autumn schools in co-operation between the universities.

ENS participated at the process of working out the environmental education conception and action plan for Tallinn and preconditions for analyses of the nature conservation, related to international environmental education commitments assumed under the Biological Diversity Convention. The investigation plan of leech, protection plan of *Ligularia sibirica*, the first protection category plant and the protection-instruction of the Alatskivi landscape protection area, Anne, Konguta and Keeri-Karijärve nature preserve areas were elaborated. There were carried out the analysis of the 2007 year big game quadratic count, the inventory of the protection-instruction for the island Osmussaar, inventory of protected bird and plant species at island Vormsi Natura 2000 areas, the perished animals on the roads, edition of "The Atlas of Estonian Insects Distribution. Maps 166-219. Dragonflies.", and the accomplishing of telemetric investigation of the flying squirrel's living places.

The monitoring project of the biodiversity and the landscapes includes the collection of data on flying squirrels, bats and snails. ENS continues the development and presentation of the database for observers of nature. From the position of the protection of species it is important to make the know-how available for the officials. This database is a good and interesting device for teachers of schools and nature centres. It is public, everybody can use it. UNESCO "The Planet Earth Year" educational and information programme

and the European Union Nature Directives' reporting forms have been started.

ENS has one of the largest natural science libraries in the Baltic States. It is continuously completed with the aid of budget sums, by exchange and donations. There were 159 604 printed items at the end of 2007. The titles were exchanged with 81 partners from 24 countries. The library has 388 registered readers, who borrowed 4420 items during the year. The library has several valuable editions, first of all among the older books.

In 2007, 5 pieces of printed matter and 1 Internet journal were released by ENS.

List of publications:

- Papers of XXX Day of Nature Researchers. "The Nature of Clint Area". 80 pp.
- Folia Cryptogamica Estonica 43. 88 pp.
- Schola Biotheoretica XXXIII. "Theory of Communication". 99 pp.
- Lepinfo 17 (In cooperation with The Society of Lepidopterologists). 56 pp.
- Schola Geologica III "Models and modelling". 96 pp.
- Released in Internet journal "Friend of Lichen" no. 10/32 pp.

Thanks to the renovation of the heating system, conditions for work at the library were improved. Lack of space at the library was relieved by installing the sliding bookcases.

## **ESTONIAN GEOGRAPHICAL SOCIETY**

Associated with the Estonian Academy of Sciences  
27.01.1998



Founded 1955

Membership: 419 active members,  
20 honorary members, 5 foreign members

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President: Jaan-Mati Punning, Tel: +372 619 9833, +372 525 1095,  
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Scientific Secretary: Helve Kotli, Tel: +372 645 2744, +372 5591 7186

In 2007, three sections were active in the composition of Estonian Geographical Society: section of school geography, section of natural geography and section of human geography; Tartu Department and the Youth Club.

In the reporting year the plan of research of the Society featured three problem areas with the following subtopics:

- Estonian geography (supervised by Member of Academy Anto Raukas)
- Geoecological research in North-Estonia ( Hella Kink);
- Morphology and structure of meteorite craters of Estonian Holocene (Reet Tiirmaa);
- Structure and evolution of the coastal zone of lakes Peipsi and Võrtsjärv (Elvi Tavast);
- Glacier originated surface mode of the Peipsi depression (Reet Karukäpp).
- History of Estonian cartography (supervised by Candidate in Geography Heino Mardiste)
- Map collection of J. von Krusenstern;
- History of geogrpahy (supervised by PhD in geography Erki Tammiksaar)
- Reception of the continent of Antarctic in the scientific literature of the 19th C. and 20th C.

Released in print were yearbook of the Society volume 36, part VIII of publications "Spring. Collection of articles of autumn symposia of the young geographers" and part IX of publications "Heino Tooming. Bibliography. Reminiscences". Almost simultaneously with completion of manuscript of the last mentioned book there was a message received about the Heino Tooming memorial prize established by the European Strong Storms Laboratory.

Members of the terminology commission advised those referring to the Society in issues of terminology of geography and toponymics.

The general meeting of the Society was held on 7 April, where Priit Vesilind spoke on the topic “What Estonia looks like from the outside world”, illustrating the paper with a slide programme of the 20th C. history of Estonia “Estonia. The struggle for Independence”. Priit Vesilind was unanimously elected honorary member of the Estonian Geographical Society and he was handed over the diploma of honorary member of the Society.

The section of school geography of the Society and the Union of Teachers of Biology-Geography organised the school students’ conference “Life environment 2007”, held in Tartu on 20 April.

Youth Club of the Estonian Geographical Society in co-operation with young geographers from Tartu organised an autumn symposium “Muhu monologues”, held in the Muhu island in October 2007. Sightseeings of Saaremaa were presented to the young by active member of the Society Urve Kirss.

The section of school geography of the Society (Ulvi Urgard) participated in co-operation with Institute of Geography of the University of Tartu and Ministry of Education and Research, in solving the scientific-methodical problems of teaching geography, and in composing the subject syllabuses, in preparation of state examinations for gymnasiums in geography and further analysis of examination results, as well as promotion of environmental education and self-education of teachers (Lea Koppel, Ulvi Urgard). There was a culture trip to Moscow organised for teachers (Ulvi Urgard, Kersti Ojassalu), a study trip to Turba nature trail, study days in Tallinn Botanical Gardens and Nature Museum. The members of the Society together with school students travelled to Matsalu to the spring bird watch hike. In April, spring days of teachers of geography were held in Tartu.

The final round of the traditional Geographical Olympiad for school students was held on 27–29 April in Narva Co-educational Gymnasium (Tartu Department).

The Society organised 6 club nights, hearing the recounts of travels and news in the realm of geography.

The traditional county excursion of the Youth Club took the participants to Raplamaa on 19–21 January, where geography of Raplamaa was presented by Are Kont. Under supervision of Tiit Petersoo, the participants went on study hike in Loosalu bog. In July the young visited the Åland on bicycles, in August they went on a hike in Kõrvemaa. Of small islands of Estonia, Kihnu and Ruhnu were visited.

The regular summer excursion of the Society took about 65 geographers in August to the southeast corner of Estonia in Võrumaa, where an excellent overview of the Võrumaa nature, people and perspectives for development of the county was obtained upon initiative of the active member of the Society Elvi Sepp. The situation of internal reservoirs of Estonia after the example of

the Navi lake was presented by Andres Tõnisson. In Värskas and Obinitsa the problems of the periphery and population were discussed.

As earlier, co-operation was developed with many research institutions, organisations and higher schools. Contacts were maintained with scientists of foreign countries. Representation of the Society in International Geographical Union and in Association of Geographical Societies of the Baltic Region, as well as participation of members of the Society in foreign scientific forums, dissemination of publications abroad and visits of foreign scientists to inform themselves as to the work of the Society helped to present the Estonian geographical science also outside Estonia.



## **THE SOCIETY OF ESTONIAN REGIONAL STUDIES**

Associated with the Estonian Academy of Sciences  
27.01.1998



Founded 1939

Membership: 231 members

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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 on 30 March, under consideration was the annual report of the Society (A. Ristkok) and topical issues of regional studies' movement. The respective exposition presented the activity of the Society in 2007. In his report about the series about counties, published by the Estonian Encyclopedia Publishers, Member of Academy Anto Raukas highlighted the compilers of the omnibus volume "Järvamaa" and the Järva County Government, having an excellent co-operation with scientists and local researchers. Student of the Pärnu Hansa Gymnasium Kristjan Nasari presented his regional studies work completed in 2006 on the topic "Hans Kruus" (Member of Academy H. Kruus, Chairman of the Regional Studies Commission of the Academy of Sciences in 1958–1976, whose 115th anniversary was commemorated in the reporting year).

Board of the Society held nine meetings. The majority of members of the Society are in Tallinn (64), Pärnumaa (47), Viljandimaa (28), Järvamaa (21) and Harjumaa (18). All counties have been represented.

The Board created the website of the Society [www.ekus.ee](http://www.ekus.ee). That undertaking was supported by the Rural Life Promotion Foundation. Released from print was "Yearbook 2006" jointly for the Society of Estonian Regional Studies and Estonian National Heritage Protection Society.

Together with the Estonian National Heritage Protection Society, the Society organised a study trip to Järvamaa in August (guided by Georgi Särekanno, Aino Pung). The Society signed with the Paide City Government a common "Declaration of Good Will", for the purpose of finding opportunities in the future for awarding a prize to the author/compiler of the best regional studies work of the year.

The Society maintains contacts with other societies having associated with the Estonian Academy of Sciences (Estonian Geographical Society, Estonian Naturalists' Society, Estonian Learned Society, Estonian Literary Society), Es-

tonian Genealogical Society, Estonian Nature Protection Society. The Society also maintains contract with the Suomen Kotiseutuliitto.

Upon initiative of the Village Working Group of the Society (Kaljo Laas) the manuscript of methods handbook was completed. Additional methods support was offered to specialists in regional studies by several archival seminars. In parishes, the village chronicle seminars were held (Kaljo Idvand), which have also been supported by the association Kodukant. By their location, the researchers in regional studies were active in many interest groups and other associations, more specifically in branches of the Society in Viljandimaa, Järvamaa, Ida-Virumaa and Pärnumaa. Operative in Pärnumaa is also the Society of Native Place Studies. Activists in regional studies are also brought together by J. Hurt Põlva Popular Education Society (15 members), with whom the Society has had long contacts (Enn Esko), Mahtra Museum (Tiia Schmitte) in Raplamaa, Järvamaa Museum etc. The regional studies circle of Tallinn City Museum has been operative 45 years. Together with them, there were organised several joint undertakings: excursion to Paljassaar (Marju Vilbaste, Robert Nerman), Estonian Library of the Blind (Irene Merik, Priit Kasepalu) etc.

Supervision of young activists in regional studies is carried out through Estonian Centre of Youth Work (Ene Luka). In Rakvere, the 39th Estonian regional studies conference of the school youth was held on 12 October. In August, the expedition to Saaremaa of the young activists in regional studies was organised, on the topic "Sörve 2007".

Most of the members of the Society and other activists of regional studies are united with actual research in archives, museums, libraries, collection of data and materials etc. Manuscripts and items were handed over to museums and archives. In their home district, the members organised or contributed efforts to organising *ca.* 30 events, they composed and staged 40 expositions, supervised *ca.* 100 excursions. Reports of the members show that they held and conducted *ca.* 150 lectures and discussion circles, they provided methodological help to co-activists of regional studies (training, supervision, incl. Supervision of school students' research at schools). For presentation of the native place, CD-disks were made (T. Saarist), articles were published (*ca.* 200) and booklets and native place newspapers issued (newspaper of the Pärnumaa activists of regional studies "Koduloolane" has appeared regularly for the fifth year in succession). The Society also has information about handing over to the printers' for publication in 2007 of more than 30 books handling the topics of regional studies.

Following are some of them (the more complete list is available at [www.ekus.ee](http://www.ekus.ee)):

- Birk, V. (comp.). Mihkel Kampmaa and his legacy: Articles of Kampmaa and his bibliography. Tallinn University Publishers, Tallinn. 362

lk. (Proceedings of the Information Centre of the Mother Tongue Teaching).

- Hirvlaane, M. 425 – The first mention of Kanepi as the Kanapieza village. The cultural history calendars of the Kanepi parish 2007 and 2008. Kanepi. 48 pp.
- Jõesaar, M.-A. Until the war demolished it all... Primary school years in Narva 1919-1944. Narva. 167 pp.
- Kriis, J. (comp.), Raukas, A. (ed.). Culture of the Estonian land technology. Estonian Land Technology Centre, Põltsamaa. 368 pp.
- Kusmin, J. (comp.). Every foot leaves its print: A quarter of century of the Sillaotsa Farmstead Museum. Sillaotsa Farmstead Museum. 95 pp.
- Linder, H. (comp.). Kaiu farmsteads and saunas. Juuru. 464 pp.
- Loide, P. (comp.). Nõmme street stories. Collection and preservation of street stories, Nõmme Museum. Nõmme. 110 pp.
- Luka, E. (comp.). 39th Estonian regional studies conference of the school youth, 12 October 2007. (List of students' works). Estonian Centre of Youth Work. 24 pp.
- Luka, E. (comp.). Regional studies works of school students, 25. Estonian Centre of Youth Work., Tallinn. 144 pp.
- Miidel, A., Raukas, A. (ed.). Natural monuments 16, Lääne-Virumaa. Tapa and Kadrina parish. Estonian Academy Publishers. 36 pp.
- Miido, H. Life vigour. People of Pärnumaa. Fascicle 11. Pärnu. 192 pp.
- Mägi, H., Truu, H. (comp.). School fragments of one hundred years: Otepää Gymnasium 1907-2007. Otepää. 238 pp.
- Pae, T., Sokk, H. (comp.). Järvamaa. Nature, time, man. Estonian Encyclopedia Publishers. 567 pp.
- Pärtel, M., Kusma, M. (comp. and ed.). Land remembers... Selected articles from 1977-2007. Dedicated to Vello Lõugas' memory and the 20th anniversary of the Reserve. Jõelähtme. 159 pp. (Proceedings of the Rebala Reserve).
- Ristkok, A., Särekanno, G. Ivand, K. et al. (comp. and ed.). Yearbook of the Society of Estonian Regional Studies and the Estonian National Heritage Protection Society 2006. Tallinn. 110 pp.
- Sokk, H. Fragments from history of government of Järvamaa. Paide. 64 pp.
- Sreiberg, H. (comp.). Past and present of the Linte village. Tartu. 32 pp.
- Šank, R., Sirendi, A., Ristkok, A. et al. (ed.). Estonian agriculture in the 20th C. Vol. II, Overview of agriculture during the occupations. 1940-1990. Part I, Man and society. Part II, Plants. Part III, Animals. Tallinn. 681 pp.
- Tartes, H. The Põlvamaa accordionists 1892–2007. Põlva. 121 pp.

## **ESTONIAN MOTHER TONGUE SOCIETY**

Associated with the Estonian Academy of Sciences

4.02.1998

Founded 1920

Membership: 338 active members, 10 honorary members

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Chairman: Helle Metslang, Tel: +372 522 5074

Scientific Secretary Annika Hussar (since 1.09.2007), Tel: +372 644 9331

Librarian: Helju Kaal, Tel: +372 644 9331



In 2007 the Estonian Mother Tongue Society held 2 conferences, 6 meetings with scientific papers, 7 language days abroad.

Outside Estonia, the Society organised together with Ministry of Education and Research and the local Estonian societies the Language Days in St. Petersburg, Petseri, Hamburg, Moscow, Helsinki, Tampere and Turku. Papers at St. Petersburg 7th Day of the Estonian Language and Memory were widely different by topics. Traditionally, the papers included a review of the Estonian language policy; the participants deliberated about the new orthological dictionary and the present first name use and the code of politeness of Estonians. Within the framework of the language day, six papers presented the Estonian archives and their research. There were papers on acquisition of language and the teaching matter of Estonian. At foreign language days, altogether 34 papers were delivered.

On 27 June the traditional J. V. Veski language conference was held in Tartu. The topic of the XL Veski Day was "The researcher of lexis will have the floor", six papers were included in the programme. The opening paper "How a typologist would describe the lexis of Estonian" was delivered by Urmas Sutrop. Margit Langemets described in her paper "Lexicographer's dream" an ideal dictionary from the position of a lexicographer and user. Enn Veldi spoke on the topic "Pejorativeness and sound symbols in an informal dictionary". Anneli Baran considered in her paper "Image of intensifying expressions – a metaphoric comparison or a metonym used as a hyperbole?" the exaggerating sayings contained in the database of Estonian proverbs and phraseologisms, the substance of which is caricaturing emphasise on silliness. Katre Õim explained in her paper "Metaphor LIFE IS PATH on example of expressions of unluck" the role of concept metaphor in creation of turns of phrase designating mental failure. Sirli Parm spoke at the topic "Temporal meaning of words veel (yet), juba (already), alles (just) and jälle (again)".

The traditional students' conference, with which the Society also celebrated the Day of European Languages, was held on 26 September at Tallinn University. Students of bachelor and master studies of Tallinn, Tartu and Helsinki universities spoke about their language research works, and delivered 12 papers. To close the conference day, Mark Soosaar presented his film programme "Film language – one of the European languages".

At the annual meeting of the Mother Tongue Society on 30 March 2007 the academic paper on topic "Grammaticalisation in Estonian and Finnish and its research" was delivered by Chairman of the Society Helle Metslang, the report of the 87th (2006) year of activity of the Society was presented by Scientific Secretary Terje Potter. The Language Working Group submitted a proposal for novation of the statute of the Society, in order to specify the tasks and status of the language working group. In the respective clause, the Group bases on Regulation of the Government of Republic on norm of the literary language. The composition of the Language Working Group is approved by Board of the Society.

At the meetings with presentation of papers, 18 papers were delivered. Speaking on topic "The Estonian language as seen by a foreign philologist" on 19 February were Reeli Torn-Leesik, Daniele Monticelli and Helju Ridali. The cognitive linguistics was discussed on 9 April by Ilona Tragel, Tuomas Johannes Huumo and Heete Sahkai. The linguistic politeness was considered on 18 May by Krista Vogelberg and Renate Pajusalu (co-authors of the latter Birute Klaas, Karl Pajusalu, Virve Vihman). The autumn meetings of the Society were dedicated to electronic resources of the Estonian language. At the first meeting on 18 October the papers was delivered by Pille Eslon, Jaak Vilo, Kadri Muischnek and Margit Langemets, at the second meeting by Asta Õim, Liina Lindström, Andriela Rääbis and Külli Habicht.

As an achievement in the area of dialects the Society could report about handing over to the publishers of the collection of Mulgi dialectal texts (In ancient Mulgimaa, 270 pp).

The Mother Tongue Society decided to be more active in communication with the youth. For that purpose, the Society started preparations for Internet-based word gathering competition, directed at school students of various age. In Kihnu school, the information day of the Society was held on 14 September.

The language working group of the Society held three meetings on 2007, discussing and approving the proposals to the Board of the Society for novation of statute of the Society and for approval of regulation of the working group. Other topics discussed were problems of pronunciation of foreign names (on the basis of application by Einar Kraudi), guidelines for execution of Japanese words and rules of business names, however no recommendations were as yet adopted on their basis.

Published in 2007:

- Erelt, M., (ed. in chief), Erelt, T. (ed.). Yearbook of the Estonian Mother Tongue Society 52 (2006). The Estonian Mother Tongue Society of the Estonian Academy of Sciences, Tallinn. 252 pp.
- Erelt, M. (ed.). Estonian Language. *Linguistica Uralica*. Supplementary Series. Vol. 1. Second Edition. Estonian Academy Publishers, Tallinn. 414 pp.
- Language magazine *Oma Keel*, no. 1, 84 pp.
- Language magazine *Oma Keel*, no. 2, 88 pp.

The library of the Estonian Mother Tongue Society was replenished in 2007 by 72 items of printed matter, obtained by exchange, donation and purchase. The library keeps on record 5900 inventory items of printed matter.

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

Associated with the Estonian Academy of Sciences

4.02.1998

Founded 1967

Membership: 74 active members, 7 honorary members (of whom 4 outside Estonia), 9 corporate members

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<http://www.baer.emu.ee>

Chairman: Jaak Aaviksoo, Tel: +372 737 5500

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

Estonian Union of the History and Philosophy of Science divides into Tallinn and Tartu branches. It is member of Baltic Association of the History and Philosophy of Science and member of International Union of the History and Philosophy of Science, of which one embraces the history of science and technology and the other the logic, methodology and philosophy of science.

The Board of the Union met once in 2007, and the general meeting was held on 22 January. The general meeting approved the activities report for 2006 and the working plan for 2007, which included further compiling of the Biographical Lexicon of the Estonian Science and organisation of the seminar "Scientific research: goals and methods". Both goals set were achieved. On 10 May, the Union held in co-operation with the Department of Philosophy of the University of Tartu the conference "Scientific research: goals and methods". The conference was attended by *ca.* 50 people and on its eve, the volume in the serial issue of the Union "History of science and today. XI" appeared. By the end of the year, the manuscript of volume 3 of the Lexicon was completed, to which both Tallinn and Tartu branches had contributed much. The editorial board of the Lexicon was submitted the vocabulary of entry words of volume 4 of the Lexicon.

In 2007, the Tartu branch of the Union continued monthly meetings with the Academic Baltic German Cultural Society in Tartu with presentation of scientific papers. Altogether, 9 meetings with presentation of papers were held. In January, the members of the Union heard report of Economic Counsellor of Federal Republic of Germany Ines Gessner "Priorities of the programme of Germany during the EU Presidency"; in February Director of the Pushkin Museum Alla Belenkova delivered a paper "Sons of the seafarer Adam Johann von Krusenstern"; in March the librarian of the University of Tartu Geiu Rohtla delivered a paper "University of Tartu and music in the 19th C. 200 years of appointment in office of the director of music at Tartu Imperial University"; in April the members of the Union heard explanations of curator

of exposition of the Historical Museum of the University of Tartu Terje Lõbu to the exhibition “200 years from termination of the first Russian voyage round the world under leadership of Adam Johann von Krusenstern”; in May senior researcher of the Tartu Observatory Tõnu Viik spoke at the topic “Johannes Kepler’s life and work”; in September members of the Union heard in the affiliate of Historical Museum of the University of Tartu in the Old Anatomic Theatre the explanations of guide Merje Mets on the topic “Old Anatomic Theatre of the University of Tartu and the medical scientists having worked there in the 19th C.”; in October Professor Emeritus Helmut Piirimäe delivered a paper “Foundation of the University of Tartu – discussions”; in November members of the Union heard paper by researcher of Department of History of the University of Tartu Sirje Tamul “Manors of Livonia as sources of grants of the Imperial University of Tartu” and in December the paper by senior researcher of the Estonian University of Life Sciences Toivo Meikar “Northwest forest of the town of Kuressaare – the object of symbiosis of conflicts of man and nature”. There was organised a field trip to Raadi, to look at the collections of the Estonian National Museum.

At the meeting of Tallinn branch of the Union, an overview was presented about the decisions of the annual meeting, held in Tartu.



## **ESTONIAN LEARNED SOCIETY IN SWEDEN**

Associated with the Estonian Academy of Sciences

19.03.1999

Founded 1945

Membership: 97 active members and 3 honorary members.

Address: Ramviksvägen 214, SE-12264 Enskede, SWEDEN

Southern Swedish Department: c/o I. Martinson, Blåmesvägan 40,  
24735 Södra Sandby, SWEDEN

Chairman: Ants Anderson, Tel: +46 8 913 833,  
ene-ants.anderson@globalnet.net

Secretary: Diana Krull, Tel: +46 8 162 852, diana.krull@ling.su.se

Chairman of Southern Swedish Department: Paavo Roos, Tel: +46 4226 0334

Secretary: Indrek Martinson, Tel: +46 465 7308,  
indrek.martinson@fysik.lu.se

The Estonian Learned Society in Sweden incorporates the Estonian scientists in Sweden and is a forum, where they can present their works in Estonian.

In the reporting year, the Society held in Stockholm, in the Estonian House the annual meeting and five meetings with papers, incl. a ceremonial meeting to celebrate the 375th anniversary of founding of the University of Tartu. There was an outing/study tour organised in Sigtuna.

At the annual meeting on 5 February the jurist Sirle Sööt delivered a paper "Pivotal question of Waxholm/Laval case to the European Court of Justice". The meetings with papers handled various topics: "Rhododendrons" (Kaarel Voitek), "Convent of Pirita earlier and now (Ruth Rajamaa); "New and interesting issues of Estonian literature" (Ülle Langel); "The University of Tartu of the Swedish period" (Aleksander Loit); "Personality derangements" (Hiie Hallik).

On 2 December, there was held the ceremonial public meeting of the 88th anniversary of the University of Tartu. A scientific paper was delivered by Professor Hain Rebas on the topic "Destruction of Sigtuna in 1187, one more time". The Stockholm Estonian Mixed Choir performed.

In September there was organised a field trip to Sigtuna, with paper "History of the town of Sigtuna" delivered by Professor Aleksander Loit. Participants looked at the historical places of interest, and also the memorial plaque of the Estonian Gymnasium beside the Town hall, they visited the memorial exhibition in the Sigtuna Museum.

Part of the archival materials of the Society dating from 1971–1999 and one dossier of archival holdings of the Estonian Scientific Institute were handed over to the Library of the University of Tartu.

At the annual meeting of the Southern Swedish Department of the Society on 4 February a paper was delivered by Professor Indrek Martinson on the topic “Paul Keres – the most famous Estonian over the years”.

On 20 April, the 60th anniversary of the Southern Swedish Department was celebrated. Participants spoke about the events relating to the history of the Southern Swedish Department of the Society (Paavo Roos and Ants-Michael Uesson, Kristiina Savin), about the bridge builders (Kristjan Haller), about the structure of the Universe (Jaan Einasto) and “About one book” (Jaak Peetre).

The 375th anniversary of the University of Tartu was celebrated (speakers P. Roos, A.-M. Uesson, I. Martinson, K. Savin). At the public meeting dedicated to the 88th anniversary of the University of Tartu, with the Estonian language as the language of teaching; paper “Importance of figure in the world of microbes” was delivered by Docent Nora Ausmees.

## **ESTONIAN LITERARY SOCIETY**

Associated with the Estonian Academy of Sciences  
23.01.2001

Founded 1907

Membership: 287 members, including 29 lifetime members,  
16 honorary members and 21 regional representatives

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Scientific Secretary: Marja Unt, Tel: +372 7427 079, [eks@kirjandus.ee](mailto:eks@kirjandus.ee)

Tallinn representative: Kristel Kiigemägi, Tel: +372 56 644 243,  
[kristelki@email.com](mailto:kristelki@email.com)

In 2007 Estonian Literary Society (hereafter Society) was first and foremost focused on celebrating its 100th anniversary. Two big anniversary events took place in Tallinn and in Tartu; a mobile exhibition “Estonian Literary Society – 100” was compiled and presented in many cultural centres across Estonia. 2007 was also a year of renewing contacts and extensively introducing the history and activity of the Society.

On March 14 the traditional annual survey meeting took place where the presenters gave comprehensive overviews of poetry collections, prose fiction, plays and literary criticism published in 2006.

In March the Society also organised the first event of the 100th anniversary celebration. A conference took place in the hall of the Estonian Academy of Sciences. The presentations focused on different periods of the history, the various fields of activity, and the present function and opportunities of the Society.

In April Literature Festival Sotsia: For People took place in Tallinn. The aim of the festival was to bring literature to the people. More than 30 writers and critics from Estonia, Finland, and Belorussia took part in various events of the festival programme. Among other things the programme included an event dedicated to the works of Jüri Ehilvest, sound and word games presented by members of Tartu Young Authors League, and an analysis of the works of female poets.

On May 3–5 Prima Vista Literature Festival took place in Tartu with the last day of the festival celebrated in Võru. The festival was organised by NPO Tartu Literature Festival Prima Vista in co-operation with Estonian Literary Society, Estonian Writers’ Union, Library of the University of Tartu, and Tartu Public Library. This time the festival focused on the interactions between literature and other forms.

On June 1–2 the 15th Nüpli Spring School organised by Estonian Literary Museum and the Society took place. The topic at that time was “How to Tell

Literary History?” The participants concentrated on analysing the phenomenon of literary history.

In June the mobile exhibition “Estonian Literary Society – 100” was opened in the Writers’ House in Tartu. After the opening the exhibition began to tour around libraries and other cultural centres across Estonia. The exhibition which was compiled to celebrate the 100th anniversary of the Society is based on documentary and research material on the history of the Society. Among other things the exhibition includes the bibliography of books published by the Society and pictures of people who have been involved in the activities of the Society. The aim of the exhibition is to introduce the history of the Society, and also its position in Estonian culture and cultural history, to distinguish people and institutions historically connected to the Society, and to remember the mottos and purposes of the Society throughout time.

In October an event was organised in co-operation with Ilmamaa Publishing House and the Tartu branch of the Estonian Writers’ Union to introduce the book “Artur Alliksaar mälestustes” (Artur Alliksaar in Memories) published by Ilmamaa Publishing House.

The culmination of the anniversary year arrived on November 24th when several anniversary events took place in Tartu. The day began with a symposium held in the Assembly Hall of the University of Tartu. The main issues discussed were the problems concerning the Estonian language and education; the role of the Society in the history of Estonian book was also emphasised. The new honorary members of the Society were nominated and congratulated. The symposium was followed by a discussion Literature and Internet, where the advantages and disadvantages of the Internet as a means and an environment were discussed. The main question of the discussion was whether or not the Internet can change the literary situation and reading habits. After the discussion a play “Two on the Bench, Three around” written by Peeter Olesk and directed by Kalev Kudu was performed. In the evening a book “One Hundred Years of History: Estonian Literary Society 1907–2007” (a book version of the anniversary exhibition) was presented.

At the Tallinn branch of the Society several series of events continued, including poetry evenings of the series “Umbluule” (Poetryabout), seminars about radio drama organised in co-operation with Radio Theatre, and criticism seminars. In addition seminars about children’s literature were organised in co-operation with Tallinn Central Library and the Estonian Children’s Literature Centre.

The Society’s publications in 2005 include:

- Värske Raamat (Fresh Book) no 3 (95 pp)
- Vihik Quarterly vol. 12 (108 pp)
- Sada aastat ajalugu: Eesti Kirjanduse Selts 1907-2007 (One Hundred Years of History: Estonian Literary Society 1907-2007) (47 pp)

## **ESTONIAN LEARNED SOCIETY**

Associated with the Estonian Academy of Sciences  
23.01.2001



Founded 1838

Membership: 104 active members, 15 honorary members

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Vice-Chairman: Heiki Valk, Tel: +372 737 5653, [heiki.valk@ut.ee](mailto:heiki.valk@ut.ee)

The Estonian Learned Society is a scientific society operating at the University of Tartu bringing together representatives of sciences related to Estonia. The goal of the Society is to present and mediate to the public the newest results of research and also to providing opportunities to get experience in academic presentation for the younger scientists.

During 2007 there were 14 working meetings with the total of 313 participants – 154 members and 159 guests. 14 papers were delivered. The areas of topics distribute as follows: history (9), history of law (2), archaeology (1), folklore (1), geography (1). Attendance was at its height at Mati Laur's paper "Sinning against the sixth commandment" (43 participants), Tiit Rosenberg's paper "Cholera and war in the Baltics 1853–1856" (38 people) and Marten Seppel's paper "What is serfdom?" (36 people). There were no days with papers and conferences.

In 2007 appeared the collection: "Natural sacred places – values and protection" as Proceedings of the Estonian Learned Society XXXVI, the monograph by Ott Kurs "Geography in Estonia. Geography and Geographers in the 20th C." in the series of Letters of the Estonian Learned Society VIII, and the yearbook of the Estonian Learned Society 2004/2005.

In co-operation with the town of Viljandi, archaeological excavations were carried out in the Viljandi Castle Park. In the ski-jumping hill, the remains of the besieging contraption of 1223 were studied, in co-operation with the Department of Archaeology of the University of Tartu. In the ruins of the Order Castle, research works with a view to conserving the stone walls were continued near the partition walls of the eastern wing, beside the choir room of the castle chapel and on the western slope of Kaevumäe. In Viljandi old town, archaeological surveillance works were carried out in Posti and Tartu street. There were archaeological surveillance works carried out near the Vastselliina castle at Piiri tavern and in Karksi Order Castle.

## **ESTONIAN MUSICOLOGICAL SOCIETY**

Associated with the Estonian Academy of Sciences

21.06.2004

Founded 1992

Membership: 56 active members, 1 honorary member

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<http://www.muusikateadus.ee>

Chairman: Toomas Siitan, Tel: +372 529 9117, tsiitan@estpak.ee

Estonian Musicological Society brings together people entertaining the interest to scholarly or scientific study of music and supports practicing of all areas of music in Estonia.

The most important event, in the organisation of which the Society participated was the Third Conference of Interdisciplinary Musicology (CIM07) in Tallinn on 15-19 August. The permeating topic of the conference was SINGING, which was tackled from widely different angles of view of research in music. The main organiser was Member of Academy Jaan Ross, the academic supervisor was Professor of Systematic Musicology of the Graz University Richard Parncutt. International partners were European Society for the Cognitive Sciences of Music (ESCOM), International Musicological Society (IMS) and the European Seminar in Ethnomusicology (ESEM). Among the participants of the conference with over one hundred papers were leading researchers in the area from the whole world.

Every year the Society organises two meetings with papers, in spring in Tartu and in autumn in Tallinn. On Tartu Day April 14, Member of Academy Jaan Ross celebrated his 50th birthday, and the papers delivered focused on his domains of research. Majority of papers came from the University of Tartu (Holger Berg, Tiiu Ernits, Geiu Rohtla, Niina Aasmäe, Aleksander Danilevski), and also from Estonian Literary Museum (Janika Kroonberg) and Estonian Music and Theatre Academy (Maile Nairis). Presented too was Professor Jaan Ross' book "Благозвучие: Объективные предпосылки консонантности в музыке" (St. Petersburg, 2006).

On the autumn Leichter Day in Tallinn on 29 October, the main guest was Professor Emeritus of Connecticut University Avo Sõmer with the paper "Modernism of the Swedish symphonic music dating from the Tubin period".

The Society also participated at the event "Researchers' Night 2007" held upon initiative of the European Commission with the lecture-concert "Pre-history" of the Estonian music: baroque music in Tallinn and Narva" in the Academy of Sciences House on 28 September. The night "Scientists in the world of music" was moderated by Chairman of the Society Professor Toomas Siitan.

The tradition of the Society is also to organise a cultural history hiking tour at the beginning of September. In the reporting year Hiiumaa was visited – programme of the two day hike was composed and the hike was led by Professor Emeritus of the Tallinn University Kaalu Kirme.

## **ESTONIAN PHYSICAL SOCIETY**

Associated with the Estonian Academy of Sciences  
14.06.2005



Founded 1989

Membership: 181 active members and 4 honorary members

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<http://www.fyysika.ee/efs>

Chairman: Kaido Reivelt, Tel: +372 737 4623, [kaidor@fi.tartu.ee](mailto:kaidor@fi.tartu.ee)

Traditional Estonian Physics Days were held in 2007 as two sessions. The 1st session of the XXXVII Physics Days was held jointly with the Finnish Physical Society in Tallinn on 15–17 March (moderator on part of Estonia Raivo Stern). The invited paper was delivered by Arvi Freiberg. The 2nd session of the Physics Days and the XXIX Teachers of Physics Days were held in Tartu on 20 and 21 March. Delivered were 19 verbal and 5 poster papers (see [www.fyysika.ee/efs](http://www.fyysika.ee/efs)), there were over 170 participants. The Physics Days were organised by Arvo Kikas, Ilmar Kink, Koit Muring and Jaak Jõgi.

Within the framework of the Physics Days, on March 20 the general Meeting of the Society was held, approving the activities report and the financial report of Board of the Society; Kaido Reivelt made a summary about the events of the popularising activity of the Society. Elected as new members of the Board were Helle Kaasik, Madis Kiisk and Margus Saal (Institute of Physics of the University of Tartu), Silver Lätt (Department of Physics of the University of Tartu) and Anu Reinart (Tartu Observatory). The working day was consummated by a traditional social evening.

On the Physics Days, there was issued the annual prize of the Society to Jaan Kallas for development of multifractal formalism and for its application in non-solid physics. The letter of merit of the Society was granted to Andi Hektor for organising the schools of young physicists. The student prize of the Society was awarded to Heli Valtna for the work “The possibility of creating superluminal waves” and the school student’s prize to Martin Jõgi for the work “Measurement of dose radiation in my native place” (supervisor teacher of Lääte Co-educational senior high school Jaak Jõgi). The prize for the best students’ poster paper of the Physics Days was granted to Aleksander Lissovski’s poster “VUV-VIS spectroscopic study of pulsed high-pressure volume discharge in argon”.

The yearbook of the Society 2007 came out (editors Anna Aret, Helle Kaasik and Piret Kuusk). The list of the Society ([seltsid.efs@lists.ut.ee](mailto:seltsid.efs@lists.ut.ee)) is managed by Jaak Jõgi and website of the Society ([www.fyysika.ee/efs](http://www.fyysika.ee/efs)) is edited by Kaido Reivelt.



At the 52nd Physics Olympiad of Estonian School Youth held in March the Society granted a special prize (annual subscription of the magazine “Scientific American”) to Stanislav Zavjalov of Narva senior high school of the Humanities.

There continued the events of the Society popularising physics. Upon initiative of Taavi Adamberg, Science Bus Ursa Major carried on its work, so did the development of the physics portal ([www.fyysika.ee](http://www.fyysika.ee)), and as a result of an effort of almost sixty present and future physicists, there was organised the Star Family Days “Täpe” (Fleck) 2007. Besides the above, the Society participated at various fairs and events – at the events of the fairs Intellektika (Intellect) and Teeviit (Road guide), at events of the Researchers’ Night in Tallinn and at events of the 375th anniversary of the University of Tartu in the whole of Estonia.

Upon initiative of Jaak Jõgi, there was the fourth summer school of teachers of physics of the Society held in Nõo on 25 and 27 June (25 participants). Knowledge was shared by researchers of the Institute of Chemical Biology and Physics, Department of Physics of the University of Tartu, Institute of Physics of the University of Tartu and Tartu Observatory. Within the framework of the summer school, there was a seminar held “School physics reform” with nearly 30 participants.

Upon initiative of young physicists of the Society, there were two schools of physics for the young held in the reporting year (see also [www.fyysika.ee/kool/](http://www.fyysika.ee/kool/)). On 15-17 June, Arbavere hosted the fifth summer school of young physicists of the Society. Participating were 66 students from Tallinn University, Tallinn University of Technology and the University of Tartu. There were 17 hours of academic lectures and seminars and the students’ poster and verbal paper session. Organisers were Maarja Grossberg, Andi Hektor, Ahto Kuusk and Mario Mars. On 19-21 October Kääriku hosted the annual autumn school of the Society for exact sciences, with 101 students, researchers and faculty members attending. 15 hours of lectures and seminars were heard, and a students’ session with posters and speeches was held. Organisers were Maarja Grossberg, Andi Hektor, Ahto Kuusk, Rünno Lõhmus, Silver Lätt, Kaido Reivelt and Merike Martsepp.

The Estonian Physical Society is member of the European Physical Society.

## IN MEMORIAM

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Member of Academy *Karl Rebane*  
11.04.1926–4.11.2007

On 4 November 2007, at the age of 82, Member of Academy Karl Rebane deceased.

Karl Rebane was born on 11 April 1926 in Pärnu. In 1947 he graduated from Tallinn Secondary Science School and in 1952 from Leningrad (St. Petersburg) State University, where he defended the Candidate thesis in physics in 1955. Karl Rebane defended his Doctoral thesis in physics and mathematics at the Institute of Physics of Belarus Academy of Sciences in 1964. He was awarded the Professorship theoretical and mathematical physics and physics of solids in 1968.

In 1961 Karl Rebane was elected Member of the Estonian Academy of Sciences, in 1976 Corresponding Member of the Academy of Sciences of the

USSR (since 1992 the Russian Academy of Sciences) and in 1987 Member of Academy in optics. Karl Rebane was also Member of the European Sciences and Arts Academy (Salzburg) and Member of the Academy of Europe *Academia Europaea* (London).

In 1958–1968 Karl Rebane was a faculty member of the University of Tartu, teaching theoretical physics, organising and heading the Department of Experimental Physics. In 1976–1993 he founded, together with the Institute of Physics, and headed the Joint Department of Laser Optics. Since 1956 his activities were involved with the Estonian Academy of Sciences. He worked as Senior Researcher and Deputy Director for Research at the Institute of Physics and Astronomy during 1956–1964, Academician-Secretary of the Division of Physics, Mathematics and Engineering in 1964–1968, Vice-President in 1968–1973 and President in 1973–1990. Karl Rebane was Director of the Institute of Physics in 1973–1976, Head of Laboratory and Chief Scientist in 1990–1992, Chief Scientist of the Estonian Biocentre in 1993–1996. Karl Rebane was Professor Emeritus of the University of Tartu from 1994.

The main spheres of scientific work, which Karl Rebane was occupied with in a broader sense were: theoretical physics as applied in optics and physics of solids; optical covers; secondary irradiation of impurity centres, zero-phonon lines as an optical analogue of Mössbauer  $\gamma$ -resonance line; persistent spectral hole burning and its applications; single impurity molecule spectroscopy etc.

He further published papers on issues relating to connections between philosophy and physics: entropy problems pertaining to environmental conservation, search for extraterrestrial civilisations, causality and free will in physics and exposure of the contemporary world to high-tech terrorism.

Karl Rebane authored about 300 titles of scientific publications. He obtained Certificate of Discovery on hot luminescence together with Members of Academy Vladimir Hizhnyakov and Peeter Saari.

Achievements of Karl Rebane as scientist and organiser of science were highly valued. Among other tokens of recognition, in 1965 Karl Rebane as a member of a team received the Estonian State Science Prize for theory of impurity spectra of solids. In 1981 he was awarded the P.N. Lebedev Physics Gold Medal of the USSR Academy of Sciences for contributions in physics. In 1996 he received, as member of a team the Estonian Science Prize for single molecule spectroscopy. In 2001 he was awarded the National Prize for Long Productive Research. In 2006 he was awarded the 3rd Class Order of the White Star.



Member of Academy *Juhan Peegel*  
19.05.1919-6.11.2007

On 6 Novembril 2007, at the age of 89 Member of Academy Juhan Peegel departed.

Juhan Peegel was born on 19 May 1919 in the parish of Põide. In 1938 he graduated from Saaremaa Coeducational Gymnasium. Before enrolling in the Department of Philosophy of the University of Tartu in 1939 he sat on the editorial board of the daily "Meie Maa". After active service in Army of the Republic of Estonia, he was transferred to the Estonian Rifle Corps of the Red Army. After demobilisation, Juhan Peegel worked, besides studying, at the editorial board of the daily "Postimees" ("Edasi"). Juhan Peegel graduated from the University of Tartu, Department of History and Philology in 1951. He defended his Candidate's thesis on morphology of the language of Estonian folklore in 1954.

In 1953–1978 Juhan Peegel worked at the Department of the Estonian Language of the University of Tartu on faculty as lecturer, senior lecturer, Docent and Professor. In 1954, on the initiative of Juhan Peegel, the University of Tartu started to train students majoring in Estonian philology, for subsequent work

in press. He served as Dean of the Department of History and Philology in 1964–1967. In 1975 Juhan Peegel defended his doctorate in philology at Moscow University.

Juhan Peegel was elected Member of the Estonian Academy of Sciences in 1977, and was awarded Professorship in 1978. Until 1986 he was Head of the Department of Journalism, in 1987–1993 he was Professor-Consultant at the same Department. Since 1993 he was Professor Emeritus of the University of Tartu. He was Member of Estonian Writers' Union (1956) and Member of Estonian Journalists' Union (1973).

Juhan Peegel blazed the trail in Estonia in training the journalists and in research on journalism, he authored and compiled several journalism-related collections and textbooks. He published a wealth of articles on the Estonian language, history of literature and journalism; he participated in compiling the anthology "Estonian folk songs" and in composing the scientific issue of "Kalevipoeg". In 1977 his novel "Jumping the host" won Fr. Tuglas Novel Prize. His story "I fell in the first summer of war" was awarded the 1980 Prize of Soviet Estonia. His multi-volume publication "Poetic synonyms of the noun in Estonian folk poetry" was awarded the 1993 National Prize in the Humanities. In 1996 Juhan Peegel was decorated with the 4th Class Order of the National Coat of Arms. In 1998 he was awarded the National Prize for Long Productive Research.

The Estonian public elected Juhan Peegel among one hundred great figures in the history of the 20th C. Juhan Peegel's work of life was of pioneering significance for preservation and development of Estonian cultural heritage.

## REMEMBRANCE

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For the 100th anniversary of Member of Academy *Aksel Kipper*  
(a photo from 1953)

Aksel Kipper was born on 5 November 1907 in Viljandimaa to an agronomist's family. His youth passed in the Holstre parish, Paistu. After finishing the Viljandi gymnasium in 1926, inspired by astronomy he proceeded to study in the University of Tartu, at Mathematics and Natural Sciences Department, where the formation of the young scientist was deeply influenced by his teachers Professor Taavet Rootsmäe and Professor Ernst Öpik.

After graduation from the University in 1930 Aksel Kipper defended his Master's thesis "Density in the open star-cluster Messier 39, complete with a method to calculate it". The basic idea of the research was finding in star-cluster by movement of stars the volume density of the local matter, which

has been the basis of work of many later researchers and has led to the search of the so-called hidden matter in galaxies and galaxy clusters.

After graduating from the University Aksel Kipper proceeded to work as assistant of Tartu Observatory. He became interested in physics of Cepheids (stars of strict periodicity and variable brightness). On the basis of research he completed the Doctor's thesis "Movement of gas in the atmosphere of pulsating star", which he defended in 1938.

Besides theory Aksel Kipper was also keen on observation activity, the astronomic apparatus building and popularisation of science. Apart from stargazing A. Kipper also participated in observations of 1932 Moon eclipse and of 1933 star shower. He prepared the objective prism to Petzval astrograph and took photos of Cepheids with it, as well as the 1934 Hercules constellation nova spectra. He also designed a simple self-regulating electrophotometer for measuring the obtained spectra from photoplate. A. Kipper's attitude to results of astronomical science and astronomy as part of human culture was revealed in his brochure "Outer space and stars", which appeared in print in 1936.

Research of spectra of planetary nebula, too became one of the favourite topics of Aksel Kipper, because thanks to extraordinary rarity of gas, those physical elementary processes take place in the unhindered form. Finding out the importance of two-photon processes in formation of continuous spectrum of planetary nebula is one of his most important achievements, which has met with world recognition and was published in 1950 and 1952. In the same period, A. Kipper also did extensive research in dispersion of light quanta in atmosphere of the Sun.

In 1941 Aksel Kipper was promoted to Professor of the University of Tartu and Deputy Pro-Rector for Studies. In 1944–1946 he worked as Head of Department of Physics and later Department of Theoretical Physics. Upon his initiative, teaching of physics was reorganised in the University and it was brought into conformity with the level of quantum theory of that time.

In 1946 Aksel Kipper was elected Member of the Estonian Academy of Sciences and Vice-President, in office until 1950. He made an impressive contribution to formation of Tartu institutions of the Academy of Sciences. In 1950 he proceeded to work as Director of Institute of Physics, Mathematics and Mechanics. Upon his initiative it was reorganised into Institute of Physics and Astronomy in 1952. As Director of that Institute, A. Kipper set the goal to establish in Tartu a modern centre of astronomy and promote physical science. His role was instrumental in getting established in Tõravere an observatory with modern buildings, instrumentarium and research topics, which was opened in September 1964.

In the fifties and sixties the interest of Aksel Kipper focused on magneto-hydrodynamical processes taking place in stars. In 1967 he was awarded the science prize for works in explanation the continuous spectrum of planetary nebula with the help of twin emission, and for achievements in elaboration of turbulence theory of cosmic magnetic fields.

In 1973, Institute of Physics and Astronomy split and gave birth to two new scientific institutions, Institute of Physics in Tartu and Institute of Astrophysics and Atmospheric Physics in Tõravere, whose Director A. Kipper was until retiring in 1974. He continued scientific activity as senior scientist until the end of his life.

Aksel Kipper dedicated his last creative period to cosmology, where he moved from problems of cosmic magneto-hydrodynamics to research of electromagnetic and quantum properties of cosmological space.

Member of Academy Aksel Kipper departed on 25 September 1984. He was buried in Tartu in Vana-Jaani cemetery.

Aksel Kipper was granted the honorary title of merited scientist in 1957. He was awarded several State orders and letters of honour. Since 1932 he was member of Naturalists' Society, belonging in 1951–1956 to board of the Naturalists' Society. In 1967 he was elected honorary member of the Naturalists' Society and in 1976 he was awarded the Baer medal. Since 1955 he was member of International Society of Astronomy.

Aksel Kipper's 100th anniversary was commemorated on 2 November jointly with the seminar dedicated to the 60th anniversary of Institute of Physics of the University of Tartu and Tartu Observatory.



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Estonian National Committee for IGU (Chairman: Jaan-Mati Punning, punning@tlu.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: Sven Nõmm, sven@cc.ioc.ee)	International Federation of Automatic Control, IFAC
Estonian National Committee for Mathematics (Chairman: Mati Abel, Mati.Abel@ut.ee)	International Mathematical Union, IMU
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