

*Facta non solum verba*

ESTONIAN  
ACADEMY OF SCIENCES  
YEAR BOOK

ANNALES  
ACADEMIAE SCIENTIARUM  
ESTONICAE

X (37)

2004

TALLINN 2005

ESTONIAN ACADEMY OF SCIENCES

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ISSN 1406-1503

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## FOREWORD

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2004 brought to an end a clearly defined stage in the development of the state of Estonia – Estonia was accepted full member both of NATO and the European Union. Those initial seven months in membership have persuasively testified to the opening up of new opportunities and to the imposing of new obligations, to no lesser extent however to their glaring globalisation. The change in the status of the state aside – and in keeping with long-term traditions – the Academy elected at the end of 2004 the new President and the Board. The fact that the structures of the advanced world are embracing Estonia, may impact on our life significantly more than we ourselves could have anticipated. Let's be able to duly take into consideration the new demands and to make good use of the chances offered.

Approximation of selection of research topics, funding and other organisation of science to usages and needs of an open and developed world has for years been a focus of the activity of the Estonian Academy of Sciences. One just needs recall, for once the initiation of evaluation of research groups, evolution of the criteria of funding the topics, realisation of procedures of funding, setting down the structure of research centres of excellence, creation and upholding the institution of Research Professors. This activity has undeniably been successful, although the rate of progress has strongly depended on political and social processes in Estonia, and will heretofore depend on processes prevalent in the European Union (primarily on implementation of decisions of Lisbon summits).

In the open world, Estonian Academy of Sciences is engaged in close co-operation with several international scientific organisations, e.g. ICSU (International Council for Science), ALLEA (European Federation of National Academies of Science and Humanities), and ESF (European Science Foundation). Meriting special emphasis is integration of Estonian Academy of Sciences with bodies operating with involvement of European Academies, advising politicians and public organisations – e.g. EURAB (European Research Advisory Board) and EASAC (European Academies Science Advisory Council) and partly also affecting, through those bodies, the practical science organisation of the European Union – e.g. ERA (European Research Area), and ERC (European Research Council) – which process has been in evidence for a couple of years, already. The year 2004 has yielded the first outcome, scilicet the role of Member of Academy Jüri Engelbrecht in calling to life ERC. Thanks to political impartiality of experts of the European Academies, they are quite often referred to both by bodies of European Union and several member states, as preliminary experts of tentative political decisions, for appraisal of alternative decisions. This trend will arrive, insofar

as the Lisbon process makes advance, earlier of (rather) later in Estonia. This yearbook manifests several signs to our Academy bracing for a tauter involvement in working on the development of Estonian society.

The major part in the yearbook however is by structure and topics traditional, reporting the activity of the Academy, Members of Academy and associated organisations.

There is a new custom evolving in the Academy of granting named medals. In 2004, the first named medal of the Academy was awarded – Karl Schlossmann Medal was granted to Member of Academy Mart Saarma. Implicative of the need for some changes is the summary of main results of the Academy in the past years and the pending tasks, as revealed in reports by Jüri Engelbrecht, Richard Villems and Ain-Elmar Kaasik at sessions of the General Assembly.

*Leo Mõtus*

## **MEMBERSHIP OF THE ACADEMY**

As of 31 December 2004, the Estonian Academy of Sciences numbered 60 Members of Academy and 17 Foreign Members of Academy, who distributed between the four divisions as follows:

### DIVISION OF ASTRONOMY AND PHYSICS

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

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

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

### DIVISION OF INFORMATICS AND ENGINEERING

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

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

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

### DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

(19 Members of Academy, 5 Foreign Members of Academy)

Members of Academy: Pavel Bogovski, Jaak Järv, Ain-Elmar Kaasik, Dimitri Kaljo, Ilmar Koppel (Head of Division), Hans Küüts, 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, Ivar Ugi.

### DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

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

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

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

In 2003, the majority of Members of Academy carried on as leading expert scientists, doing research and working as staff members in universities.

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

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

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

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

Research and Development Council – Jaak Aaviksoo, Jüri Engelbrecht (until 1 October), Mart Saarma, Richard Villems (starting from 7 December);

Science Competence Council – Enn Mellikov;

Council of Estonian Science Foundation – Rein Küttner and Mihkel Veiderma;

Commission of National Science Prizes – until 24 December: Jüri Engelbrecht (Chairman of the Commission), Hillar Aben, Ene Ergma, Ain-Elmar Kaasik, Dimitri Kaljo, Ilmar Koppel, Hans Küüts and Georg Liidja; starting from 24 December: Richard Villems (Chairman of the Commission), Dimitri Kaljo, Rein Küttner, Enn Mellikov, Jaan Ross, Mart Saarma, Raimund-Johannes Ubar, Raivo Uibo.

Members of Academy Jüri Engelbrecht and Mihkel Veiderma sit on the Sustainable Development Commission, reporting to Government of the Republic

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

Member of Academy Ülo Jaaksoo represents Estonia in NATO Research Committee and in Council of NATO Research and Technology Organisation.

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

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



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

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

Members of Academy Olav Aarna, Jaak Järv, Rein Küttner and Endel Lippmaa sit on the Ministry of Education and Research Advisory Panel for Science Policy.

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

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

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

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

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

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

Member of Academy Anto Raukas is member of Board of Curators of Tallinn Pedagogical University.

Members of Academy Ain-Elmar Kaasik, Jüri Martin, Mart Saarma and Richard Villems are members of Council of Estonian Genome Project.

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

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

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

Heads of Estonian centres of excellence in research are Members of Academy:

- Jüri Engelbrecht – Centre for Nonlinear Studies;
- Ilmar Koppel – Centre of Excellence of Chemistry and Materials Science;

Arvo Krikmann – The Centre of Cultural History and Folkloristics in Estonia;

Endel Lippmaa – Centre of Excellence of Analytic Spectrometry.

Members of Academy Enn Mellikov, Raivo Uibo and Richard Villems are heads of 5th EU Framework Programme Centres of Excellence in Research.

In the reporting year, many Members of Academy were awarded marks of honour, both Academic and national (cf. pp. 63-64).

Members of Academy Jaan Einasto and Ain-Elmar Kaasik became honorary citizens of the town of Tartu.

Member of Academy Jüri Engelbrecht was awarded the Ministry of Education and Research Sign of Merit (no. 1).

Member of Academy Valdek Kulbach was awarded Letter of Commendation of the Narva Town Administration for active work in the Narva Estonian Society.

Member of Academy Anto Raukas was awarded Letter of Commendation of Tallinn Pedagogical University and the Silver Medal, and the Letter of Commendation of the Rakvere Town Administration.

Member of Academy Ene Ergma was elected Foreign Member of Swedish Engineering Academy.

Members of Academy Jaak Aaviksoo and Jüri Engelbrecht were elected members of *Academia Europaea*.

Member of Academy Erast Parmasto was elected Member Honoris Causa of *Deutsche Gesellschaft für Mykologie*.

Member of Academy Arvo Krikmann was awarded the cultural prize of the Baltic Assembly for 2004.

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

## CHRONICLES

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23 January – the international academic seminar “Introduction to global computational system (Grid)” was held in the Academy House (cf. p. 51).

27 January – Session of the Board of the Academy approved the plan of events of the Academy for 2004 and the budget of the Academy for 2004. The session took cognisance of information about the development of international relations of the Academy in 2003 and approved the renewed composition of the Council of Estonian Academic Foundation for International Exchange. The session set up the Karl Ernst von Baer Prize Commission and the Popular Science Book Prize Commission. It approved the new composition of Marine Sciences National Committee. It was decided to award to Vice-President Ene Ergma the Medal of the Academy. The session approved the design of the Karl Schlossmann medal.

28 January – the Hungarian Ambassador László Nikićser visited the Academy and met with President Jüri Engelbrecht.

5 February – Member of Academy Valdek Kulbach delivered a public academic lecture “Building bridges in Estonia”.

12 February – Academy together with the Estonian Central Union of Employers held the roundtable discussion “What the entrepreneurs and the scientists should know about one another?” (cf. p. 50).

14–21 February – Secretary General Mihkel Veiderma sojourned in Washington, taking part in the session of co-ordination committee of joint programme of the US and Estonian oil shale studies, and in the follow-up conference with representatives of the US industrial companies.

16–17 February – President Jüri Engelbrecht was invited as speaker at the scientific symposium “Europe’s Search for Excellence in Basic Research” held in Dublin on the occasion of beginning of the period of Irish Presidency at European Union. The symposium brought together leaders of science and industry and top scientists from 27 European countries.

24 February – in the Academy of Sciences Hall, the national research, culture and sports prizes, as well as F. J. Wiedemann language prize were handed over.

26 February – Estonian Embassy in Riga organised reception in honour of President of the Latvian Academy of Sciences, Foreign Member of the Estonian Academy of Sciences Jānis Stradiņš. The Ambassador Toomas Lukk handed over to Member of Academy Stradiņš the Order of Merit Terra Mari-

ana Cross 3rd Class for promotion of scientific co-operation between the Baltic States and Nordic countries.

3 March – Board of the Academy reviewed the directions of work and development of the Institute for International and Social Studies at Tallinn Pedagogical University (cf. p. 54).

8 March – Latvian Ambassador Edgars Skuja visited the Academy and met with the President Jüri Engelbrecht.

17 March – Academy and the Estonian Science Foundation organised in Tallinn the annual meeting of Nordic member organisations in the European Science Foundation (ESF). There were altogether 33 participants – from Denmark, Finland, Norway, Sweden, Estonia; the observers from Latvia and Lithuania. The keynote speech came from Bertil Andersson, the new executive head of European Science Foundation.

18 March – Bertil Andersson, the executive head of European Science Foundation (ESF) met with President of the Academy Jüri Engelbrecht and Foreign Secretary Dimitri Kaljo, and with members of Board of the Estonian Science Foundation Helle Martinson and Meelis Sirendi.

19 March – Secretary General Mihkel Veiderma and Assistant Secretary General Galina Varlamova visited the Academy of Finland and met with Secretary General Matti Saarnisto.

23 March – President Jüri Engelbrecht and Vice-President of the Italian National Research Council (CNR – *Consiglio Nazionale Ricerche*) Roberto de Mattei signed in Tallinn the agreement on co-operation in research between the CNR and the Academy. Attending the signing ceremony were Deputy Undersecretary of State of Italy Learco Saporito and the Italian Ambassador in Estonia Ruggero Vozzi.

24 March – Member of Academy Anto Raukas delivered a public academic lecture “Possibility of a sustainable development”.

24 March – the Brussels was the seat of negotiations of presidents of Estonian, Lithuanian and Latvian Academies of Sciences Jüri Engelbrecht, Zenonas Rokus Rudzikas and Jānis Stradiņš, in the course of which new additional protocol of trilateral co-operation was signed.

24–28 March – President Jüri Engelbrecht sojourned in the Brussels, participating at the General Assembly of the European Federation of National Academies of Sciences and Humanities (ALLEA). The academic sessions focussed on four problem ranges: rights of intellectual property, relations of science and media, differences between natural sciences and the humanities, the scientific lingua franca.

26 March – President Jüri Engelbrecht and President of the Flemish Royal Academy of Sciences and Arts Mark Eyskens signed, in the Brussels the co-operation agreement between the Academies.

30 March – Session of the Board of the Academy assigned the K. E. von Baer Prize to the head of K. E. von Baer Museum PhD Erki Tammiksaar. Recognised as the best popular science book released in 2002–2003 was composed and edited by Jaak Lõhmus and Rein Veskimäe “Microworld of the Universe”. The session decided to grant Karl Schlossmann medal to Member of Academy Mart Saarma for outstanding results in medical science and related specialties. The session approved the consolidated financial statements of the Academy for 2003 and the consolidated budget for 2004. The session approved the assessment commission of the research grants of the Academy for 2004 (Chairman Member of Academy Ülo Lumiste). The session gave its consent to the proposal of Estonian Society of Music Sciences to associate with the Estonian Academy of Sciences.

1–2 April – President Jüri Engelbrecht participated at the meeting of governing committee of the European Science Foundation (ESF), held at Slovak Academy of Sciences. On agenda was the general strategy of ESF, bringing the Cooperation in the Field of Scientific and Technical Research COST under the umbrella of ESF, and the programme of European Young Investigator Awards (EURYI).

12 April – Member of Academy Erast Parmasto organised a seminar in Tartu “The biosystematics of the 21st century” (cf. p. 51).

13 April – Academy House was the seat of the seminar “Bernhard Schmidt – 125” held jointly with Tartu Observatory (cf. p. 51).

15 April – the Foreign Secretary Member of Academy Dimitri Kaljo presented the Academy to the guests participating at the international seminar held by Tallinn Technical University (Impact of Bologna process on educational systems of different countries), coming from St. Petersburg Polytechnic University, St. Petersburg Electrical Engineering University, Milan Technical University and Catalonia Technical University.

21 April – the annual session of General Assembly of the Academy (cf. p. 20) was the forum where Member of Academy Mart Saarma delivered a scientific paper “Life and death in nervous system”. President Jüri Engelbrecht presented an overview about the activity of the Academy in 2003 (cf. pp. 21-22). The Assembly approved the report of the Academy for 2003 and the budget for 2004.

23 April – Estonian Academy of Sciences organised the annual joint seminar of international relations services of the Academies of Sciences of the Baltic States on the topic of participation in international science organisations. The

invited speakers were member of the Board of Estonian Science Foundation Meelis Sirendi, and Tiina Vihma-Purovaara from Academy of Finland.

6 May – a joint Day of Science of the Estonian Academy of Sciences and Latvian Academy of Sciences was held in the town Valga-Valka (cf. p. 53).

10 May – delegation headed by Vice-Director Jean-Pierre Banâtre of the French research institution INRIA (Institut National de Recherche en Informatique et en Automatique) specialising in informatics and computer science visited the Academy and met with President Jüri Engelbrecht.

11 May – a seminar “Culture and communication in archaeology” was held in the series of seminars “From science to society” (cf. p. 52).

19 May – Members of Academy and members of Energy Council of the Estonian Academy of Sciences visited the Baltic Power Plant and the Estonian Power Plant (cf. p. 55).

20–22 May – delegation of Academy of Sciences of Poland headed by President Andrzej B. Legocki sojourned in Tallinn. On 21 May there was a conference in the Academy, attended also by Ambassador of Poland Wojciech Wroblewski. Presidents signed the renewed additional protocol of co-operation agreement between the Academies, together with accepted list of joint projects for the years 2004–2006. On the same day Member of Academy Legocki visited Tallinn Technical University, Institute of Gene Engineering and delivered a specialist lecture “Genetic heritage and biological diversity: Considerations about the phylogeny of model organisms”.

25 May – Session of the Board of the Academy announced the 2003 student research prizes and set up the respective assessment commission (Chairman Member of Academy Georg Liidja). The session assigned the Estonian Academy of Sciences grants for completion of scientific monographs and popular science books (cf. p. 57). The session approved Ülo Niine to the office of Director of the Estonian Academy Publishers for the next five years.

26 May – President Jüri Engelbrecht participated at the joint session of Estonian Research and Development Council and Finnish Research and Technology Policy Council in Helsinki.

27–31 May – Vice-President Peeter Tulviste represented the Academy in Barcelona at the 78th General Assembly of the union of Academies Union Académique Internationale (UAI), active in the area of the humanities.

30 May – 2 June – Estonia hosted President of National Academy of Sciences of the USA Bruce Alberts, invited by the Academy and Ministry of Education and Research. On 31 May Professor Alberts visited Ministry of Education and Research and delivered a public lecture in University of Tartu on future of science and science education. On 1 June the guest met with Prime Minister

Juhan Parts and delivered a lecture in the Academy House about development of the top science and subsidizing it by the state “The Critical Issue of Capacity Building in Science and Technology for Every Nation”.

4 June – Assistant Secretary General for International Relations Anne Pöitel attended the training organised in the Brussels by European Commission to the members of network ERA-MORE information centre for foreign scientists (possibilities to use the researchers’ mobility portal and communications network CIRCA – Communication & Information Resource Centre Administrator).

9 June – there was a seminar organised by Member of Academy Rein Küttner “Private law based research and development institutions – experience and development”.

10–13 June – President Jüri Engelbrecht was in Ljubljana, upon invitation of Slovenian Academy of Sciences and Arts, to discuss the science policy and strategy related issues.

15 June – President Jüri Engelbrecht attended the first session of the new composition of the European Research Advisory Board (EURAB) in the Brussels. European Commission nominated Jüri Engelbrecht member of EURAB upon proposition of European Science Foundation. (EURAB was set up in 2001 to advise the European Commission in implementation of research and development policy.)

18 June – session of the Board decided to nominate Professor of University of Tartu Karl Pajusalu representative of Estonian member organisations in the humanities’ committee of the European Science Foundation.

18 June – the volume “National science prizes 2004” was presented in the Academy House.

21 June – the association agreement between Estonian Academy of Sciences, and Estonian Musicological Society was signed, by President of the Academy Jüri Engelbrecht and Chairman of the EMS Toomas Siitan.

28–30 June – Foreign Secretary, Member of Academy Dimitri Kaljo participated at the European Academies Science Advisory Council (EASAC) meeting in Amsterdam. (EASAC has been set up by Academies of member states of the European Union, to advise the political institutions of the European Union in issues calling for scientific assessments.)

29–30 June – Assistant Secretary General for International Relations Anne Pöitel attended at meeting and conference of member organisations of network ERA-MORE information centre for foreign scientists co-ordinated by European Commission “Brain drain – brain gain” in Paris.

4–9 July – Secretary General Mihkel Veiderma participated and delivered a paper at International Conference on Phosphorus Chemistry in Birmingham.

12 August – Academy was visited by a delegation of research experts headed by Director of Finnish State Archives, Member of Academy of Finland Jussi Nuorteva. The delegation met with President Jüri Engelbrecht and Foreign Secretary, Member of Academy Dimitri Kaljo.

14–22 August – President Jüri Engelbrecht attended the Congress of International Union of Theoretical and Applied Mechanics (IUTAM) in Warsaw and participated at the session of steering committee of IUTAM.

26–28 August – Estonia hosted the 31-strong delegation of Royal Swedish Academy of Engineering Sciences headed by President Lena Torell. On 26 August there was a meeting in the Academy, where the Presidents of the Academies delivered papers about the activity and goals of their Academies. Representing the Estonian side at the meeting were Secretary General Mihkel Veiderma, head of Division of Astronomy and Physics Endel Lippmaa, head of Division of Informatics and Engineering Rein Küttner and others.

2–4 September – President Jüri Engelbrecht participated in Helsinki at annual conference of *Academia Europaea* “Europe in Change”.

5–6 September – Estonian Academy of Sciences together with *Academia Europaea* organised the conference “European research and scholarship: regional excellence and perspectives for the wider European Research Area” (cf. p. 52).

8 September – President Jüri Engelbrecht met with delegation of Kyrgyz, Tadjikistan and Belarusian governmental officials.

10 September – there was held the Nikolai Alumäe Mechanics Lecture, organised by Estonian National Committee for Mechanics and Estonian Academy of Sciences Division of Informatics and Engineering.

15 September – Member of Academy Mart Ustav delivered a public lecture on the topic “HIV-1 and human organism”.

21 September – Session of the Board of the Academy approved the report for the 2nd year of research professors Agu Laisk and Asko Uri and plans for work and budgets for the 3rd year. The session approved the proposal to sell the real property located in the village of Borrbby, parish of Vormsi, in ownership of the Academy, which is not necessary for statutory activities of the Academy. In co-ordination with Estonian Science Foundation, the session decided to prolong the powers of Professor of University of Tartu Dagmar Kutsar as representative of Estonia in the standing committee on social sciences of European Science Foundation for the following three-year period.



23–24 September – President Jüri Engelbrecht participated at the session of governing committee of European Science Foundation (ESF) in the Brussels. Under consideration were: strategic plan of the ESF for the nearest years, instruments of formation of European research network and the contribution from ESF, the results of the first round of programme of European Young Investigator Awards (EURYI Awards), success of ESF/COST instruments deriving from inter-disciplinary aspects.

24 September – Board of the Academy visited the Institute of Health Development (cf. p. 54).

24 September – Academy was visited by officer of General Directorate for Science of the European Commission Erika Szendrak with the purpose to provide information about the schemes of funding the research. In the course of a meeting chaired by Head of the Division of Informatics and Engineering Member of Academy Rein Küttner, the visitor was presented the organisational structure of Estonian science and mechanisms of funding. Speaking were member of Science Competence Council, Member of Academy Enn Mellikov, members of Board of Estonian Science Foundation Meelis Sirendi and Luule Mizera, the development advisor of Foundation of Promotion of Entrepreneurship Tiiu Evert.

27 September – President Jüri Engelbrecht delivered a paper “Possibility of a knowledge based society” at the conference held by University of Tartu within the framework of German-Estonian academic week *Academica VIII* “Science and knowledge based society”.

28 September – the Academy House was the seat of presentation of the volume “Estonian Centres of Excellence in Research”.

28 September – 1 October – Estonia hosted the delegation of leaders of science and experts in research and engineering of the USA, who met, on 29 September in the Academy House with President Jüri Engelbrecht and other representatives of the Academy. The meeting continued at Tallinn Technical University.

30 September – 1 October – Foreign Secretary Member of Academy Dimitri Kaljo attended the annual meeting in Athens of partner Academies, participating in European Scientists Exchange Programme (ESEP).

30 September – 1 October – Assistant Secretary General for International Relations Anne Pöitel met with permanent secretary of Flemish Royal Academy of Sciences and Arts Professor Niceas Schamp and participated as expert at regular session of programme committee of sub-programme “Structuring the ERA – Human Resources and Mobility!” of the 6th Framework Programme of the European Commission in the Brussels.

6 October – the session of General Assembly (cf. p. 47) was the forum of research paper by Foreign Member of the Academy, Nobel Prize winner Richard R. Ernst “The Responsibility of Science and our Future”. The session held the election of President of the Academy. Elected President for the following five year period was Member of Academy Richard Villems.

13–18 October – President Jüri Engelbrecht sojourned in Providence (USA), participating at a meeting organised by International Union of Theoretical and Applied Mechanics (IUTAM).

18 October – Assistant Secretary General Galina Varlamova participated at a meeting of Academies of the EU states held in the Brussels by Belgium’s Royal Academies of Sciences and Arts. On the agenda was the role of International Council of Science (ICSU) in European research area (including the perspectives for setting up the European division of ICSU), relations between ICSU and European Science Foundation, tasks of ICSU in solving the problems of new member states of European Union etc.

19 October – President Jüri Engelbrecht participated at the first official working meeting of the project “Developing ERA-NET on Complexity” in the Brussels (European Commission has initiated a scheme named ERA-NET for co-ordination of programme of state researches).

20 October – Member of Academy Jaan Ross delivered a public lecture “Relations of speech and music sounds”.

22 October – commemoration conference of 60th anniversary of Member of Academy Harri Käär was held (cf. p. 51).

26 October – Session of the Board of the Academy approved the amendment to budget of the Academy for 2004. The session decided that the medal named after Member of Academy Paul Ariste should be awarded to Doctor of Philology Professor Tiit-Rein Viitso for outstanding results in research and educating the new generation of Finno-Ugrians. The session decided to award the Academy Medal to Members of Academy Ain-Elmar Kaasik, Ülo Lumiste and Loit Reintam. The session approved the new composition of Estonian National Committee on Astronomy (Chairman Director of Tartu Observatory Laurits Leedjärv).

26 October – winners of students’ research works competition were handed over the diplomas; there was a conference held (cf. p. 59).

26–28 October – Secretary General Mihkel Veiderma visited the Finnish Academies of Technology and participated at Finnish Energy Conference 2004, held in Tampere.

28–30 October – President Jüri Engelbrecht attended the symposium of Swedish Royal Academy of Engineering (IVA) “The Role of the Universities

in the Europe of Knowledge” and the following IVA annual meeting in Stockholm.

4–5 November – President Jüri Engelbrecht delivered, as an invited speaker a paper “Challenges for the new EU member states” at a joint conference of Holland Research Council and ESF in Amsterdam “Fostering international cooperation between scientists in Europe: the role of research councils”. The conference made an emphasis on human resources, and considered infrastructure and the problems of strategic co-operation.

7–8 November – President Jüri Engelbrecht attended the session of steering committee of European Federation of National Academies of Sciences and Humanities ALLEA in Amsterdam. The session discussed the new statute of ALLEA and action plan, including organisation of the next session of steering committee in Tallinn.

10 November – the session of General Assembly was the forum of paper by laureate of the research prize for the work of life Professor Sulev Vahtre “History of Estonia and today”. President Jüri Engelbrecht delivered a report on activity of the Estonian Academy of Sciences in the years 1994–2004. Elected was the new Board of the Academy (cf. p. 26).

15 November – President of Academy of Finland professor Raimo Väyrynen visited the Estonian Academy of Sciences and met with Members of Academy Jüri Engelbrecht and Richard Villems. Attending the meeting was Ambassador of Finland Jaakko Blomberg. Under discussion was scientific co-operation between Finland and Estonia, funding of the research, science policy priorities and experience of elaborating strategy in both countries.

18–19 November – Member of Academy Jüri Engelbrecht participated at a meeting of the General Assembly of European Science Foundation (ESF) in Strasbourg. Under consideration was the future of ESF, as against the background of EUROHORCS, actively amalgamating the councils of scientific research, and the future of the European Research Council (ERC). There was no unity in understanding of certain matters, e.g. concerning the acceptance of new members (taking the decision regarding the Lithuanian Academy of Sciences was postponed).

25–26 November – Assistant Secretary General Galina Varlamova attended the session of General Assembly of the Latvian Academy of Sciences and the following conference.

8 December – Member of Academy Jüri Engelbrecht participated at the session of European Research Advisory Board (EURAB) in the Brussels.

10 December – Member of Academy Jüri Engelbrecht participated at working meeting of the project “Developing ERA-NET on Complexity” in Hague.

14–15 December – Vice-President Jüri Engelbrecht sojourned in Halle (Germany) and participated at conference of representatives of academies of sciences of new member states of the EU, organised by German Academy of Natural Sciences Leopoldina.

16 December – session of the Board of the Academy approved the report for the 2nd work year of research professor R.-J. Ubar, the plan of work for the 3rd year and budget estimate. Work of Under and Tuglas Literature Centre was recognised as successful and it was decided to announce the competition for office of Director for the years 2005–2009.

# GENERAL ASSEMBLY, BOARD, DIVISIONS

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## GENERAL ASSEMBLY

In 2004, the General Assembly of the Academy was convoked to a regular session three times:

- |                              |   |
|------------------------------|---|
| 21 April<br>(Annual Meeting) | <ul style="list-style-type: none"><li>• research paper by Mart Saarma “Life and death in nervous system”</li><li>• paper by President Jüri Engelbrecht “Report of Estonian Academy of Sciences for 2003”</li></ul>  |
| 6 October                    | <ul style="list-style-type: none"><li>• research paper by Richard R. Ernst “The Responsibility of Science and our Future”</li><li>• election of President of the Academy</li></ul>  |
| 10 November                  | <ul style="list-style-type: none"><li>• research paper by Sulev Vahre “History of Estonia and today”</li><li>• paper by Jüri Engelbrecht “Activity of the Estonian Academy of Sciences in 1994–2004”</li><li>• election of Board members of the Academy</li></ul> |

The first session of the General Assembly was held as an annual meeting of the Academy, being the 58th in succession. As ever, the session focused on summing up the activities of the Academy in the previous year. The General Assembly also approved the consolidated financial statement of the Academy in 2003 and the 2004 budget estimate. Detailed data on activities of the Academy in 2003 were made available in the newly published Estonian Academy of Sciences Year Book IX (36), in good time mailed to all Members of Academy.

After the opening speech by President of the Academy Jüri Engelbrecht the Secretary General Mihkel Veiderma presented the new Members of Academy elected at the previous session of the General Assembly: in the materials technology Professor Enn Mellikov, in medicine Professor Raivo Uibo, and in the humanities Professor Jaan Ross. President Jüri Engelbrecht handed them over Diplomas of Member of Academy.

The first named medal of the Academy – named after the first President of the Estonian Academy of Sciences, an outstanding medical scientist Karl Schlossmann was awarded, for spectacular achievements in medicine and related areas to Member of Academy Mart Saarma (cf. p. 55).

Secretary General Mihkel Veiderma announced that Karl Ernst von Baer prize would be awarded to PhD Erki Tammiksaar for consistent research of the scientific heritage of Baer (cf. p. 56).

Diplomas were handed over to the winners of competition of the best popular science book – authors of the book “Microworld of the Universe” Jaak Lõhmus and Rein Veskimäe (cf. p. 57).

Member of Academy Ene Ergma was awarded the Medal of the Academy.

General Assembly heard out the paper by Member of Academy Mart Saarma on the topic “Life and death in nervous system”. The speaker was asked questions by Members of Academy Peeter Saari, Valdek Kulbach, Anto Raukas, Erast Parmasto and Georg Liidja.

The keynote paper of the annual meeting was delivered by President Jüri Engelbrecht.

- President pointed out that in this rapidly changing world, with Estonia a new member of NATO, in the proximate future a new member state of the European Union, the mainstream trends in R&D of the EU at the beginning of the 21st C. have been laid down by Lisbon and Barcelona documents. Most importance has been attributed to valuation of science and fundamental research. The Dublin seminar “Europe on the path to top-level fundamental research” too has drawn attention of European Commission to the need to increase support to R&D as a whole and to fundamental research in particular. Government of the Republic of Estonia is compiling the action plan “Success of Estonia 2014”, which is the sign that the state is taking earnestly the R&D policy as a step towards “Knowledge-based Estonia”.
- Academy has always emphasised the need for the balance in fundamental and applied research, and for quality in research. This has been the key message of activity of Members of Academy and conferences of the Academy, addressed at the society. Board of the Academy submitted additions and complements to the draft “Success of Estonia 2014”, accentuating the role of science and its implications, making sure that Estonia would acquire the image of state of a high research potential.
- President also considered as especially important the survey for ensuring the quality of the higher education, initiated by Ministry of Education and Research, because 50 establishments of higher education are much too much for a country of the size of Estonia; they cannot secure the quality of education.
- Academy has organised conferences and seminars of various topics. Among them the President highlighted the seminar on evaluation of the funding system of science and R&D, and also the discussions on the

same topic in Divisions. Some instances of bottleneck and disharmony in the activity have become manifest, while a strong basis has been created for further efforts, and viable directions of research have been elucidated.

- The most essential question directed to the future should be the continuity of the scientific thinking – hence the formation of the young generation of scientists in Estonia. A special conference was dedicated to that problem, handling the institution of post-doctors. The young people have conveyed to the leaders of science their message: the main requirement of the research work should be novelty and quality of research, without which the research would become meaningless. With high quality supervision lacking, there is no quality instruction. Conditions must be created to make lucrative to post-doctors returning to Estonia after a period of work abroad, to create to every citizen the opportunities to realise his ambitions specifically in Estonia. Excellence in the outcome of research should be considered of major importance, because thence stems a favourable stance to research, and the prevalence of a respective favourable atmosphere. The results must be visible both in the Estonian society and in the international scope.
- When considering the direct links of the Academy with other academies and its involvement in international research organisations, President focused attention on the renown role of a reliable partner the Academy has attained.
- President deemed it expedient to set up the working group for compiling the strategy of Estonian R&D for the years 2006–2010, in furtherance of the overall goals of the Government of the Republic.

Upon move by President, the General Assembly approved the report of 2003 of the Academy, based on the report by President and materials presented in Year Book.

Having heard the report of Secretary General Mihkel Veiderma, the General Assembly discussed and approved the budget estimate 2004 of the Academy, presented on p. 97. Opinions and propositions regarding the budget estimate were voiced by Member of Academy Loit Reintam and Mrs Elsa Pajumaa. Explanations were also provided by the chief accountant Marika Pärn.

During the discussion, speaking were Members of Academy Endel Lippmaa, Karl Siilivask, Lembit Krumm, Jaan Einasto, Karl Rebane and Anto Raukas.

At the second session of General Assembly, held on 6 October, the topical issue was the election of President of the Academy. At the beginning of the session, a research paper “The Responsibility of Science and our Future” was delivered by Foreign Member of the Academy Richard R. Ernst, to whom the Diploma of the Foreign Member was handed over. The speaker was asked

questions by Members of Academy Peeter Saari, Anto Raukas, Viktor Palm, Karl Rebane, Arved-Ervin Sapar.

During the second half of the session, election of President of the Academy was carried out. Divisions of the Academy presented two candidates to hold the office of President: Ain-Elmar Kaasik and Richard Villems. In the course of the session, Member of Academy Udo Margna proposed, as additional candidates to the office of President Members of Academy Peeter Saari and Rein Küttner, who waived their right to run for Presidency. Members of Academy Ain-Elmar Kaasik and Richard Villems presented to General Assembly their platform of activity as President of the Academy. As a result of ballot, elected President of the Academy for the following five years was Member of Academy Richard Villems.

The third session of General Assembly was held on 10 November. At the beginning of the session President Jüri Engelbrecht handed over Medals of the Academy to Members of Academy Ain-Elmar Kaasik, Ülo Lumiste and Loit Reintam.

The research paper “History of Estonia and today” was delivered by Professor Sulev Vahtre, laureate of National Science Prize 2004 for long and productive research and development work.

President Jüri Engelbrecht delivered a report “Activity of Estonian Academy of Sciences”, where he summarised the activity of the Academy under his leadership in the last 10 years. In his report he divided the last decade into two: 1994–1997 – the time of reorganisations and 1998–2004 – operating of the Academy in new conditions, different from the earlier ones, necessitating the fixation of the new countenance of the Academy, in compliance with those new conditions. On the basis of passwords, elaborated were all main fulcra of the activity of Academy.

The second half of the session was dedicated to election of the new Board of the Academy. The newly elect President Richard Villems moved that a 16-strong Board be elected, increasing the number of non-executive members to 8. Member of Academy Richard Villems presented his offer: to elect as Vice-Presidents Jüri Engelbrecht and Ain-Elmar Kaasik, as Secretary General Leo Mõtus and as non-executive members of Board Ene Ergma and Endel Lippmaa from Division of Physics and Astronomy, Enn Mellikov and Enn Tõugu from Division of Informatics and Engineering, Mart Ustav and Mihkel Veiderma from Division of Biology, Geology and Chemistry and Jaan Ross and Haldur Õim from Division of the Humanities and Social Science. There were no other proposals. As a result of ballot, elected as Vice-Presidents of the Academy were Jüri Engelbrecht and Ain-Elmar Kaasik, as Secretary General Leo Mõtus and as non-executive members the candidates presented by President.



General Assembly took cognisance of the fact that Board comprises the Heads of Divisions previously elected in Divisions: Division of Astronomy and Physics – Peeter Saari; Division of Informatics and Engineering – Rein Küttner; Division of Biology, Geology and Chemistry – Ilmar Koppel and Division of the Humanities and Social Sciences – Peeter Tulviste.

## **BOARD**

Board of the Estonian Academy of Sciences worked in 2004, until 14 December, when its powers expired, in the following composition:

President	<i>Jüri Engelbrecht</i>
Vice-President	<i>Ene Ergma</i>
Vice-President,	
Head of Division of the Humanities and Social Sciences	<i>Peeter Tulviste</i>
Secretary General	<i>Mihkel Veiderma</i>
Head of Division of Astronomy and Physics	<i>Endel Lippmaa</i>
Head of Division of Informatics and Engineering	<i>Rein Küttner</i>
Acting Head of Division of Biology, Geology	
and Chemistry	<i>Dimitri Kaljo</i>
Non-Executive Members	<i>Ülo Jaaksoo</i>
	<i>Ain-Elmar Kaasik</i>
	<i>Richard Villems</i>

As from 15 December 2004, Board of the Academy started working in the following composition:

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

In year 2004 the Board held five working meetings. Twice, the decisions were passed by electronically polling the opinions.

In connection with election of the new Board planned to take place at the end of the year, the related issues were under scrutiny, at sessions of the Board. On 21 September the information of Heads of Divisions was heard out about results of the meetings, in setting up Presidential candidates, and on 26 October – about the elections of Heads of Divisions carried out in the Divisions.

The Board satisfied the proposal of Estonian Musicological Society to associate with the Estonian Academy of Sciences.

At the sessions of the Board, heard out were overviews of President Jüri Engelbrecht about the latest trends in science policy; the Board deemed necessary the continuing activity on part of the Academy in formation of the science policy in Estonia. Chairman of Energy Council of the Academy Mihkel Veiderma presented an overview about discussion of topical problems of electrical energy at the session of the Council. The Division of the Humanities and Social Sciences of the Academy was assigned the task to present proposals for in-depth survey of the history of immediate past of Estonia (with main accent on 1939–1945). The Board heard out the memorandum of Member of Academy Endel Lippmaa about the composition of expert commission on exact science of Science Competence Council and accepted the position to take into greater regard, when selecting the experts, their professional competence.

In connection with expiration of the second working year of research professors, on 21 September the Board heard out and approved the reports for the 2nd year in office by research professors Agu Laisk and Asko Uri and the plans for the 3rd year in office and decided to open financing of their 3rd year in office

On 16 December the Board approved the report for the 2nd year in office by research professor Raimund-Johannes Ubar and the plan for the 3rd year in office and decided to open financing of his 3rd year in office

At the beginning of 2004 the Board reviewed the design of the first named medal of the Academy – Karl Schlossmann Medal and approved it. On 30 March the Board approved the proposal of Division of Biology, Geology and Chemistry to award Karl Schlossmanni Medal. On 26 October, taking in due regard the proposal of Division of the Humanities and Social Sciences, the Board decided the awarding of Member of Academy Paul Ariste Medal.

On 27 January the Board approved the previously discussed calendar plan of events of the Academy for 2004, having taken into account the proposals of the Divisions, which was fulfilled by the end of year.



Joint session of two Boards of the Academy (elected for the period 1999–2004 and 2004–2009) on 15.12.2004.

Members of Academy (from the left)

standing D. Kaljo, Ü. Jaaksoo, H. Õim, M. Ustav, E. Mellikov, P. Saari,  
I. Koppel, E. Tõugu, P. Tulviste;  
sitting R. Küttner, A.-E. Kaasik, J. Engelbrecht, R. Villems, M. Veiderma,  
L. Mõtus, E. Lippmaa;  
absent E. Ergma and J. Ross.

At the meeting on 26 October the Board heard out the information by Secretary General Mihkel Veiderma about the outcome of competition of student research papers. The Board decided, at its meetings to grant scholarships, by way of competition for completing the monographic scientific works and popular science books and for their finalising. A respective commission was set up, to study the applications (Chairman Member of Academy Ülo Lumiste), upon whose proposal the grants were awarded. The composition of the commission was appointed (Chairman Member of Academy Anto Raukas) for consideration of works presented for K. E. von Baer Prize, upon proposal of whom the Prize was awarded. The Board also approved the composition of Prize Committee (Chairman Member of Academy Peeter Tulviste) for determining the best popular science book, upon proposal of whom the decision was taken.

At sessions of the Board the reviews of President Jüri Engelbrecht about activity of the Academy in developing international relations were heard out and declared successful. The Board decided to accept the decision of Council of Estonian Academic Foundation for International Exchange regarding the accommodation costs and per diem allowance.

Several times, the sessions of the Board considered the issues related to work with international scientific unions and to nomination of Estonia's representatives into the composition of commissions. Nominated as Estonia's representative in the standing committee of the humanities of ESF was Professor of University of Tartu Karl Pajusalu; prolonged were powers of Professor of University of Tartu Dagmar Kutsar as Estonia's representative in the standing committee of social sciences. The Board approved the composition of National Committee of Marine Sciences (Chairman Research Director of Estonian Marine Institute of University of Tartu Evald Ojaveer) and the composition of Estonian National Committee on Astronomy (Chairman Director of Tartu Observatory Laurits Leedjärv). The Board discussed the issue of payment of the Estonian membership fee in International Union of Pure and Applied Physics and submitted the respective application to Ministry of Education and Research, including the said membership fee in the budget estimate for 2005.

A material chunk of the work of the Board was constituted by discussions and adoption of decisions on issues, related to the daily routine of the Academy. Among others, the Board considered and approved, for subsequent submitting to General Assembly, the statement of financial activities of Academy for 2003, and the budget estimate for 2004 and established the remuneration and annual bonuses to management. At the end of the year, the changes in budget were approved. The present Director of the Academy Publishers Ülo Niine was appointed to the same office for the next five-year period (until 25 May 2009). Heard out was the report of Director of Under and Tuglas Literature Centre Jaan Undusk about the activity of Literature Centre in the election

period 2000–2004, and declared the work of the Centre successful. It was decided to announce competition to the office of director of Under and Tuglas Literature Centre for 2005–2009. The Board approved the proposal to sell, subject to established procedure, the real property complex in ownership of the Academy in the Vormsi parish. The Board discussed and approved the agendas of the sessions of General Assembly. It took the decision to award four Members of Academy with Medal of the Academy.

## **DIVISIONS\***

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

In 2004, the Division focused its attention in the first place on:

- Analysis of the work of Estonian centres of excellence in research and release of a respective comprehensive volume, describing all 10 centres of excellence and providing a survey of all work performed;
- Issues related to development of GRID enabling performance of massive computation works and problems relevant to such co-operation;
- Preparation for International Year of Physics 2005;
- Promotion of international scientific co-operation in high energy physics and astrophysics;
- Preparation for election of the new Board of the Estonian Academy of Sciences.

The materials describing the work of Estonian centres of excellence in research arrived basically by the end 2003, however their editing, harmonising and translation turned out a serious challenge. The volume of materials of centres of excellence appeared in Estonian and English, respectively on 157 and 163 pages and they have been acclaimed as excellently presenting the work of the Estonian Academy of Sciences and the Division.

Estonian GRID (EG) made good progress in the reporting year, although it completely lacked national target funding. The Estonian Grid has by now been connected up to the computer network of the Nordic countries (Nord-Grid) as an active partner, whereas there are certification rules composed for it, and there is the certification centre (CA) of the computer centres involved in the Grid, implemented to work.

In January 2004, the Academy House at Kohtu 6 hosted a representative seminar, in the course of which our foreign guests presented their respective work and the installation of the first Estonian Grid unit (giis1) was performed in the house of Institute of Chemical and Biological Physics at Rävåla 10.

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\* Composed on the basis of materials submitted by Heads of Divisions Endel Lippmaa, Rein Küttner, Dimitri Kaljo and Peeter Tulviste.

The World Year of Physics 2005, earlier initiated by IUPAP and UNESCO obtained a significantly greater impetus with announcement of the International Year of Physics 2005 by UNO General Assembly on 10 June 2004. The UNO General Assembly emphasises that:

- physics is an essential basis of development of the whole perception of the world,
- physics and its applications are basis of many technological advances,
- the education in physics guarantees both to men and women necessary means for building the scientific infrastructure underlying the whole progress,
- 2005 is the centenary of Albert Einstein's fundamental discoveries, on which the modern physics rests.

We are pleased to point out our well progressing co-operation with the world leader Organisation Européenne pour la Recherche Nucléaire (originally Conseil Européenne pour la Recherche Nucléaire) CERN in Geneva.

Since September, the organisational issues were our major concern, because we had to prepare for election of President and members of Board of the Estonian Academy of Sciences.

At the beginning of September, all members of the Division were questioned over telephone, thus finding out about possible preliminary preferences regarding the Presidential candidates. At the meeting of the Council of Division on 9 September 2004 in Tartu, the preparation for the International Year of Physics 2005 was discussed, so were the questions related to election of President of the Academy. At the ballot, held after a lengthy discussion the clear preference of Members of Academy was accorded to Member of Academy Richard Villems, who was elected President by General Assembly on 6 October.

The meeting of the Division held on 21 October 2004 discussed the working plan for 2005, where celebration of the International Year of Physics 2005 held the pivotal place. After a lengthy discussion, elected the new Head of Division by large majority vote was Member of Academy Peeter Saari. Besides that, the questions of work of centres of excellence were discussed, while support was expressed to involvement of cosmology group of Tartu Observatory into activity of Centre of Excellence of Analytic Spectrometry at Institute of Chemical and Biological Physics.

#### DIVISION OF INFORMATICS AND ENGINEERING

In December 2004 the working period of Board of the Academy elected in 1999 expired and in the last quarter of the year the Members of Academy elected the new composition of the Board of the Academy.

There were three meetings of the Division.

At the first meeting of the Division on 30 June there was exchange of ideas about the general principles of composition of the Division. Summary was made about the activities of the first half-year of the Division, and current issues of the science policy were discussed. In connection with working out of a new classifier of R&D areas by Ministry of Education and Research, where one alternative planned was merging the engineering with natural sciences, the Division found that engineering must stay, as a separate area. National programmes must be launched. Being enhanced is the development strategy of research. “Knowledge-based Estonia” calls for a review – an assessment and a proposal for changes. Propaganda of science spearheaded at politicians must be more aggressive. It would be sensible to release, in some time the upgraded analogue of the volume “Scientific Thinking in Estonia. Engineering”, in a better format.

At the second meeting of the Division on 17 September the Division elected the Presidential candidate to be presented by the Division. The Division elected as its candidate Member of Academy Ain-Elmar Kaasik.

On 22 October Division elected its Council: Head of Division and Council of Division. The election turned out a repeated election: elected Head of Division was again Rein Küttner, and elected members of Council of Division were Ülo Jaaksoo and Leo Mõtus. At meeting of the Division, there was also exchange of ideas in issues of science policy. It was suggested that with a view to promoting innovation, it would be useful to organise a meeting with Director of Foundation of Development of Entrepreneurship Mr Madis Võõras; one should also raise the question about revival of the journal “Engineering and Production” or publication of an analogous journal; the follow-up strategy of knowledge-based Estonia should also comprise the innovation strategy.

With participation of Division several major conferences and seminars were held.

- 12 February – the round-table discussion of Estonian Employers’ Confederation and Estonian Academy of Sciences “What entrepreneurs and scientists should know about one another?”
- 9 July – Division organised a seminar of the Academy “Private law based R&D institutions – experience and development”. Speaking were representatives of Academy of Sciences, Ministry of Economic Affairs and Communications, Tallinn Technical University, Cybernetica AS, AS Quattromedi.
- 22 October – the commemoration conference celebrating 60th anniversary of Member of Academy Harri Käär.

- 5 February - Member of Academy Valdek Kulbach delivered a public lecture “Building bridges in Estonia”.

Members of Division were active in organisation of scientific conferences and seminars:

- April –International conference “Industrial Engineering – Innovation as Competitive Edge for SMEs”, Member of Academy R. Küttner
- 26–28 May – 4th Glass Stress Summer School, Member of Academy H. Aben
- June – working seminar of the EU research project “European Polymer Battery” in Tallinn, convener Member of Academy E. Mellikov
- June – 3rd International Computer and Systems Science Summer School, Member of Academy L. Mõtus
- September – Summer school to young scientists “Materials and equipment of solar energy”, convener Member of Academy E. Mellikov.

Members of Division discussed the results of evaluation of engineering and implications thereof at an all-Academy discussion (R. Küttner delivered a paper about the outcome of evaluation of engineering). On the above topic, opinions were expressed at several meetings of the Council of Division. It was noted that a deplorable practice of multiple evaluation has taken root – under titles of different specialities, the same groups are evaluated repeatedly (evidently, until the sufficiently high credit is issued). In this manner the taxpayer’s money is squandered. Comparison of evaluation credits between different areas seems doubtful – the estimates of different commissions are unfortunately incomparable.

A discussion at the meeting of the Division: the activity of organisations funding engineering and their development plans (Estonian Science Foundation, Council of Technology Centre, Enterprise Estonia) were postponed to the year 2005 (it is in the general plan of Academy of Sciences).

#### DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

In 2004 four meetings of the Division were held, one meeting of Council of Division and one seminar.

On 22 March there was an extended meeting of Council of Division, the main problem of which was summarising the international evaluation of medical science carried out at the end of the past year. Attending the discussion was the majority of leaders of medical structural units of University of Tartu and representatives of Health Promotion Institute, Estonian Institute of Cardiology and Centre of Higher Education Accreditation. At the end of the discussion, estimate was provided to the situation of medical science in Estonia and recommendations were taken, to submit to Board of the Academy and Accreditation Centre:



- when discussing the questions of organisation of science in Estonia and the issues of development and streamlining the system of funding research, the general and specific problems highlighted in evaluation of medical science should be taken into due account;
- Centre of Higher Education Accreditation should be advised to continue perfection of organisation of evaluation, holding in view also the circumstances emerging when medical science was evaluated.

Division decided to present Member of Academy Mart Saarma to be awarded with Karl Schlossmann Medal, for outstanding achievements in research and scientific organisation work.

15 September – Division elected its Presidential candidate. Meetings of the Council of Division presented as Presidential candidates Members of Academy Ain-Elmar Kaasik and Richard Villems, who were cast an equal amount of votes at ballot. Hence Division submitted to General Assembly for election two Presidential candidates.

2 November – Division elected Ilmar Koppel unanimously Head of Division. At the same session of Council of Division, the activities of the outgoing year were summarised and the tasks facing the Division in the forthcoming year were discussed.

10 November – new composition of Council of Division was approved. Raivo Uibo was nominated Deputy Head of Division.

12 April – seminar “Biosystematics of the 21st century” was held, initiated by Member of Academy Erast Parmasto and co-organised by Institute of Botany and Ecology of University of Tartu and Institute of Zoology and Botany of Estonian Agricultural University (cf. p. 51).

Members of Academy of the Division participated in continuation of the series of public lectures of the Academy: 24 March – Member of Academy Anto Raukas delivered an academic lecture “Possibility of sustainable development”, 15 September – Member of Academy Mart Ustav – “HIV-1 and human organism”.

Continually operating as attached to the Division were Nature Protection Commission and Commission of Meteoritics.

NATURE PROTECTION COMMISSION (chaired by Urmas Tartes) held on 18 May, in co-operation with Centre of Agricultural Research in Saku the 43rd Day with Papers on the topic “Soil in ecosystem, monitoring and protection”. Significant contribution to smooth progress of the Day was put in by Member of Commission, Member of Academy Loit Reintam, who also delivered a keynote paper and edited the texts for the volume to be published in the nearest future.

Upon proposal of the general meeting of the Commission on 12 March, the Estonian National Committee of UNESCO was extended support to have the Baltic limestone cliff included in the UNESCO world register of cultural and natural heritage. Whereas it was emphasised that the most prominent part, also available to research, of the Baltic limestone cliff is located as an almost uninterrupted bluff 250 km long on Estonian shore, having high aesthetic and tourist value.

The subject of discussion of Commission at the general meeting on 2 December was the topic of foreign species: the papers gave an overview of the Baltic Sea foreign species and the danger they may present to the Estonian nature.

COMMISSION OF METEORITICS (chaired by Member of Academy Anto Raukas) carried out research on the basis of French and Estonian Parrot programme “Young impact structures of Estonia as etalons of research of processes set going upon explosion of iron meteorites (relations between agent of impact, atmosphere, Earth crust and hydrosphere)” (supervisors A. Raukas, F. Marini). Co-operation with French scientists provided Estonian scientists an opportunity to work in a European research centre best of all equipped with research devices (*Centre de Recherches Pétrographiques et Géochimiques – CRPG-CNRS*) in Nancy and in its geological centre of good traditions (*École Nationale Supérieure de Géologie*), specialising on research of convoluted lithosphere and cosmologic processes, where meteoritics and environmental geochemistry hold an important place. The Commission continued research of pulverised matter of Kaali, Neugrund and Kärđla meteorite craters and minerals related to meteorite explosions located in samples of drill cores, elaboration of the research matter and preparation for print, as well as organisation of exhibitions presenting the meteoritics (expositions, excursions, consultations, lectures).

#### DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

There were two meetings of the Division.

17 September – the meeting of the Division formulated the position for election of President of the Academy. As earlier agreed, the Division decided not to present its candidate but to support the candidates of other Divisions. Altogether, Member of Academy Richard Villems was supported with 8 votes and Member of Academy Ain-Elmar Kaasik with 3 votes.

20 October – the meeting elected as Head of Division Member of Academy Peeter Tulviste. At the same meeting, the presentation of the candidate to Paul Ariste Medal to Board of the Academy was discussed. After an animated palaver the consensus was reached for proposing Professor of University of Tartu Tiit-Rein Viitso as candidate for the Medal.

3 March – Institute for International and Social Studies at Tallinn Pedagogical University was visited, with both the members of Council and Division attending.

30 April – the Estonian Cultural History Archives and Archival Library of Estonian Literary Museum celebrated their jubilee; the conference held on that occasion was attended by Member of Academy Peeter Tulviste and Member of Academy Arvo Krikmann.

6 May – a Day of Science was held in Valga/Valka (cf. p. 53), organised by Member of Academy Peeter Tulviste; paper was delivered by Member of Academy Haldur Õim, attending was Member of Academy Huno Rätsep.

11 May – seminar from the series FROM SCIENCE TO SOCIETY “Culture and communication in archaeology” (cf. p. 52).

20 October – Member of Academy Jaan Ross delivered an academic lecture “Relations of speech and music sounds”.

The culture prize of the Baltic Assembly for 2004 in the area of science was assigned to Member of Academy Arvo Krikmann for his empirical research concerning the cognition figure-of-speech theory “The Contribution of Contemporary Theory of Metaphor to Paremiology”.

## INTERNATIONAL SCIENTIFIC RELATIONS

Estonian Academy of Sciences Act specifies, as the statutory task of the Academy, to promote international scientific co-operation. Basing on its development and action plan, the Academy continued representation of Estonian scientific community in 2004 in the following world and European research organisations:

- International Council for Science (ICSU);
- Union Académique Internationale (UAI);
- European Federation of National Academies of Sciences and Humanities “**ALL European Academies**”. Starting from 2004, Estonia has sat on the steering committee of ALLEA. As an extension to the activity of ALLEA WG, researching the science strategies of small countries, President Jüri Engelbrecht now heads the ALLEA WG on Research Co-operation.
- European Science Foundation (ESF) together with Estonian Science Foundation (EstSF). The funding of participation in ESF programmes is effected through EstSF. Joint representatives of Academy and EstSF act in both the governing council and standing committees. In 2004, Estonian scientists participated in seven *à la carte* programmes, besides that EstSF has joined four EUROCORES (“**E**uropean **C**ollaborative **R**esearch”) programmes, all in different stage of progress.

On 17 March the Academy and Estonian Science Foundation organised in Tallinn the annual meeting of Nordic member organisations of ESF. There were 33 participants – from Denmark, Finland (including Risto Ihamuotila, President of the Delegation of the Finnish Academies of Science and Letters), Norway (including Lars Walløe, President of Norwegian Academy of Science and Letters), Sweden, Estonia; observers from Latvia and Lithuania (including Zenonas Rokus Rudzikas, President of Lithuanian Academy of Sciences). The keynote speech was delivered by the new executive head of European Science Foundation Bertil Andersson, who presented the ESF strategy, action schemes, ESF expectations with regard to member organisations, and provided an overview on restructuring of the European cooperation network in the field of scientific and technical research COST. Next day Bertil Andersson visited the Academy. The discussion held at the meeting focused on relations of Estonia and ESF (system of funding of Estonian science and the activities scenarios stemming from that, problems of COST, Estonia’s opportunities to participate, as a standing partner, in the ESF conference scheme).

The general strategy of European Science Foundation and the place of that organisation in European research area, in view of active operation of the

European Heads of Research Councils (EUROHORCs) as well as setting up the European Research Council (ERC), was subject of discussion both at meetings of the governing council and the General Assembly (November, Strasbourg). ESF programmes (in particular the interdisciplinary instruments) are successful, however the member organisations, are not unanimous in respect of future trends.

Expansion of the European Union sets a task to the Academy to directly participate in formation of R&D strategy of the EU, which will necessitate operation of Academy and its members in representing both the Academy and Estonia in new structures:

- European Academies Science Advisory Council (EASAC), established by the Academies of EU member states, with the aim to advise the EU political institutions about the scientific aspects of public policy issues (cf. e.g. the EASAC document “Towards 3%: attainment of the Barcelona target”; [www.easac.org/EASACreport04.pdf](http://www.easac.org/EASACreport04.pdf)). Representative of Estonia attended the meeting of EASAC in Amsterdam in June, for the first time as having full rights.
- European Research Advisory Board (EURAB), set up in 2001 to advise the European Commission in implementing the R&D policy. European Commission nominated, upon proposal of European Science Foundation, as member of the new composition Jüri Engelbrecht, who also participates in two working groups of EURAB: WG3 – Support of Regional Potential and WG6 – Science and Society.

Estonian Academy of Sciences takes part, as authorised by Ministry of Education and Research in two projects of European Union R&D 6th framework programme. First, within the ERA-NET scheme (Networking the European Research Area), created for coordination of national research programmes and for promotion of their reciprocal opening-up, the Academy participates in the project “Developing ERA-NET on Complexity” co-ordinated by Danish Research Agency. Second, the Academy has been involved as a Bridgehead organisation in European Network of Mobility Centres ERA-MORE, the goal of which is to offer to scientists reliable information and aid, meeting their concrete needs for solution of practical problems, when moving from country to country (the intra-Estonia network is co-ordinated by Foundation Archimedes).

The Academy continually supported the connections of Estonian scientific community with international scientific unions, organising centralised payment of membership fees of those organisations and reporting to Ministry of Education and Research about the activity of respective national committees (cf. Table 1), which have been set up to represent the Estonian scientists in those unions. Contacts with ICSU member organisations are held in high priority by the Academy.

Table 1

Estonian contacts points of international science organisations whose membership fees were covered in 2004 by Estonian Academy of Sciences, at the expense of specific allocation of Ministry of Education and Research.

Estonian contact organisation	International scientific union
Estonian Physical Society (Chairman: Arvo Kikas, Arvo.Kikas@ut.ee)	European Physical Society, EPS
Estonian Geophysical Committee (Chairman: Rein Rõõm, Rein.Room@ut.ee)	International Union of Geodesy and Geophysics, IUGG
Estonian National Committee for IGU (Chairman: Jaan-Mati Punning, kotliegs@hotmail.ee)	International Geographical Union, IGU
Estonian National Committee for Geology (Chairman: Dimitri Kaljo, kaljo@gi.ee)	International Union of Geological Sciences, IUG
Estonian Association of Engineers /Estonian Systems Engineering Society (Contact: Leo Mõtus, Leo.Motus@akadeemia.ee)	International Federation of Automatic Control, IFAC
Estonian Chemical Society (President Margus Lopp, lopp@chemnet.ee)	International Union of Pure and Applied Chemistry, IUPAC
Estonian National Committee for Mathematics (Chairman: Mati Abel, Mati.Abel@ut.ee)	International Mathematical Union, IMU
Estonian National Committee on Astronomy (Chairman: Laurits Leedjärv, leed@jupiter.aai.ee)	International Astronomical Union, IAU
Estonian National Committee for IGBP (Contact: Rein Vaikmäe, Rein.Vaikmae@hm.ee)	International Geo- and Biosphere Programme, IGBP
Estonian National Committee for Mechanics (Chairman: Jüri Engelbrecht, je@ioc.ee)	International Union of Theoretical and Applied Mechanics; IUTAM
Estonian National Committee of IAG (Chairman Anto Raukas, raukas@gi.ee)	International Association of Geomorphologists, IAG
Estonian Academy of Sciences (Contact: Jüri Engelbrecht, J.Engelbrecht@akadeemia.ee)	International Council for Science, ICSU
Estonian Academy of Sciences (Contact: Jüri Engelbrecht, J.Engelbrecht@akadeemia.ee)	European Federation of National Academies of Sciences and Humanities "ALL European Academies", ALLEA
Estonian Academy of Sciences (Contact: Peeter Tulviste, Peeter.Tulviste@akadeemia.ee)	Union Académique Internationale, UAI
Estonian Academy of Sciences (Contact: Jüri Engelbrecht, foreign@akadeemia.ee) and Estonian Science Foundation (Contact: Meelis Sirendi, meelis@etf.ee)	European Science Foundation, ESF

The Academy continued co-operation with partner organisations in the Nordic research area (as an example to the point, cf. the above conference on 17 March). In November 2004 in Strasbourg, on the agenda was setting up of a new institution NordForsk (Nordic Research Board) as from 1 January 2005, to assume the functions of Nordic Research Policy Council. NordForsk has not been designed as an independent research policy institution. It is supposed to adhere to the priorities of participants and joint programmes. Invited as observers, has been one representative upon mutual agreement of Estonia, Latvia and Lithuania (presently, it is the representative of Estonia who has been nominated the first observer).

The annual Presidential meeting of Estonian, Lithuanian and Latvian Academies of Sciences was held – using the participation of three Presidents, Jüri Engelbrecht, Zenonas Rokus Rudzikas and Jānis Stradiņš in General Assembly of ALLEA – in Brussels on 24 March. During the meeting the new protocol on tripartite co-operation of Academies was signed.

Organisation of annual international-relations joint seminar of Estonian, Lithuanian and Latvian Academies of Sciences was this year the responsibility of the Estonian Academy of Sciences. Seminar was held in April, the general topic being participation in international science organisations. Delivering papers as invited speakers were Member of Board of Estonian Science Foundation Meelis Sirendi (on European Science Foundation programmes and other instruments) and Tiina Vihma-Purovaara from Academy of Finland (on background of laying down strategy of international activity of the said Academy).

On 5–6 September there was the joint meeting with *Academia Europaea* “European research and scholarship: regional excellence and perspectives for the wider European Research Area” (cf. p. 49). For Estonian scientific community of importance was visit to Estonia by Bruce Alberts, President of National Academy of Sciences of the USA, upon joint invitation of the Academy and Ministry of Education and Research. On 1 June Bruce Alberts delivered a public paper in Academy “The Critical Issue of Capacity Building in Science and Technology for Every Nation”. In August the Academy was visited by 31-member delegation of Royal Swedish Engineering Academy headed by President Lena Torell, in September – by delegation of leaders of science and research and engineering experts of the USA (including Anton Dammer from the US Energy Department, Mark A. Suskin, Director of the European Bureau of the National Science Foundation), etc.

In a couple of times, the leaders of science visited the Academy to make a research co-operation agreement (Roberto de Mattei, Vice-President of Italian National Council for Scientific Research) or for renewal of the existing one (Andrzej B. Legocki, President of Polish Academy of Sciences). The research

co-operation between Academies was also on agenda at the meeting in November of Raimo Väyrynen, President of Academy of Finland with Members of Academy Jüri Engelbrecht and Richard Villems.

Besides the above meetings, in 2004 representatives of the Academy participated in several keynote conferences and workshops, among others President Jüri Engelbrecht at joint session of Estonian and Finnish R&D Councils in Helsinki, at annual conference of *Academia Europaea* “Changing Europe” in Helsinki, at joint conference of Netherlands organisation for scientific research and European Science Foundation “Fostering international co-operation between scientists in Europe: the role of research councils” in Amsterdam; Secretary General Mihkel Veiderma at session of joint co-ordination committee of US-Estonian oil shale programme in Washington, Foreign Secretary Dimitri Kaljo at annual meeting of partner Academies participating in European scientific exchange programme ESEP in Athens etc. In more detail, cf. Chronicles (pp. 11-20).

The Estonian Academy of Sciences sees as one of its tasks promotion of bilateral and multilateral research co-operation on the level of scientists. The bilateral co-operation agreements made between the Academy and its partner organisations, which envisage, as one component the exchange of scientists on the cost-sharing principle (the receiving party covers the living costs in the host country), have become a traditional and well operating instrument furthering mobility and co-operation of the scientists. For the data characterising the exchange of scientists cf. Table 2.

The annual conference of partner organisations involved in scientific exchange in Athens in autumn 2004 showed that our European colleagues appreciate the exchange of scientists basing on their own initiative and on their need for co-operation as a flexible and mutually beneficial mechanism – just like the Council of Estonian Academic Foundation for International Exchange – emphasising the importance of joint projects.

Yet, one must realistically estimate the possibilities of the Estonian Academy of Sciences in funding the exchange – one should exercise caution when planning extra expenditures in the current situation. The academic exchange of scientists is a mobility channel of relatively restricted options among many others, for instance the EU projects, European Science Foundation programmes, inter-governmental grants, direct contracts of the universities etc. Our statistics provides unequivocal evidence to support that statement of fact. In some areas, e.g. biomedicine, molecular biology, agriculture etc., where other sources of funds are easier to use, the academic channel of exchange of scientists enjoys little popularity.

Commenting on concrete details of exchange, the year of 2004 was admittedly a regular year. The circle of co-operation partners was replenished, by



Flemish Royal Academy of Sciences and Arts and Italian National Council for Scientific Research, with whom the respective agreements were made, in the first half of the year. Of them, the first was actually used (cf. Table 2). All in all, there were 25 co-operation partners as of 01.01.2005, of them 20 active ones. Renovated were agreements with the following partners: Spanish National Council for Scientific Research (in January; including the joint projects programme), with Lithuanian and Latvian Academies of Sciences (in March; a tripartite agreement), with Polish Academy of Sciences (in April, including the joint projects programme), with Czech Academy of Sciences (in July) and Russian Academy of Sciences (in August). With Russian Academy of Sciences

Table 2

Exchange of scientists, as effected in 2004, under co-operation agreements of the Estonian Academy of Sciences

Foreign partner	Annual quota (number of days)	Trips to Estonia		Trips abroad	
		Number of trips	Number of days	Number of trips	Number of days
Austrian Ac.Sci.	56	-	-	4	31
National Ac.Sci. of Belarus	30	-	-	-	-
British Academy	90	-	-	2	47
Bulgarian Ac.Sci.	86	4	57	2	33
Chinese Ac.Sci.		-	-	-	-
Czech Ac.Sci.	70	6	70	2	24
Academy of Finland	600	21	150	110	681
Flemish Ac.Sci.	28	-	-	1	4
French Ac.Sci.		1	16	2	10
Hungarian Ac.Sci.	203	13	109	14	175
Israel Ac.Sci.	28	-	-	-	-
Latvian Ac.Sci.	75	7	23	11	67
Lithuanian Ac.Sci.	75	5	30	8	57
Royal Society of London		1	9	1	15
Norwegian Ac.Sci.	84	2	4	4	62
Polish Ac.Sci.	100	14	106	11	99
Russian Ac.Sci.	50	9	68	7	52
Slovak Ac.Sci.	35	5	41	2	12
Slovenian Ac.Sci.		1	7	2	18
Spanish Council for Sci. Research (CSIC)	98	5	78	6	61
Royal Swedish Ac.Lett.Hist.&Ant.	28	-	-	3	30
Swiss Ac.Sci.	60	1	7	1	24
National Ac.Sci. of the Ukraine	50	-	-	1	20
TOTAL	1846	95	775	194	1522

ces, an arrangement was reached to support the successfully functioning exchange by increasing the quotas of exchange starting from 2005.

Endemic to the exchange of scientists, especially the reception of visiting scientists is numerical instability and the increasingly higher alertness of Estonian scientists to use the exchange quotas. On the level of average indicators, the recent years have evidenced the visible decrease of volumes, which will keep within the frame of longer perspective fluctuations.

Reception of visiting scientists basing on co-operation agreements is funded from the Academy budget. In 2004, the whole amount earmarked for that purpose was expended, as a matter of fact (expense 445 thousand kroons), whereas the average cost of day was low (575 kroons). The reception (775 days) accounted for 42% of the total amount of exchange quotas under agreements. As always, the greatest number guest scientists came from the countries where the quota was the largest: from Finland 150 days, from Hungary 109, Poland 106, and Spain 78 days, with Finland using as little as 25% of the quota. Sadly, the shrinking volume of guest scientists from Finland is the trend of the recent years, witnessed also in the past year. The quota was used up, fully by partner Academies from Russia, Slovak Republic, Poland, Bulgaria, and Czech Re-public. The quota was amply used by Spain (80%). The interest displayed to us by Hungary and our southern neighbours was lesser, that year.

The volume of outbound trips of Estonian scientists was 1522 days, constituting 82% of the quota. Leading were the traditional host countries: the most number of days was used in Finland – 681, in Hungary 175 (86% of quota), Poland 99 (99%). The researchers in social sciences and the humanities were as keen on travelling as ever – their share in outbound trips accounted for 58%, in visiting Finland even 81% (Finland is the host country of researchers in social sciences and the humanities in 62% of cases).

One should keep in mind that an impact factor of international research co-operation is the co-operation on the domestic arena in Estonia. The Academy's exchange-of-scientists programmes are open to all Estonian research institutions and universities (the password in approval of applications being "quality"), whereas the partner of the largest weight of the Academy here is University of Tartu (26% of volume of trips, 33% of volume of reception). As member of the European Network of Mobility Centres ERA-MORE the partners of the Academy are the Foundation Archimedes, University of Tartu, Tallinn University of Technology and Tallinn Pedagogical University. The Academy participates in the European Science Foundation together with Estonian Science Foundation. It is essential that the Estonian Academy of Sciences should be able to perform its role as a reliable partner in both international and national aspects, in furtherance of successful integration of the Estonian science into international scientific community.

# COUNCILS

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## ENERGY COUNCIL

Members of Academy Jüri Engelbrecht, Endel Lippmaa and Mihkel Veiderma visited in January the Management Board of AS Eesti Energia (Estonian Energy LTD). After studying the development plans of AS Eesti Energia and its investment plans the parties agreed, that the position of the Academy in this questions would be formulated in the Energy Council of the Academy.

Energy Council of the Estonian Academy of Sciences (Chairman Member of Academy Mihkel Veiderma) discussed at its session on 5 March the development strategy of electrical energy in Estonia. It heard out the information of Chairman of Board of AS Eesti Energia (EE) G. Okk and Technical Director L. Vali regarding the investment plans of EE up to the year 2018. In connection with preparation of long term development plan of the national energy economy, the problems were considered on a wider plane. Council also discussed the aspirations of EE to elevate the price of electricity.

Council made a proposition to complement the development and investment plan of EE:

- with data regarding the use of oil shale resource and excavation of oil shale (the temporal changes in geological conditions and quality of oil shale bed, the dynamic of excavation field, opening or closing of mines, implementation of new technologies), as well as logistical scheme of preparation and transport of oil shale, in view of different requirements of various consumers with respect to quality of oil shale and size of fraction;
- with data regarding the fluidised-bed boilers together with respective parameters and their comparison with pulverised fuel boilers, after which it would be possible to specify the optimal solutions and the time for their implementation, also with respect to ash removal and storage;
- with forecast of increase of the electricity price both under impact of intra-system factors (covering the investments, repayment of loans and growth of interest rate, appreciation of equipment, deterioration of the oil shale deposit and so on), including different consumer groups, and on account of external costs (environmental pollution, resource, energy and other taxes);
- with proposals to cover the remaining part of electricity consumption (at least 15%) and regarding the reserve capacities, also with the vision about the impact of wider opening of the electricity market on activity and structure of EE.

Having wider discussed the development strategy of electrical energy, the Council deemed it necessary:

- As an important strategic task, to elaborate the issue of laying a sea cable of sufficient capacity, which would enable us to connect to the power grids of the Nordic countries and will give to Estonia an opportunity to purchase and sell electricity in Power Exchange of Finland.
- To elaborate the optimum solutions for supplying Estonia with natural gas within the EU framework, taking into consideration the growth of flows of natural gas in the chain of Russia, Barents Sea and Europe, the drawing closer to the Baltic States of the transport arteries of gas, and the opportunities to storage natural gas in Latvia; also the significantly lower specific investment, when producing electricity and heat conjointly, and the lesser environmental pollution, also the mobility in meeting the top load.
- Taking into account the vital role of state regulation in opening the electricity market, to incorporate on the basis of the concern Eesti Energia AS separate commercial organisations in public ownership for production of electrical energy and for its transmission to the extent of the whole base grid. To vest in the base grid company, under state control, the responsibilities of systems operator and market operator; to consider setting up regional distribution and sales companies and their privatisation.
- To review those sections of the electricity market act, which stipulate the existence of the concern embracing the whole chain of production and transmission of electricity, restricting the definition of free consumers and regulating the purchase and sale conditions of electricity obtained in joint production between the producer and grid-company.
- To elaborate the optimum solutions of production of shale oil and their volumes, pegging them to the development of energy complex.

Having discussed the application of EE to increase the price of electricity, the Council deemed it necessary to recommend:

- The Inspectorate of Energy Market and the respective state authorities must analyse the proposal to increase the electricity price with regard to structure and motivation as per consumer groups, associating it with the impact on development of economy and with tolerance margin of the population.
- The Ministry of Economy and Communications and Ministry of the Environment must reach an agreement in the balanced strategy of energy resource, environment and other taxes, to avoid undue uplifting pressure on electricity price.

The resolution of the Council was distributed to Riigikogu, the Government of the Republic, Ministry of Economy and Communications, Inspectorate of the Energy Market and EE.

On 2 July, the Council sent to Riigikogu and Government of the Republic, the opinion electronically co-ordinated between members of the Council for edited draft long-term national development plan of fuel and energy economy, submitted by Ministry of Economy and Communications to Government of the Republic. The Energy Council pointed out the fact that the draft lacks the estimate as to what extent the contemplated measures impact on efficiency of the energy system and the electricity price, neither are there presented concrete measures to guarantee the transition to free electricity market, agreed upon with the EU, nor is there envisaged the activity of the state as regulating agent of the system and organiser of the market. In the opinion of the Council, the development of the energy sector must no longer be regarded as isolated from technological processing of oil shale into shale oil and chemical products.

Chairman of the Energy Council delivered the positions of the Council personally to the Prime Minister. The Economic Commission of Riigikogu confirmed that they were taken into due regard, when considering the draft. Upon request of several Members of Riigikogu the Council forwarded the said positions also to them.

Chairman of the Council was also active as member of joint co-ordination committee of the USA-Estonia oil shale research programme; he delivered a paper at a conference in Washington, dedicated to employment of the USA oil shale and presented a summary about outcome of performance of the programme at the meeting of Research and Development Council.

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

The main activity of the Council of Population and Public Health of the Estonian Academy of Sciences (Chairman Member of Academy Ain-Elmar Kaasik) focused on participation in the public health working committee of the Public Understanding Forum. Estonian Academy of Sciences is represented in the committee by member of the Council, Member of Academy Raivo Uibo, who was elected chairman of the committee. The committee has been active the whole year through.

On 27 August, the committee had working meeting in Biomedical Centre of the University of Tartu. A paper was delivered by member of the Council Professor Toomas Asser.

On 8 October, within the framework of the Days of Medical Department, there was held a conference in Tartu "Future perspectives of the medical

science”, where the members of the Council of population and public health Professor Eero Vasar and Member of Academy Raivo Uibo delivered analysing papers. The conference heard out the papers by Director of Health Development Institute Maarike Harro and Head of Molecular and Cell Biology Institute of the University of Tartu Professor Juhan Sedman. Although that conference was not organised by Council of Population and Public Health, members of the Council participated and the results of the analysis presented underlie its further activity.

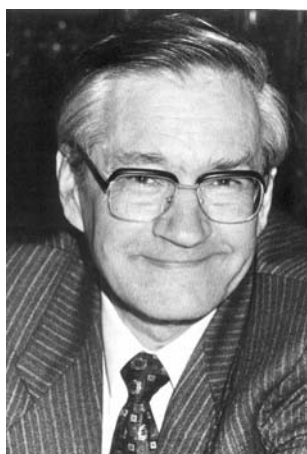
The main output of the activity in 2004 of the public health working committee of the Public Understanding Forum was the Public Understanding Health Forum held at the beginning of 2005 (17.01.2005) in Tallinn. The Council participated in enhancing and editing of the final documents of the Health Forum, drawing especial attention to the fact that the “Public health related target programme of R&D for 1999–2009” approved on 11.08.1998 by Government of the Republic (Regulation 797-k) had been from the very start insufficiently funded and regarding its administration, opinions held by the steering committee of the programme and the Public Health Department of Ministry of Social Affairs diverged. By now the programme has, to all practical purposes, come to a grinding halt. The Council voiced the opinion that the programme must be reconsidered and continued, subject to its original intent.

## TOPICAL PAPERS, PUBLIC ACADEMIC LECTURES

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In 2004, there were three topical papers delivered at sessions of General Assembly of the Estonian Academy of Sciences, followed by discussions:

On 24 April, at annual General Assembly of the Academy, Member of Academy *Mart Saarma* delivered a research paper “Life and death in the nervous system”.



On 6 October, at the session of the General Assembly of the Academy Nobel Prize winner, Foreign Member of Estonian Academy of Sciences *Richard R. Ernst* delivered the research paper “The Responsibility of Science and our Future”.

On 10 November, at the session of the General Assembly of Academy, Professor *Sulev Vahtre*, Laureate of the National Price for Lond and Productive Research for 2004 delivered the academic paper at the topic “History of Estonia and today”.



In 2004, there were four more discourses given to an audience in the series “Public academic lectures of the Estonian Academy of Sciences” initiated in 1996:

On 5 February  
Member of Academy *Valdek Kulbach*  
“Building bridges in Estonia”



On 24 April  
Member of Academy *Anto Raukas*  
“The chances for sustainable development”

On 15 September  
Member of Academy *Mart Ustav*  
“HIV-1 and human organism”



On 20 October  
Member of Academy *Jaan Ross*  
“Relations of speech and musical sounds”

Altogether, 32 lectures have been delivered in this series.





On 1 June, President of the National Academy of Sciences of the USA Professor *Bruce Alberts* delivered a lecture “The Critical Issue of Capacity Building in Science and Technology for Every Nation”.

## ROUND TABLE, CONFERENCES, SEMINARS

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In 2004, the Estonian Academy of Sciences organised 8 larger events.

### ROUND TABLE

On 12 February the Academy jointly with the Estonian Employers' Confederation organised the round-table discussion "What the entrepreneurs and researchers should know about each other?" Sitting on the panel were:

*Rein Küttner* – the role of engineering sciences,

*Ain Heinaru* – the role of *universitas*,

*Kristjan Haller* – Ministry of Education and Research as co-ordinator of research and development,

*Madis Võõras* – Programmes of Enterprise Estonia as co-operation,

*Andres Haamer* – a proactive look at the needs of IT,

*Aleksei Hõbemägi* – machine building industry,

*Arvo Kivikas* – tailoring and textile industry.

In discussion (moderators Meelis Virkebau and Jüri Engelbrecht) the following topics were under scrutiny:

- knowledge and scientific research;
- information exchange (offer and demand), Internet;
- applied research and branches of economy, co-operation, co-financing and orders;
- Finnish experience: co-operation agreements of companies and universities / research establishments.

MEMO of the round-table discussion (together with the action plan) has been distributed to universities, governmental organisations and companies.

### CONFERENCES

5–6 September – Estonian Academy of Sciences together with The Academia Europaea organised a conference "European Research & Scholarship: Regional excellence and perspectives for the wider European Research Area". Papers were delivered by

*Toivo Maimets*, *Jüri Engelbrecht* and *Jaak Aaviksoo* from Estonia and *Jürgen Mittelstrass* (The Academia Europaea), *Norbert Kroo* (Hungarian Academy of Sciences), *Hugh Richardson* (European Commission), *Ernst-Ludwig Winnacker* (German Science Union), *Francesco Fedi* (COST).

22 October – commemoration conference of the 60th anniversary of Member of Academy Harri Käär. The papers were delivered by:

*Aadu Paist* “Harri Käär as faculty member”;  
*Arvo Ots* “Harri Käär as researcher and scholar”;  
*Ülo Rudi* “Harri Käär as Director of Estonian Energy Research Institute of the Estonian Academy of Sciences”;  
*Arvi Hamburg* “Harri Käär and Estonian energetics”;  
*Ain Kalmaru* “Harri Käär’s studentship”;  
*Arno Kannike* “Harri Käär’s studies in Moscow”;  
*Margus Reemets* “Harri Käär as friend and classmate”.

#### SEMINARS

23 January – an international academic seminar “Introduction to global computing system (Grid)” (moderator Member of Academy Endel Lippmaa). The papers were presented by:

*Balazs Konya* (Lund University), *Alexander Konstantinov* (Vilnius/Oslo University), *Jakob Langgaard Nielsen* (Niels Bohr Institute), *Oxana Smirnova* (Lund University), *Mattias Ellert* (CERN), *Martti Raidal* and *Andi Hektor* (Institute of Chemical and Biological Physics).

12 April – Member of Academy Erast Parmasto organised a seminar in Tartu “The biosystematics of the 21st century.” Seminar was opened and welcomed by Member of Academy Ain-Elmar Kaasik, the papers were as follows:

*Erast Parmasto* “Estonia – a province of good traditions or a participant to be reckoned with in reconstruction of Life Tree? ”;  
*Urmas Kõljalg* “Problems of synthesis of molecular and morphological systematic”;  
*Olle Hints* “Directions in present day palaeontological systematic here and elsewhere”;  
*Toomas Kivisild* “*Homo sapiens* – problems of intra-species systematic”;  
*Tiina Randlan* “Comparison of phylogenetic analysis of morphological and molecular parameters, after the example of cetrarioid lichens”;  
*Tatjana Oja* “Phylogenetic systematic of plants in the world and Estonia”;  
*Tiit Teder* “What sort of insect systematic do we need in Estonia? ”;  
*Jaan Viidalepp* “Taxonomy of loopers: Estonia and the global problems of systematic”;  
*Tarmo Timm* “What should we do with the “dubious” species? (after the example of *Homochaeta naidina*)”.

The seminar, presenting much interest to the scientists (participating were over 70 people), ended with a lively discussion.

13 April – a seminar held jointly with Tartu Observatory (opening address and welcome by Member of Academy Mihkel Veiderma) “Bernhard Schmidt – 125”. The papers were presented by:

*Tõnu Viik* “The famous Naissaare-born Bernhard Voldemar Schmidt”;  
*Mihkel Jõeveer* “The achievements with Schmidt telescopes”;  
*Uno Veismann* “Optics of Schmidt cameras”;  
*Vahur Mägi* “The Estonian-born inventor at home and abroad: when the space of the homestead turns out too cramped”.

During the seminar, Schmidt 30 cm telescope was put on display. Issued by Estonian Post was the stamp and postcard dedicated to Bernhard Schmidt’s 125 anniversary.

9 June – a seminar moderated by Member of Academy Rein Küttner “Private law based research and development institutions – experience and development”. The papers delivered were:

*Kitty Kubo* “Opportunities to support knowledge-based SMEs”;  
*Ülo Jaaksoo* “Intellectual capital – the major resource of a knowledge-based company”;  
*Margus Lopp* “Commercialising the science competence”;  
*Tiit Talpsep* “Transition from a University laboratory into an ambitious small company. Joys and worries”;  
*Raivo Tamkivi* “Experience of science and technology parks in Estonia”.

The interests displayed by representatives of Ministry of Economy and Communication, scientists and representatives of companies triggered a lively discussion, moderated by Member of Academy Rein Küttner. Materials of the seminar were published as a brochure and were distributed to institutions, related to the given problem range, individuals and libraries.

In the series “FROM SCIENCE TO SOCIETY”

11 May – a seminar “Culture and communication in archaeology” (moderator Professor Valter Lang), with papers from:

*Aivar Kriiska* “Cultures and being cultured in the Neolithic Period”;  
*Valter Lang* “EpiNeolithic lack of culture”;  
*Heiki Valk* “Estonian cultural picture in Middle Age”;  
*Marika Mägi* “The pre-historic jetties of Saaremaa”.

Tackled in the ensuing discussion were also the today’s problems related to archaeology as area of science.

## MEETINGS-DISCUSSIONS

Estonian Academy of Sciences regularly organises meetings-discussions in scientific institutions and societies associated with the Academy, and in enterprises and regions.

On 6 May, Estonian Academy of Sciences and Latvian Academy of Sciences held a joint Day of Science (such Days have been held since 1999) in the town of Valga-Valka. Speaking were, from the Estonian side:

*Jüri Engelbrecht* “Estonian Academy of Sciences and organisation of science in Estonia”;

*Haldur Õim* “The Estonian language and computers”;

*Tiit Rosenberg* “Educationalists from Valga – rector Ulmann, director of seminar Cimze, headmaster Einer”;

*Kristi Salve* “Rich like Riga’s rooster: the relations of Estonian-Latvian folklore”;

*Ülo Lumiste* “World famous mathematician and chess player Piers Bohl”;

and from Latvia:  
*Jānis Stradiņš* “The role of the Valka town in cultural and social history of Latvia”;

*Ojārs Bušs* “The name of the Valga-Valka town”.



President of the Latvian Academy of Sciences Jānis Stradiņš (on the left), and President of the Estonian Academy of Sciences Jüri Engelbrecht at Day of Science on 05.06.2004.

Participating at the Day of Science were representatives of local self-governments, headmasters and teaching staff, and those interested. Members of Academy Jaan Einasto, Jüri Engelbreht, Ain-Elmar Kaasik, Dimitri Kaljo, Rein Küttner, Georg Liidja, Ülo Lumiste, Leo Mõtus, Erast Parmasto, Loit Reintam, Huno Rätsep, Arved-Ervin Sapar, Mihkel Veiderma, Haldur Õim and the Foreign Member of Academy Jānis Stradiņš also visited the Cimze seminar and the cemetery.

On 19 May, Members of Academy Jaan Einasto, Ülo Jaaksoo, Ain-Elmar Kaasik, Dimitri Kaljo, Lembit Krumm, Rein Küttner, Agu Laisk, Ülo Lepik, Georg Liidja, Ülo Lille, Endel Lippmaa, Leo Mõtus, Arvo Ots, Peeter Saari, Arved-Ervin Sapar, Peeter Tulviste, Mihkel Veiderma and members of the Energy Council of the Estonian Academy of Sciences Ülo Rudi and Mati Valdma visited the Baltic and Estonian Power Plants. There was a meeting and discussion with management board of Narva Power Plants, a visit to the plants, among others to the power blocks under reconstruction.

On 3 March, the Board of the Estonian Academy of Sciences reviewed the work and directions of development of the Institute for International and Social Studies at Tallinn Pedagogical University (associated with the Academy since 2003). Also attending the meeting was Rector of Tallinn Pedagogical University Mati Heidmets and member of Science Competence Council Professor Alari Purju.

On 24 September the Board of the Estonian Academy of Sciences visited the Health Promotion Institute. In conversation with Director Maarike Harro and Research Director Toomas Veidebaum, the reorganisations witnessed in the Institute and the perspectives for the future were delved into.

This list does not include the participation by Members of Academy in those many discussions held in research institutions and scientific societies.

## NAMED MEDALS OF THE ACADEMY

At its session on 2 December 2003, Board of the Estonian Academy of Sciences approved the exemplary text of the statute of named medals of the Academy and approved, according to proposals of Divisions the statutes of medals – Nikolai Alumäe medal in informatics and engineering, Karl Schlossmann medal in medicine and related areas and Paul Ariste medal in social sciences and the humanities.

The first named medal of the Estonian Academy of Science – Karl Schlossmann medal (metal-artist *Margus Kadarik*)



was awarded to Member of Academy *Mart Saarma* for outstanding achievements in medicine and related areas, at the annual General Assembly of the Academy on 24 April 2004.

## KARL ERNST VON BAER PRIZE

In 2004, the Estonian Academy of Sciences awarded the Karl Ernst von Baer Prize to senior researcher of Institute of Zoology and Botany of the Estonian Agricultural University, head of K.E. von Baer Museum, Doctor of Philosophy



*Erki Tammiksaar*

for research of K. E. von Baer's scientific legacy, among others for publishing the K. E. von Baer's permafrost-focused manuscript "Materialen zur Kenntniss des unvergänglichen Boden-Eisen in Sibirien", together with his own commen-taries.

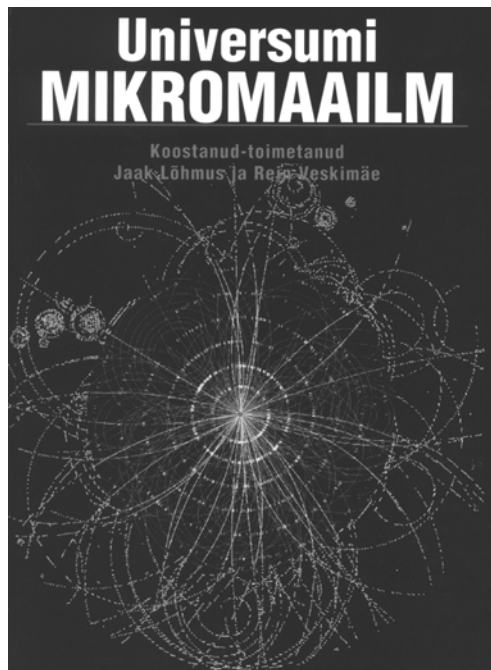


## PRIZE TO THE POPULAR SCIENCE BOOK

In 2002, the Estonian Academy of Sciences issued a prize for the best popular science book published in Estonia in 2002–2003

to authors of the book issued by  
OÜ Revers Grupp Publishers in  
2003 “Micro-world of the Uni-  
verse” (416 pp.)

*Jaak Lõhmus and  
Rein Veskimäe.*



## **SCHOLARSHIPS OF THE ACADEMY**

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In 2004, the Estonian Academy of Sciences assigned 4 scholarships, by public competition, for completion of monographic research works and popular science books. The Academy received 23 applications for the purpose. The Assessment Commission, comprising Member of Academy Ülo Lumiste (Chair), Members of Academy Hillar Aben, Loit Reintam and Haldur Õim considered the applications. On the basis of their proposal, the Board of the Academy assigned scholarships to the following scientists (Resolution of the Board of 25 May 2004, Minutes no. 3 § 18):

*Jaanus Harro* (University of Tartu) – 15 000 kroon, for publishing the book “The era of addictive drugs”; the manuscript is completed; there is an agreement with Tartu University Publishers to hand over the manuscript. The book is expected to appear in summer 2005;

*Raimo Pullat* (Tallinn Pedagogical University) – 15 000 kroon, for completion and publishing of the monograph “Formation of Estonian intellectuals in St. Petersburg. The town of great expectations.” The book appeared in the reporting year in Tallinn Book Printers;

*Heiki Valk* (University of Tartu) – 15 000 kroon, for publishing of the monograph “The country cemeteries of South Estonia: 13th–18th C.” The grant has been used for scanning and processing of the illustrations and for editing the language. The book will appear in 2005 in Tallinn Book Printers;

*Uno Valk* (Estonian Agricultural University) – 15 000 kroon, for publishing of the monograph “Estonian bogs and marshes. Ecological-forestry research”; the manuscript has been translated in English, laid out and edited. The book will appear in spring or summer 2005.

## **STUDENT RESEARCH PRIZES**

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On 25 May 2004 the Board of the Estonian Academy of Sciences called a competition of student research prizes. By the established deadline 104 papers were deposited with the Academy, of which 36 Master's thesis and 64 Bachelor, Diploma or graduation works, and 4 seminar and course papers. Majority of works came from the University of Tartu (66), 15 from Estonian Agricultural University, 12 from Tallinn Pedagogical University, and 5 from Tallinn Technical University. The remaining 6 works were from Estonian Academy of Arts, Estonian Marine Academy, Institute of Law, Institute for Social Sciences and the Humanities, the Lääne-Virumaa Professional Higher School and the Frankfurt J. W. Goethe University.

The papers were examined by Assessment Commission of the Academy, in the composition of Members of Academy Georg Liidja (in the chair), Arvo Krikmann, Udo Margna and Enn Tõugu. Outside experts were also involved in the assessment. At its session on 6 October the Commission decided to award four first prizes EEK 4000 (net) and sixteen second prizes EEK 2500 (net).

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

*Katrin Männik* (University of Tartu) Master's thesis "Development of man's X chromosome specific microfiche for identification of sub-microscopic alterations in DNA copy number related to mental retardation" (supervisor Associate Professor Ants Kurg);

*Arvo Tullus* (Estonian Agricultural University) Bachelor's thesis "Outcome of cultivation of hybrid aspen in the world and Estonia" (supervisors Professor Hardi Tullus and the researcher Aivo Vares);

*Ingrid Ulst* (J. W. Goethe Frankfurt University) Master's thesis "Financial Conglomeration Linkages between the European Union and Accession Countries: A Study on Developments and Implications of Financial Conglomeration" (in English; supervisor Professor Paul Berndt Spahn);

*Laur Vallikivi* (University of Tartu) Master's thesis "Arctic nomads between shamanism and Christianity: conversion of Jamb-to Nentsy to Babtism" (supervisor Lecturer Liivo Niglas).

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

*Ksenia Andrejeva* (University of Tartu) Bachelor's thesis "Analysis of time-series and the zero-zero game in redistribution of Baltic herring quota" (su-

supervisors Candidate in Biology Robert Aps and Doctoral student Margus Pihlak);

*Maria Dudkina* (Tallinn Pedagogical University) Bachelor's thesis "Cultural pattern of the world of the novel *Čapaev and Pustota* by Viktor Pelevin" (in Russian; supervisor Professor Irina Belobrovtsseva);

*Els Heinsalu* (University of Tartu) Master's thesis "Diffusion and Coherence of Brownian Particles on Tilted Periodic Potentials" (in English; supervisors Professor Risto Tammelo and Associate Professor Teet Örd);

*Mark Karimov* (University of Tartu) Bachelor's thesis "Bottom Sediment Mineralogy of the Western Norwegian Fjord" (in English; supervisors Professor Kalle Kirsimäe and Aivo Lepland);

*Rahel Maria Kasemaa* (University of Tartu) Bachelor's thesis "The mysterious Book of Esther – its literary motives and different versions" (supervisor MA Andres Gross);

*Kalle Kipper* (University of Tartu) competition work "*Trichoderma reesei* of cellobiohydrolase Cel7A kinetics with fluorescence marked celluloses" (supervisor Lecturer Priit Väljamäe);

*Jaanus Klaus* (Estonian Agricultural University) Bachelor's thesis "Comparison of maps on vertical movements of Earth's crust" (supervisor Lecturer Tarmo Kall);

*Meelis Kull* (University of Tartu) Master's thesis "Fast Clustering in Metric Spaces" (in English; supervisor Dr Jaak Vilo);

*Helen Nigol* (University of Tartu) Bachelor's thesis "Theory and practice of trees banks, suggesting a thought about trees bank of Estonian" (supervisor Lecturer Heli Uibo);

*Marge Reinap* (Tallinn Technical University) Bachelor's thesis "The economic load of diseases in Estonia in 2002" (supervisors Professor Marje Pavelson and MA Triin Habicht);

*Elo-Hanna Seljamaa* (University of Tartu) Bachelor's thesis "Chain letters in dialogue" (supervisor Professor Ülo Valk);

*Pille Säälük* (University of Tartu) Master's thesis "Mechanism, kinetics and efficiency of protein transport of peptides penetrating into cell, on the basis of model of biotinylated peptide and avidin complex" (supervisors Senior Researcher Margus Pooga and Associate Professor Sulev Ingerpuu);

*Dorel Tamm* (University of Tartu) Master's thesis "The sustainability of export capacity of manufacturing industry of Estonia, as depending on labour cost" (supervisors Professor Urmas Varblane and doctoral student Kristina Toming);

*Mai Uibu* (Tallinn Technical University) Master's thesis "Mineralising of CO<sub>2</sub> in oil shale energetics" (supervisor Senior Researcher Rein Kuusik);

*Evelyn Uuemaa* (University of Tartu) Master's thesis "Dependence of landscape indices on spatial resolution of frame of reference, and the indication value of nutrients and organic matter transport from catchment areas" (supervisors Professor Ülo Mander and Associate Professor Jüri Roosaare);

*Katrin Viigand* (University of Tartu) Bachelor's thesis "*Hansenula polymorpha* maltase gene promoter: research of regulation and estimate of strength" (supervisor Associate Professor Tiina Alamäe).

Research prizes together with diplomas were handed over on 26 October, at the conference of winners of competition of student papers. The conference heard the reports by five prize winners: *Ingrid Ulst*, *Laur Vallikivi*, *Ksenia Andrejeva*, *Arvo Tullus* and *Katrin Männik* on topic of their respective competition papers.

## **PUBLICATIONS OF THE ACADEMY**

Published in 2004 were

Books:

- “Estonian Academy of Sciences Year Book IX (36)” in Estonian\* and English \*;
- The eighth book in the series “National Science Prizes”, providing an overview of the award-winning scientists of 2004 and their research papers;

Brochures:

- “Private law based research and development institutions – experience and time”;
- “Activity of the Estonian Academy of Sciences 1999–2004”\*;

Jointly with the Union of Estonian Centres of Excellence in Research (editor-in-chief Member of Academy Endel Lippmaa) a collection was published titled “Estonian Centres of Excellence in Research” (ISBN 9985-50-370-8 in Estonian and ISBN 9985-50-371-6 in English)\*.

Scientific journals cf. p. 90.

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\* The electronic version cf. <http://www.akadeemia.ee>

## AWARDS

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### NATIONAL SCIENCE PRIZES TO THE MEMBERS OF ACADEMY

Awarded by the Ordinance of the Government of the Republic of Estonia, upon proposition by Commission for National Science Prizes no 99-k 20th February 2004.

FOR LONG AND PRODUCTIVE RESEARCH AND DEVELOPMENT WORK



*Cheslav Lushchik*

His main areas of research have been solid-state physics, optics and spectroscopy of wide forbidden band materials and radiation physics of dielectrics and high temperature superconductors. He has worked out and developed, with his co-workers the methods of thermo-activation spectroscopy and vacuum UV-spectroscopy, he has discovered and thoroughly studied the phenomena of propagation of photons and decay into pairs of electron-excitation structure defects, finding for them practical solutions. Cheslav Lushchik has established the Tartu school of physics of insulator crystals having won international renown and he has stimulated the establishment of research centres of the same area in Latvia, Kazakhstan, Russia and Kyrgyzstan.

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

Awarded by the Decree of President of the Republic no. 532, of 5 February 2004

Order of the White Star 3rd Class

Member of Academy *Ülo Jaaksoo*

Order of Merit Terra Mariana Cross 3rd Class

Foreign Member of Academy *Antero Jahkola*

Foreign Member of Academy *Jānis Stradiņš*

## **MEDAL OF THE ESTONIAN ACADEMY OF SCIENCES**

In 2004, decorated with the Medal of the Estonian Academy of Sciences for merits to the Academy were

Member of Academy *Ene Ergma*

Member of Academy *Ain-Elmar Kaasik*

Member of Academy *Ülo Lumiste* and

Member of Academy *Loit Reintam*

## **LETTER OF THANKS OF THE ACADEMY**

In 2004, Letter of Thanks of the Estonian Academy of Sciences was conferred to

*Irene Tiivel* for immense contribution to cultivating the English language of the Estonian scientists and expansion of their cultural field

and

*Silvi Sündema* for long dedicated work.



## ANNIVERSARIES

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Member of Academy

*Pavel Bogovski*

Pavel Bogovski was born on 10 March 1919 in Tartu, to a doctor's family. After getting the diploma of H. Treffner Gymnasium in 1937, he matriculated at Tartu University, Department of Medicine (1937–1941), thereafter studying at Alma-Ata Medical Institute (1941–1943), majoring as therapist. Called to active service, P. Bogovski served, up to the end of the war as a physician with Estonian Rifle Corps. Pavel Bogovski was awarded the degree of Candidate in Medicine in Tartu University in 1949, Doctor in Medicine in Leningrad Medical Institute for Sanitary Hygiene in 1961. In 1962 he received Professorship in Pathologic Anatomy and Oncology.



In 1965 Pavel Bogovski was elected Corresponding Member of USSR (later: Russian) Academy of Medical Sciences, in 1993 Member of Estonian Academy of Sciences.

Pavel Bogovski has had a life-long affiliation with Institute of Experimental and Clinical Medicine (including Directorship). Great has been Pavel Bogovski's contribution to research into the group of carcinogens called N-nitroso compounds, as originator and executor, both on the international level and in Estonia. His other important work was organization and management of the Department of Environmental Carcinogens of Cancer Research Centre in Lyon (1968–1974), within the framework of WHO.

In the recent decade Pavel Bogovski has focused on medical terminology, resulting in an impressive replenishment of the stock of Estonian medical terms. He has also completed the medical dictionary, translated from Finnish. Pavel Bogovski has published over 210 scientific writings, whereof three books. He has supervised and advised seven Candidates and three Doctors of Sciences.

In 1994, Pavel Bogovski was awarded Medal of the Academy for exemplary service rendered to the Academy. In 1998 Pavel Bogovski was decorated with Order of the White Star 3rd Class. In 1999 he was awarded the National Prize for Long and Productive Research. Pavel Bogovski has been elected by the Estonian public among 100 great figures in history of the 20th C.

Juhan Peegel was born on 19 May 1919 in the parish of Põide to a farmer's family. In 1938 he graduated from Saaremaa Coeducational Gymnasium. Before enrolling in Department of Philology of 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 Tartu University, Historical and Philological Department in 1951. He defended his Candidate's thesis in 1954, on morphology of the language of Estonian folklore. In 1954, on the initiative of Juhan Peegel, Tartu University started to train students majoring in Estonian philology, for subsequent work in press. He served as Dean of the Historical and Philological Faculty in 1964–1967. In 1973 Juhan Peegel defended his doctorate. He was elected Member of Estonian Academy of Sciences in 1977, and was awarded Professorship in 1978. In 1979 he was elected Head of the newly opened Faculty of Journalism. Presently he is Professor Emeritus of University of Tartu. He is Member of Estonian Writers' Union (1956) and Member of Estonian Journalists' Union (1973).



Juhan Peegel has blazed the trail in training the journalists and in research on journalism. He has published a wealth of articles on the Estonian language, history of literature and journalism; he participated in compiling the anthology "Estonian folk songs" and supplied the issue of "Kalevipoeg" with scientific commentary. 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, multi-part publication "Poetic synonyms of the noun in Estonian folk poetry" – the 1993 National Prize in the humanities. In 1996 Juhan Peegel was decorated with Order of the National Coat of Arms 4th Class. In 1998 he was awarded the National Prize for Long and Productive Research.

Juhan Peegel is the standard-bearer, whose pioneering work has had a tremendous impact on preservation and development of Estonian cultural heritage. He has been elected by the Estonian public among 100 great figures in history of the 20th C.

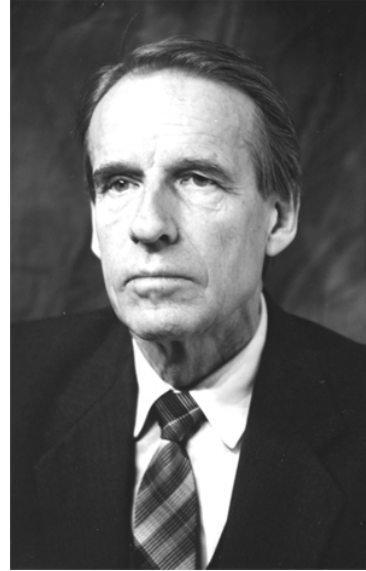
Hillar Aben was born on 3 December 1929 in Tartu, a son of a well-known linguist and translator. In 1948 he graduated from H. Treffner Gymnasium; in 1953 he graduated from Tallinn University of Technology, Building Department; he defended his Candidate of Sciences degree in 1957, the Doctor of Sciences degree in 1966. In 1977 he was elected Member of Estonian Academy of Sciences.

Hillar Aben has worked for the Institute of Cybernetics since 1960, successsively holding posts of Head of Department, Deputy Director and Director, from 1988 Head of Laboratory of Photoelasticity. He has done research in the integral photoelasticity method, in the field of optics of the distorted double refractory media.

The task of integral photoelasticity method is to determine, non-destructively the stress situation occurring in transparent objects. The devices created on the basis of his theoretical research have been implemented in glass factories in France and Japan. Hillar Aben has also published works in the area of mathematical modelling of city construction problems whose most important results are the formulation of the task of optimising the city structure and the proposal to handle the solution of a dual task as the appraisal of an objective value of the city territory. He has authored over 200 research publications.

In 1994 Hillar Aben was awarded the National Prize in Engineering for his monograph "Photoelasticity of glass" (co-authored by Claude Guillemet).

In the period 1994-2001 he was Member of Academic Council of the President of Republic and sat on Commission of National Science Prizes. In 2001 Hillar Aben was decorated with Order of the White Star 3rd Class. He is Head of Laboratory of Photoelasticity of Institute of Cybernetics at Tallinn Institute of Technology, and Editor-in-Chief of Proceedings of the Academy of Sciences. He belongs to the membership of European Academy of Sciences and Arts, Finnish Academy of Technology, Standing European Committee of Experimental Mechanics, and other international scientific organisations.



*Jaan Einasto*

Jaan Einasto was born on 23 February 1929 in Tartu as a son of a teacher. In 1947 he graduated from H. Treffner Gymnasium. When at school, he visited the lectures in astronomy at University, as external student. Having studied astronomy under a tailored program, he graduated from Tartu University in 1952. In 1955 he defended his Candidate of Sciences degree, in 1972 his Doctor of Sciences degree. As from 1952, Jaan Einasto has been working at Tartu Observatory, as researcher, senior researcher, Head of Department of Astrophysics, since 1977 of Department of Physics of Galaxies, and since 2004 of Department of Cosmology. Presently he is senior researcher at the same Department.



As from 1958 he has been on faculty at University of Tartu, supervisor of Diploma papers and Candidate works, in 1992–1995 holding the Joint Professorship of Cosmology. Jaan Einasto is Member of International Astronomical Union, Estonian Astronomical Society, *Academia Europaea*, Royal Astronomical Society (UK) and many international astronomical societies. In 1981 Jaan Einasto was elected Member of Estonian Academy of Sciences. Besides his regular work, in 1983–1995 he held the office of Head of Division of Physics, Mathematics and Engineering of the Academy, later Secretary-Academician of Division of Astronomy and Physics. As Member of the Board of the Academy, he was actively involved in reforming the science structure in Estonia in 1988–1995.

Jaan Einasto started his scientific career in the field of kinematics of star populations, thereafter tackling the methods of modelling the galaxies. He has released over 200 scientific publications, ranging from kinematics of galaxies and the devices tracing the artificial Earth satellites, to fundamental problems of cosmology. In the limelight of world scientific community is the research, done by Jaan Einasto and his colleagues on the orderly structure of the Universe.

In 1998, Jaan Einasto was decorated with Order of the National Coat of Arms 2nd Class, he was awarded the National Prize in Exact Sciences for the work “Research of the orderly structure of the Universe” (as leader of research group) and in 2003 – for Lend and Productive Research. In the period 1995–2001 he was Member of Academic Council of the President of Republic.

Ülo Lumiste was born on 30 July 1929 at Vändra. In 1947 he graduated from the Vändra Secondary School. In 1952 Ülo Lumiste graduated from Tartu University, majoring in mathematics. Promptly thereafter he was admitted into the faculty of Department of Mathematics, and seconded to Moscow University to get further training in geometry, the said University being then the hotbed of differential geometry. In 1959 Ülo Lumiste defended his Candidate of Sciences degree on differential geometry at Moscow University, the Doctor of Sciences degree in 1968 at Kazan University. In 1969 he was elected to the post of Head of Department of Algebra and Geometry, University of Tartu, and given Professorship.



In 1974–1980 he was Dean of Department of Mathematics. In 1993 Ülo Lumiste was elected Member of Estonian Academy of Sciences. As from 1995 he has been Professor Emeritus at University of Tartu.

Besides his narrow speciality – differential geometry and its applications – Ülo Lumiste has been keen on history of mathematics, in particular that of Estonia. Ülo Lumiste has released over 240 scientific publications, whereof 5 monographs.

He has supervised 13 Candidate of Sciences theses; he has been adviser to two Doctor of Sciences works. He is Active Member of American Mathematical Society and Member of International Commission of History of Mathematics, representing the Baltic area. Ülo Lumiste is Head of the Students' Research Prize Committee of the Academy. He was also, until end 2004 the Head of Research Scholarship Committee of the Academy.

In 1999 Ülo Lumiste was decorated with Order of the White Star 3rd Class; he was awarded the National Prize in Exact Sciences for the research cycle “Semi-parallel submanifolds in space-time forms”. In 2004 he was awarded Medal of the Academy for exemplary service rendered to the Academy.

Lennart Meri was born on 29 March 1929 in Tallinn to the family of diplomats. Together with family, he left Estonia when young, therefore his educational path proceeded through several schools, in different linguistic and cultural contexts. In 1941 his family was deported to Siberia. The family survived and eventually returned to Estonia, where in 1953 Lennart Meri graduated the University of Tartu majoring in history.

In the then prevailing political situation Lennart Meri could not work as historian. He found a job as editor in the Vane-moise theatre and as teacher in Tartu Art School.

Later he was editor of Estonian Radio, scriptwriter and producer of Tallinnfilm, Secretary for International Relations of the Estonian Writers' Union, promoter and Director of Estonian Institute etc. In 1990–1992 Lennart Meri was Minister of Foreign Affairs of Estonia and for a short time in 1992 Ambassador in Finland. In 1992 Lennart Meri was elected and in 1996 reelected President of the Republic of Estonia. Main areas of his activity and research have been ethnology, history and politics. He has created, basing on personal research and materials collected at expeditions, a number of various literary works, texts and films. He has also observed and analysed the development of cultural contacts, statehood, role of minor states and international relations over the times. As head of state and politician, he has, in his activity linking patriotism with the European and global values, he has been taking care of security of the state, the progress of its economy and culture and emphasising the essential role of education and science in the changing world.

Lennart Meri is laureate of Coudenhove-Kalergi Europe Prize and laureate of Prize for Freedom of the Liberal International, holder of orders of several countries. He was elected the European of the Year in 1998. He is member of Estonian Writers' Union and honorary member of the Union of Finnish Writers, member of Estonian Cinema Union, member of PEN-club and European Academy of Sciences and Letters. He is corresponding member of Finno-Ugrian Society and Finnish Literature Society, honorary doctor of Helsinki, Turku, Lapp and other universities. In 2002–2003 he was representative of the Government of the Republic of Estonia in the EU Future Convent. Lennart Meri was elected member of Estonian Academy of Sciences in 2001.



Loit Reintam was born on 12 November 1929 in Tallinn, being a son of a teacher, writer and farmer. In 1949 he graduated from the Nõmme Gymnasium, in 1954 he graduated from Estonian Agricultural University, majoring as agronomist. In 1960 Loit Reintam obtained the degree of Candidate in Agricultural Sciences for research of soils in South-Eastern Estonia, in 1974 the degree of Doctor in Biology for research into the automorphic pedogenesis. The outcome of his research laid down the clear orientation for working out a new classification of Estonian soils. Loit Reintam was awarded Professorship in 1977. In 1990 he was elected Member



of Estonian Academy of Sciences. In the Agricultural University Loit Reintam started his career from the bottom rung of the faculty scale: from technician-agrochemist, to Full Professor. In 1965–1994 he was Head of Department of Soil Science and Agrochemistry, in 1963–1966 the Dean. From 1999 Professor Emeritus, Loit Reintam has authored over 500 publications.

Loit Reintam is contact in Estonia of the Union of European Academies for sciences applied to Agriculture, Food and Nature, and the European Soil Bureau Network of Centres of Excellence in Soil Sciences. He is member of World Committee in Soils Resources and Classification and Nature Protection Commission of Estonian Academy of Sciences, and also member of several other scientific organisations. He sits on editing council of journals “Oil Shale” and “Biology. Ecology” and is member of the advisory committee of the “European Journal of Soil Science”. Besides that he has been member of Science Competence Council at Ministry of Education, Council of the Estonian Science Foundation and Council of Ministry of the Environment. In 1996, Loit Reintam was awarded Letter of Commendation of the International Union of Soil Science. In 1998 he was awarded Order of the White Star 3rd Class.

Loit Reintam has established the genetic-biological direction of research in Estonian soil science; he has done research into genesis and ecology of soils, the links between soils and production processes, the protection of soils and ecosystems. Loit Reintam is co-author of the Soil Map of Europe, regarding Estonia.

Mihkel Veiderma was born on 27 December 1929 in Tallinn to the family of a teacher. In 1948 he graduated from Tallinn Secondary Science School; in 1953 he graduated from Tallinn University of Technology, Department of Chemistry. After graduation from the University, he worked at Maardu Chemical Combine (1953–1960), four last years as Chief Engineer. Followed the work for Tallinn University of Technology, first as Associate Professor at Department of Chemical Technology. In 1965 he defended his Candidate's thesis and in 1972 the Doctor's thesis at the Research Institute of Fertilizers and Insectofungicides in Moscow. He was given



Professorship in 1973. In 1972–1997 (with a break in 1988–1994) he was Professor at Department of Inorganic and Analytic Chemistry, in 1978–1983 Dean of Department of Chemistry. Since 1997 he has been Professor Emeritus. In 1975 he was elected Member of Estonian Academy of Sciences. In 1988–1999 Mihkel Veiderma was Vice-President of Estonian Academy of Sciences, from 1999 he has been Secretary General of the Academy. In 1992–1994 he worked as Director of the Office of the President of Estonia.

He has studied the composition of natural apatites, their properties and methods of processing and has come close to synthesis of apatites, varying the alterations in their structures, so that materials of new properties and areas of use could be obtained. He has explored methods of obtaining and analysing polymer phosphates and their properties; he has analysed the technology and ecological problems related to use of phosphorite and oil shale, and the development of Estonian energy.

Mihkel Veiderma is the author of over 220 scientific articles. He is Honorary Member of Estonian Chemical Society and Estonian Naturalists' Society, Foreign Member of Finnish Academies of Technology, and Corresponding Member of Finnish Chemical Society. He is Member of Academic Council of the President of Republic, member of Commission of Sustainable Development of the Government, Chairman of the Energy Council of the Academy and also member of several other councils and commissions.

In 1998 he was decorated with Order of the White Star 3rd Class. In 2001 for his long work in promotion of co-operation between academies he was awarded the Medal of Academies of the Baltic States.



Ain-Elmar Kaasik was born on 2 August 1934 in Tallinn in the family of an educationalist. In 1953 he graduated from the Tallinn 10th Secondary School and enrolled in University of Tartu, Department of Medicine, which he graduated in 1959. Then he worked two years in the Põltsamaa regional in-patient clinic, to move on to University of Tartu, Neuropathology Clinic to stay. In 1967 he defended his Candidate's degree and in 1972 his Doctor's degree in Medicine. Followed the work on faculty in the positions of Associate Professor, Head of Clinic and Professor.



The main areas of concern of Ain-Elmar Kaasik have been pathology of blood circulation and metabolism in case of acute brain damages; vascular pathology of brain; dissemination of neuropathology, its diagnosis and treatment, especially the problems of intensive treatment. His list of publications features over 450 references.

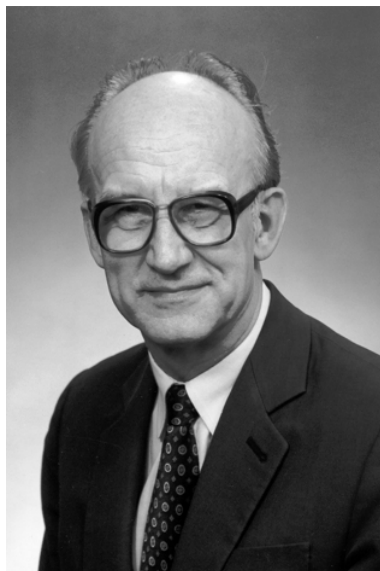
Ain-Elmar Kaasik is Member of Academic Council of the President of the Republic of Estonia, Chairman of the Registration Commission of State Agency of Medicines and Council of Population and Public Health, as well as member of Estonian Science Foundation and Council of Estonian Genome Project. He has sat on Research and Development Council and on Commission for National Science Prizes, and he has concurrently fulfilled several administrative tasks. In addition to professional and wider R&D activity Ain-Elmar Kaasik has served as a good inspiring example with his healthy mode of thinking both to his students and colleagues, in the domain of research and otherwise.

Ain-Elmar Kaasik is Corresponding Member of Scandinavian Society of Neurosurgeons and American Academy of Neurology, Member of The Royal Society of Medicine (UK), European Academy of Sciences and Arts and Polish Medical Academy, and Doctor Honoris Causa of the Uppsala University. He was elected member of Estonian Academy of Sciences in 1993. Starting from the end 2004 Ain-Elmar Kaasik has been Vice-President of the Academy.

In 1998 Ain-Elmar Kaasik was decorated with Order of the White Star 3rd Class. In 2003 he was awarded National Prize for long and productive research, and in 2004 he was conferred Medal of the Estonian Academy of Sciences for merits to the Academy.

*Udo Margna*

Udo Margna was born on 18 November 1934 in Viljandi. He graduated from, in 10 years the Viljandi 2nd Secondary School and enrolled in University of Tartu, Department of Medicine, majoring in pharmacy. He graduated from the University with Honours in 1957, and worked thereafter a little over 2 years in a chemist's shop in the Muhu island. His path of researcher started in 1959, when he joined the post-graduate programme with Institute of Experimental Biology of the Academy of Sciences (IEB), in plant biochemistry. He defended his degree of Candidate in Biology in 1963, and was awarded Doctor in Biology in 1983.



The aim of research by Udo Margna has been to investigate the metabolic background of biosynthesis and regulation mechanisms of flavonoids. On the basis of results of his work he has released *ca.* 120 research publications, including one monograph (Moscow, 1990). In 1998 he was granted the annual prize of the Estonian Apothecaries Union for long research.

Besides the research Udo Margna has been, on a regular basis involved in a wide-scale science organisation activity. In 1965–1987 he worked as director for research of IBE, in 1971–1990 he headed, as Chairman the activity of the Estonian National Plant Physiology and Biochemistry Problem Commission. Over 35 years, he has been sitting on editorial board of the series of Proceedings of Estonian Academy of Sciences “Biology. Ecology” (from 2001 as its Chairman). In 1996–1999 Udo Margna was Chairman of National Panel of Literature, Art and Research Prizes of the Baltic Assembly.

Over 25 years, Udo Margna has also been active on faculty of University of Tartu, Tallinn Pedagogical University and Estonian Agricultural University as visiting Lecturer and Professor Extraordinary. In 1994, he sojourned as visiting Professor in Münster University in Germany. From 2000, he has been on faculty in Tallinn Medical School, as curator. Udo Margna was elected Member of Estonian Academy of Sciences in 1987. In 1990–2000 he was Secretary General of the Academy.

Udo Margna considers science as his calling, however he also deems it important to maintain proper balance between work, family and hobbies.

*Johannes Piiper*

Johannes Piiper was born on 11 November 1924 in Tartu, a son of a University professor. In 1942 he graduated from H. Treffner Gymnasium, in 1952 he graduated from Göttingen University, Medical Department. In 1954 he defended the degree of Doctor in Medicine at the same University. In 1958–1959 he was trained at Buffalo University (USA). In 1960 Johannes Piiper was habilitated in Göttingen University as Professor of Physiology. He is Doctor *Honoris Causa* with Fribourg University (Switzerland) and Tartu University. In 1995 Johannes Piiper was elected Foreign Member of Estonian Academy of Sciences.



As from 1953 Johannes Piiper has been working for Max Planck Institute of Experimental Medicine, in 1973–1992 as Director of Department of Physiology. In 1975–1977 and 1987–1989 he was Managing Director of the Institute, as from 1992 he has been Professor Emeritus.

Johannes Piiper's primary research interests have been with respiratory physiology and comparative physiology. In that research area he has attained international acclaim. He has been active in many professional societies, e.g. Union of Pulmonary and Respiratory Researches, International Union of Oxygen Transport of Tissues, European Union of Comparative Physiology and Biochemistry, etc. He has published over 570 scientific works.

In 2002 Johannes Piiper was awarded Order of the White Star 4th Class of the Republic of Estonia.

75 Foreign Member of Academy  
*Carl-Olof Jacobson*

Carl-Olof Jacobson was born on 24 April 1929 in Ör, Sweden. In 1948 he graduated from the Secondary School in Vänersborg, in 1952 he graduated from Uppsala University, obtaining the Master's degree. The following academic degrees (1958 – Licentiate, 1964 – Doctor) were defended by Carl-Olof Jacobson at Uppsala University.

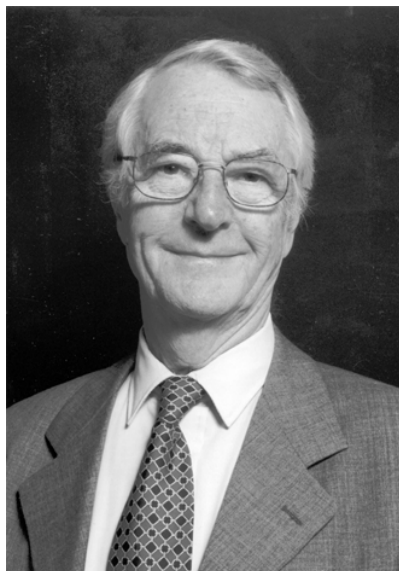
In 1964–1989 Carl-Olof Jacobson was on faculty of Uppsala University (in 1970–1989 as Professor in Zoomorphology), holding in 1977–1989 also the posts of Dean of Department of Engineering and Natural Sciences and Member of University Board.

In 1989–1997 he was Secretary General of Royal Swedish Academy of Sciences, sitting also on the Board of Directors of the Nobel Foundation. Carl-Olof Jacobson worked in 1967–1968, as visiting fellow with Wistar Biological Institute (Philadelphia) and in 1979, as visiting Professor with Texas University (Austin).

Carl-Olof Jacobson is Member of Royal Swedish Academy of Sciences and Royal Swedish Academy of Engineering Sciences. He is also Member of European Academy of Sciences, Arts and Letters; he is active in several professional associations (International Society of Applied Biologists etc.). Carl-Olof Jacobson is also Member of Steering Committee of the journal “AMBIO” that addresses the issues of human environment worldwide. He was elected Foreign Member of Estonian Academy of Sciences in 1995.

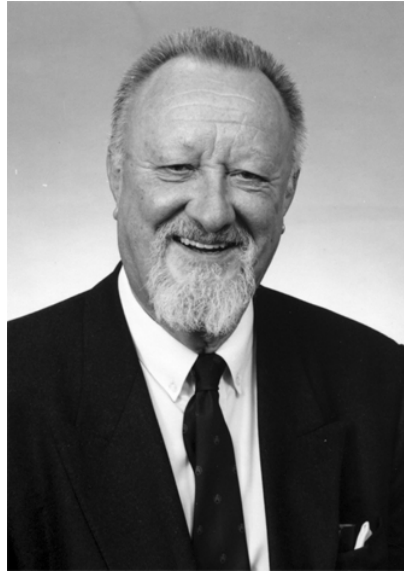
Carl-Olof Jacobson's main research is applied neurobiology and ecology of clean water.

In 2001 Carl-Olof Jacobson's long work in promotion of co-operation between Baltic and Nordic academies he was awarded the Medal of Academies of the Baltic States.



75      *Foreign Member of Academy*  
*Henn-Jüri Uibopuu*

Henn-Jüri Uibopuu was born on 11 October 1929 in Tartu. In 1946 he graduated from the Secondary School in Hildburghausen, Germany. In 1964–1968 Henn-Jüri Uibopuu majored in Graz University (Austria) in law and Russian, defending the Doctor's degree in 1968. As from 1969 he has been working at Salzburg University, first as assistant, thereafter as lecturer. In 1974 Henn-Jüri Uibopuu was habilitated at the same University on international and Soviet political law, in 1974 becoming Professor Extraordinary in international and comparative political law.



In 1977–1995 Henn-Jüri Uibopuu worked at the same University as Head of Department of Institute of International and Comparative Public Law. In 1995 he was elected Foreign Member of Estonian Academy of Sciences. As from 1995 he has been Professor *Honoris Causa* of International and Comparative Law with Department of Law of Salzburg University. As from 1992 Henn-Jüri Uibopuu has been Honorary Consul of Republic of Estonia in Austria.

Henn-Jüri Uibopuu has published over 150 scientific works (5 monographs) on international law, human rights, the refugees' rights, contract law and comparative political law. He has been Counsellor to President of Republic of Estonia on legislation and member of Constitution's Legal Expertise Commission of Government of the Republic. In 1998 Henn-Jüri Uibopuu was decorated with Order of National Coat of Arms 4th Class.

More anniversaries in 2004:

65th anniversary

16 April	Member of Academy Ülo Jaaksoo (elected Member of Academy 1986)
21 July	Member of Academy Arvo Krikmann (1997)
1 August	Member of Academy Jüri Engelbrecht (1990)

60th anniversary

29 February	Member of Academy Ene Ergma (1997)
28 November	Member of Academy Richard Villems (1987)
2 December	Foreign Member Gérard A. Maugin (2002)

55th anniversary

29 June	Member of Academy Mart Saarma (1990)
16 July	Member of Academy Mart Ustav (2001)

50th anniversary

11 January	Member of Academy Jaak Aaviksoo (1994)
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## MEMBERS OF THE ACADEMY

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As of February, 2005

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

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

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

**Pavel BOGOVSKI**, born 10.03.1919, elected 1993, oncology. Alma-Ata Medical Institute 1943. HOME ADDRESS Ilmarise 25-6, 11613 Tallinn ESTONIA, Tel: +372 651 4698. Married, three 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. Married, a son and a daughter.

**Jaani 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 Technical University 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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The organisations are used under names they bear today.

**Ene ERGMA**, born 29.02.1944, elected 1997, exact sciences. Moscow University 1969. Riigikogu (Parliament), Chairman (2003); Lossi palts 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: +372 747 4911. Single.

**Raimund HAGELBERG**, born 7.02.1927, elected 1981, economics. Tallinn Technical University 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 Technical University 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 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 5344 8420, 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.

**Dimitri KALJO**, born 12.10.1928, elected 1983, geology. University of Tartu 1953. Head of the Department of Palaeozoic Geology, Institute of Geology at Tallinn Technical University (1990); Estonia pst 7, 10143 Tallinn ESTONIA, Tel: +372 645 4653, Fax +372 631 2074, E-mail: kaljo@gi.ee. HOME ADDRESS Raja 7A-6, 12616 Tallinn ESTONIA, Tel: +372 672 6551. Married, a son and a daughter.

**Harald KERES**, born 15.11.1912, elected 1961, theoretical physics. University of Tartu 1936. Professor emeritus, University of Tartu (2000). HOME ADDRESS L. Koidula 6, 51006 Tartu ESTONIA, Tel: +372 742 2383. Widower, two daughters.



**Ilmar KOPPEL**, born 16.01.1940, elected 1993, physical chemistry. University of Tartu 1963. Extraordinary Professor, Institute of Chemical Physics, University of Tartu (1993); Jakobi 2, 51014, Tartu ESTONIA, Tel: +372 737 5263, Fax: +372 737 5264, E-mail: [ilmar@chem.ut.ee](mailto:ilmar@chem.ut.ee). HOME ADDRESS Kaunase pst 16-10, 50704 Tartu ESTONIA, Tel: +372 748 4351. Married, a son.

**Arvo KRIKMANN**, born 21.07.1939, elected 1997, the humanities. University of Tartu 1962. Senior Researcher, Estonian Literary Museum (2000); Vanemuise 42, 51003 Tartu ESTONIA, Tel: +372 737 7744, Fax: +372 742 0426, E-mail: [kriku@haldjas.folklore.ee](mailto:kriku@haldjas.folklore.ee). HOME ADDRESS Kastani 59-2, 50410 Tartu ESTONIA, Tel: +372 742 0079. Married, three sons.

**Lembit KRUMM**, born 20.07.1928, elected 1987, energetics. Tallinn Technical University 1952. Tallinn Technical University, Institute of Electrical Power Development (2004); Ehitajate tee 5, 19086 Tallinn ESTONIA Tel: +372 670 3602, E-mail: [kurrel@eeri.ee](mailto:kurrel@eeri.ee) HOME ADDRESS Trummi 4-19, 12616 Tallinn ESTONIA, Tel: +372 672 6513. Married, two sons and two daughters.

**Valdek KULBACH**, born 6.04.1927, elected 1986, mechanics. Tallinn Technical University 1951. Professor emeritus, Tallinn Technical University (1998); Ehitajate 5, 19086 Tallinn ESTONIA, Tel: +372 620 2408, Fax +372 620 2405, E-mail: [vkulbach@edu.ttu.ee](mailto:vkulbach@edu.ttu.ee). HOME ADDRESS Rõõmu 14-9, 10921 Tallinn ESTONIA, Tel: +372 677 8207. Married, two daughters.

**Arno KÖÖRNA**, born 2.02.1926, elected 1972, economics. University of Tartu 1955. Professor, Eurouniversity (1998); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel/Fax: +372 650 5120. HOME ADDRESS A. Kapi 9-22, 10136 Tallinn ESTONIA, Tel: +372 662 0628, E-mail: [arno.koorna@mail.ee](mailto:arno.koorna@mail.ee). Married, a son and a daughter.

**Rein KÜTTNER**, born 25.11.1940, elected 1997, technical sciences. Tallinn Technical University 1965. Professor of Manufacturing, Tallinn Technical University (2004); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3265, Fax: +372 620 3250, E-mail: [kyttner@edu.ttu.ee](mailto:kyttner@edu.ttu.ee). HOME ADDRESS Mooni 107-58, 13424 Tallinn ESTONIA, Tel: +372 652 5503. Married, a son.

**Hans KÜÜTS**, born 20.12.1932, elected 1994, agricultural sciences. Estonian Agricultural University 1956. Researcher, Jõgeva Plant Breeding Institute (1958); Aamisepa 1, 48309 Jõgeva alevik, Jõgeva maakond ESTONIA, Tel: +372 776 6914, Fax: +372 776 6902, E-mail: [ylle.tamm@jpbi.ee](mailto:ylle.tamm@jpbi.ee). HOME ADDRESS Tihase 11, 48309 Jõgeva alevik, Jõgeva maakond ESTONIA, Tel: +372 772 1375. Married, three daughters.

**Agu LAISK**, born 3.05.1938, elected 1994, natural sciences. University of Tartu 1961. Research Professor (2002); Riia 23, 51010 Tartu ESTONIA, Tel: +372 736 6021, Fax: +372 742 0286, E-mail: agu.laisk@ut.ee. HOME ADDRESS Haagejärve 2, 61401 Tartu ESTONIA, Tel: +372 749 3228. Married, three sons.

**Ülo LEPIK**, born 11.07.1921, elected 1993, mechanics. University of Tartu 1948. Professor emeritus, University of Tartu (1996); E-mail: ulo.lepik@ut.ee. HOME ADDRESS Lunini 3, 50406 Tartu ESTONIA, Tel: +372 738 0023. Married, two sons and a daughter.

**Georg LIIDJA**, born 4.08.1933, elected 1987, physics. University of Tartu 1957. Senior Researcher, National Institute of Chemical Physics and Biophysics (1982); Akadeemia tee 23, 12618 Tallinn ESTONIA, Tel: +372 639 8328, Fax: +372 639 8393, E-mail: gli@kbfi.ee. HOME ADDRESS Kärberi 41-43, Tallinn, ESTONIA tel +372 635 5878. MAIL ADDRESS Nimekast 3216, 10505 Tallinn ESTONIA. Married, a son and a daughter.

**Ülo LILLE**, born 16.09.1931, elected 1983, biotechnology. Tallinn Technical University 1955. Senior Research Scientist, Institute of Chemistry at Tallinn Technical University (1997); Akadeemia tee 15, 12618 Tallinn ESTONIA, Tel: +372 620 4383, Fax: +372 670 3683, E-mail: lille@chemnet.ee. HOME ADDRESS Trummi 32P, 12617 Tallinn ESTONIA, Tel: +372 672 6032. Married, two daughters.

**Endel LIPPMAA**, born 15.09.1930, elected 1972, chemical physics. Tallinn Technical University 1953. Head of the Laboratory of Chemical Physics, National Institute of Chemical Physics and Biophysics (1980); Rävalla pst 10, 10143 Tallinn ESTONIA, Tel: +372 644 1304, Fax: +372 644 0640, E-mail: kaja@kbfi.ee. HOME ADDRESS Sõbra 14, 10920 Tallinn ESTONIA, Tel: +372 677 7975. Married, two sons.

**Ülo LUMISTE**, born 30.06.1929, elected 1993, mathematics. University of Tartu 1952. Professor emeritus, University of Tartu (1996); J. Liivi 2-427, 50090 Tartu, ESTONIA, Tel: + 372 737 6419, E-mail: ulo.lumiste@ut.ee. HOME ADDRESS 19 Turu 19-28, 51004 Tartu ESTONIA, Tel: +372 734 4280. Married, two sons.

**Cheslav LUSHCHIK**, born 15.02.1928, elected 1964, solid state physics. St. Petersburg State University 1951. Senior Researcher, Institute of Physics at University of Tartu (1994); Riia 142, 51014 Tartu ESTONIA, Tel: +372 742 8946, Fax: +372 738 3033, E-mail: tseslav.lustsik@ut.ee. HOME ADDRESS Aardla 130-7, 50415 Tartu ESTONIA, Tel: +372 7 476 608. Married, a son.

**Viktor MAAMÄGI**, born 12.10.1917, elected 1961, history. St. Petersburg State University 1941. HOME ADDRESS Roosikrantsi 4C-4, 10119 Tallinn ESTONIA, Tel: +372 644 4008. Widower, a daughter.

**Udo MARGNA**, born 18.11.1934, elected 1987, plant physiology. University of Tartu 1957. Science Advisor, Tallinn Medical School, lecturer (2001); Kännu 67, 13418 Tallinn ESTONIA Tel: +372 671 1725, E-mail: udo.margna@medkool.ee. HOME ADDRESS Instituudi tee 16-10, 76902 Harku alevik, Harju maakond ESTONIA, Tel: +372 656 0630. Married, two daughters.

**Jüri MARTIN**, born 29.09.1940, elected 1990, ecology. University of Tartu 1964. Rector, Eurouniversity (1997); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel: +372 611 5804, E-mail: jmartin@eurouniv.ee. HOME ADDRESS Raja 7A-19, 12616, Tallinn ESTONIA, Tel: +372672 6544. Married, three sons and a daughter.

**Enn MELLIKOV**, born 1.04.1945, elected 2003, technology of materials. Tallinn Technical University 1968. Director of Department of Material Science, Tallinn Technical University (2002); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2798, E-mail: enn@edu.ttu.ee. HOME ADDRESS Silla 2-5, Saku 75501 Harjumaa ESTONIA, Tel: +372 604 1076. Married, two sons.

**Uno MERESTE**, born 27.05.1928, elected 1994, the humanities and social sciences. Tallinn Technical University 1950. Professor emeritus, Tallinn Technical University (1997). HOME ADDRESS Tuule tee 3, 12111 Tallinn ESTONIA, Tel: +372 623 2346. Married, a son and a daughter.

**Lennart MERI**, born 29.03.1929, elected 2001, the humanities. The President of the Republic of Estonia 1992-2001. HOME ADDRESS Haabneeme, 74001 Viimsi vald, Harjumaa ESTONIA, Tel: +372 693 1986, Fax: +372 631 6281. Married, two sons and a daughter.

**Leo MÕTUS**, born 15.12.1941, elected 1993, informatics. Tallinn Technical University 1965. Secretary General, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 5810, Fax: +372 645 1805, E-mail: Leo.Motus@akadeemia.ee. HOME ADDRESS Rooski 7, 10922 Tallinn ESTONIA, Tel: +372 672 4024. Married, two daughters.

**Arvo OTS**, born 26.06.1931, elected 1983, power engineering. Tallinn Technical University 1955. Senior researcher, Heating Technology Institute, Tallinn Technical University (2003); Kopli 116, 11712 Tallinn ESTONIA, Tel: +372 620 3904, +372 620 3900, Fax: +372 620 3901, E-mail: aots@sti.ttu.ee. HOME ADDRESS Metsa 62B, 11620 Tallinn ESTONIA, Tel: +372 657 6034. Married, a son and a daughter.

**Viktor PALM**, born 17.09.1926, elected 1978, organic chemistry. St. Petersburg State University 1952. Professor emeritus, University of Tartu (1994). HOME ADDRESS Mõisavahe 22-10, 50707 Tartu ESTONIA, Tel: +372 748 8584, E-mail: viktor.palm@ut.ee. Married, a son and a daughter.

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

**Juhan PEEGEL**, born 19.05.1919, elected 1977, philology. University of Tartu 1951. Professor emeritus, University of Tartu (1993). HOME ADDRESS Kaunase pst 25-26, 50706 Tartu ESTONIA, Tel: +372 748 6463. Married, two sons.

**Anto RAUKAS**, born 17.02.1935, elected 1977, geology. University of Tartu 1958. Head of Department of quaternary geology, Institute of Geology at Tallinn Technical University (1965); Estonia pst 7, 10143 Tallinn ESTONIA, Tel: +372 645 4659, Fax: +372 631 2074, E-mail: raukas@gi.ee. HOME ADDRESS Trummi 32N, 12617 Tallinn ESTONIA, Tel: +372 672 6031. Married, two daughters.

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

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

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

**Huno RÄTSEP**, born 28.12.1927, elected 1981, the Estonian language. University of Tartu 1951. Professor emeritus, University of Tartu (1994). HOME ADDRESS Uus 36-74, 50603 Tartu ESTONIA, Tel: +372 742 3974. Married, a son and a daughter.

**Peeter SAARI**, born 2.06.1945, elected 1986, physics. University of Tartu 1968. Professor of waves optic, University of Tartu (1997); Riia 142, 51014 Tartu ESTONIA, Tel: +372 738 3016, Fax: +372 738 3033, E-mail: peeter.saari@ut.ee. HOME ADDRESS Fortuuna 1-45, 50603 Tartu ESTONIA, Tel: +372 510 9018. Married, two daughters.

**Mart SAARMA**, born 29.06.1949, elected 1990, molecular biology. University of Tartu 1972. Director of the Institute of Biotechnology, University of Helsinki (1990); P.O. Box 56 (Viikinkaari 9), FIN-00014 University of Helsinki FINLAND, Tel: +358 9 191 59 359, Fax: +358 9 191 59 366, E-mail: mart.saarma@helsinki.fi. HOME ADDRESS Kulosaaren puistotie 38A-4, FIN-00570 Helsinki FINLAND, Tel: +358 9 684 5721. Married, a son and a daughter.

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**Peeter TULVISTE**, born 28.10.1945, elected 1994, the humanities and social sciences. Moscow State University 1969. Member, Riigikogu (Parliament) (2003); Lossi plats 1a, 15165 Tallinn ESTONIA, Tel: +372 742 0504, +372 503 3659 E-mail: Peeter.Tulviste@akadeemia.ee. HOME ADDRESS Sihi 25, 50411 Tartu ESTONIA, Tel: +372 730 4706. Married, a son and a daughter.

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**Mart USTAV**, born 16.07.1949, elected 2001, biomedicine. Head, Institute of Technology, University of Tartu (2004); Riia 23, 51010 Tartu ESTONIA, Tel: +372 737 4801, Fax: +372 737 4900, E-mail: mart.ustav@ut.ee. HOME ADDRESS Jaama 58A, 50604 Tartu ESTONIA, Tel: +372 740 3312. Married, a son and three daughters.

**Gennadi VAINIKKO**, born 31.05.1938, elected 1986, mathematics. University of Tartu 1961. Project Leader, Department of Applied Mathematics, University of Tartu (2004); Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 5490, E-mail: Gennadi.Vainikko@ut.ee. HOME ADDRESS Kivi 23-19, 51009 Tartu ESTONIA, Tel: +372 510 7101. Divorced, two sons and a daughter.

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**Richard VILLEMS**, born 28.11.1944, elected 1987, biophysics. University of Tartu 1968. President, Estonian Academy of Sciences (2004); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 2129, Fax: +372 645 1805, E-mail: Richard.Villems@akadeemia.ee. HOME ADDRESS Pallase 126-3, 51013 Tartu ESTONIA. Married, a son and a daughter.

**Haldur ÕIM**, born 22.01.1942, elected 1994, the humanities and social sciences. University of Tartu 1965. Professor, Department of Estonian and Finno-Ugric Linguistics, University of Tartu (2004); Ülikooli 18, 50090 Tartu ESTONIA, Tel: +372 737 5941, +372 737 6143, Tel/Fax: +372 737 5224, E-mail: haldur.oim@ut.ee. HOME ADDRESS Hiie 12, 51006 Tartu ESTONIA, Tel: +372 742 2272. Married, a son and two daughters.

## FOREIGN MEMBERS

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

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

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



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

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**Ivar UGI** (Germany), born 5.09.1930, elected 1991, chemistry. Professor emeritus, Technical University of München (1999); Institut für Organische Chemie und Biochemie, Technische Universität München, Lichtenbergstrasse 4, D-85747 Garching, GERMANY. HOME ADDRESS am Mühlbach 19, D-85748 Garching, GERMANY, Tel: +49 89 320 1494. Married, a son.

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

## ESTONIAN ACADEMY PUBLISHERS

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Website: <http://www.kirj.ee>  
Director: Ülo Niine, Tel: +372 645 4504,  
Fax: +372 646 6026, [niine@kirj.ee](mailto:niine@kirj.ee)



In 2004, the Estonian Academy Publishers issued ten scientific journals, peer-reviewed and indexed in international review publications. The Publishers' main mission has been to maintain a high standard as regards the contents of journals, their typographic performance, timely release and introduction of electronic version of journals, besides hard copy.

In 2004, the journals were issued in the following volume:

Title	Number of issues per year	Total volume in printed sheet
Proceedings of the Estonian Academy of Sciences	20	90.0
whereof the series		
Biology. Ecology	4	20.5
Physics. Mathematics	4	17.0
Geology	4	18.0
Chemistry	4	13.5
Engineering	4	21.0
Oil Shale	4	24.0
Linguistica Uralica	4	20.0
Trames	4	27.0
Acta Historica Tallinnensia	1	12.0
Estonian Journal of Archaeology	2	11.5
Total	35	184.5

Five series of the “Proceedings of the Estonian Academy of Sciences” and the journals “Trames” and “Oil Shale” are electronically available on website of the electronic publishers EBSCO <http://www.ebsco.com>. For electronic publishing of the journal “Linguistica Uralica”, there is an agreement made with EBSCO.

In 2004 there were more special issues of journals – in the “Proceedings of the Estonian Academy of Sciences” the total of 7, in journal “Trames” – two, plus one supplementary special issue in “Estonian Journal of Archaeology”:

- “Biology. Ecology” no. 4: Special issue on the Estonian coastal sea. Guest editors J. Kotta and G. Martin;
- “Physics. Mathematics” no. 2: Special issue on approximation and regularization methods. Guest editor A. Pedas;
- “Geology” no. 3: Special issue on the Precambrian basement of Estonia. Guest editor A. Soesoo;
- “Chemistry” no. 1: Special issue on capillary electrophoresis. Guest editor M. Kaljurand;
- “Engineering” no. 2: Special issue on biomedical engineering. Guest editor H. Hinrikus;
- “Engineering” no. 3: Special issue on electronics. BEC 2004. Wide band-gap semiconductor structures. Measurement and processing of sensor signals. Guest editor M. Min;
- “Engineering” no. 4: Selected papers of the 4th International DAAAM Conference on Industrial Engineering. Guest editor J. Papstel;
- “Trames” no. 1-2: Human genetic databases: ethical, legal and social issues. Guest editor M. Sutrop;
- “Trames” no. 4: Governance and good governance. Guest editors V. Pettai and E. Illing;
- “Estonian Journal of Archaeology” no. 2: Special issue on maritime landscapes. Guest editor M. Mägi.

All 10 journals appeared upon or prior to schedule.

An agreement was made and necessary original materials were presented to include the journal “Linguistica Uralica”, “Estonian Journal of Archaeology” and “Acta Historica Tallinnensia” into C.E.E.O.L. database. The journal “Trames” is already there. Hence all ten journals of the Publishers are electronically available either in the database of EBSCO or C.E.E.O.L.

The Publishers participated in several book fairs and book sales:

- At Baltic Book Fair on 13–15 May in Tallinn, in Saku Suurhall, with a separate stand together with Academic Library of Tallinn Pedagogical University;
- At Frankfurt Book Fair on 17–20 September with a partial exposition on the joint stand of Estonian Publishers Union;
- At Helsinki Book Fair on 28–31 November with a partial exposition on the joint stand of Estonian Publishers Union;
- At Christmas Sales on 7–11 December in the National Library in Tallinn.

Besides journals, 2004 witnessed the publication of 12 books, either as a result of direct publishing effort of the Publishers, or with a contribution of the Publishers (the total of 2066 pages), all commissioned. Worth of special mentioning are the following:

- monograph “Texts about art and architecture II. Arts Literature in Estonia 1864–1900” (editors J. Keevallik, R. Loodus and L. Viiraja, 432 pp.);
- collection “Paul Kogerman and his time” (compiler A. Kogerman, 284 pp.);
- collection “Estonia. Geographical Studies” (compiler J.-M. Punning, 228 pp.);
- “Palearctic Lyophylleae (Tricholomataceae) in Northern and East Europe and Asia” (K. Kalamees, 136 pp.);
- memoirs “Peat and electricity from Ellamaa” (H. Pitsner and A. Tammaru, 128 pp.);
- monograph “Research and protection of inanimate natural monuments” (E. Pirrus, 136 pp.).

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

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

Personnel: 15, including 10 researchers

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

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

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

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

Academic Secretary: Piret Kruuspere, Tel: +372 644 3147, [piret@utkk.ee](mailto:piret@utkk.ee)

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

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

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

The major areas of research of Literature Centre are:

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

Drama and theatre research has also been carried on, and the gender-research aspect to the literature is represented as well. Literature Centre participates in the work of rhetoric module of Centre of Excellence in research of Estonian History of Culture and Folklore at Estonian Literary Museum.

Starting from 2003, the Literature Centre has been granted a governmental research project "Estonia's Identity Narrative: Ideological and Rhetorical Mo-

dels of Cultural Discourse” (supervisor Jaan Undusk). The goal of the project is to find new ways for historical in-depth description of Estonia’s national, ethnic and cultural identity. The range of texts used as sources vary from the belletristic to the historiographical and dramatic ones. In addition to the fairly advanced nation-centred arguments, in this project some cultural-geographical factors as well as these pertaining to the history of ideas are emphasised. With the help of typological research, several philosophical and theological main-streams of the Ancient Greece and Christian Europe are being modelled as rhetorical and narrative processes (Jaan Undusk, Rein Undusk). The same kind of rhetorico-narratological models have been applied to describe the German-Estonian bilingual Baltic literary space (Jaan Undusk, Liina Lukas, Vahur Aabrams), at the same time attaching much more importance than usual to the Baltic-German factor in Estonia’s historical identity, which is directly related with the background of the Estonian culture. The Centre continues to organize the international Baltic German literary symposia. The research of earlier Estonian literature has also been carried on (Hilve Rebane and Head of the Humanities Department of the Rocca al Mare High School, Jaanus Vaiksoo).

In the subdivision “Estonian Culture in the 20th Century” (supervisors Aare Pilv and Professor of Tallinn Pedagogical University, Rein Ruutsoo), the aim is to provide an integral treatment of the rise of modern Estonian culture in the 20th century and its situation at the end of the last century. The view of Estonian culture is provided both per professional fields of activity (“specialty narratives”) and in conceptual crosscuts (Piret Kruuspere, Jaan Undusk, Deputy editor-in-chief of the literary magazine “Looming” Toomas Haug and commissioned authors from other institutions).

The research of Estonian culture of the 20th century involves a number of individual topics (Estonian ethnic narrative – Epp Annus; the role of Estonian theatre and drama in formation of national identity and mentality – Piret Kruuspere; models of intertextuality in Estonian poetry – Anneli Mihkelev, author and literary subject as the basis of self-identity – Aare Pilv; A. H. Tammsaare’s work from the viewpoint of gender studies – Mirjam Hinrikus, translations into Estonian in the 20th century – Hilve Rebane).

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

with scientific forewords and detailed commentaries, this series of works will be source publication both for researcher and student, and also for general public as interesting reading matter.

Within the state programme “The humanitarian and natural science collections”, the Museum has performed, since 2004 the project “Scientific collections of Under and Tuglas Literature Centre” (supervisor Eha Rand). The goal is organisation of collections of scientific-cultural value, improvement of the depositing conditions and optimising the possibilities of use.

Literature Centre runs two series of publications: “Collegium litterarum” for studies on literary history, and “oxymora”, devoted to dominantly theoretical writings; plus the Collected Works by Friedebert Tuglas and separate issues.

2004 witnessed the publication of Vol. 10 of F. Tuglas’ “Collected works” (“Criticism VII”. Concluding remarks by Margit Arusoo and Toomas Haug. Commentaries by Margit Arusoo and Ülle Kurs. “Criticism VIII”. Concluding remarks and commentaries by Toomas Haug; 525 pp.).

In 2004 the researchers of Literature Centre authored altogether 13 scientific publications in foreign languages and 28 in Estonian, where of 20 in peer-reviewed issues. Besides, abstracts of 8 scientific papers were published. The contract-based participant in the research project Toomas Haug released a collection of articles, published by Foundation of the Estonian Language “The Vow of Troojamägi. 33 pieces of writing” (455 pp.).

In 2004 the Centre continued its editorial work on a number of issues. Being completed is the editing of the omnibus volume “Estonian Exile Literature in the 20th Century” (edited by P. Kruuspere), as well as the collection of articles in English dedicated to the novel by F. Tuglas “At the End of the World” – “At the End of the World: Text, Culture, Motif” (edited by R. Undusk). The collection of articles marking the 85th jubilee of Jaan Kross “Metamorphic Kross. Insights into the work by Jaan Kross” (compiled by E. Laanes, edited by Ü. Kurs) will appear in February 2005.

In co-operation with the Institute of Literature, Folklore and Arts of Latvian University and the Institute of Literature and Folklore of Lithuania, the lexicon of Baltic writers is in progress (edited by A. Mihkelev). In co-operation with Estonian Literary Museum the third volume of “Works” by F. R. Faehlmann and in co-operation with Frankfurt am Main J. W. Goethe University the collection of the second international Baltic-German symposium (edited by J. Undusk) are also in progress.

In 2004, the Literature Centre organised the following academic events:

On 3 June in Tartu, the seminar “The female writers in the Baltics in the 19th Century” was held in collaboration with the Estonian Goethe Society,

On 9 October, the seminar “J. Randvere’s “Ruth” in the cultural context of the turn of 19th-20th Centuries” was held in Käsnu.

In 2004 the researchers of the Literature Centre delivered 33 scientific papers and expert lectures. Of those 9 were given at international scientific events.

The Literature Centre encourages co-operation with universities, and thus 6 of its collaborators have lectured at University of Tartu, Estonian Academy of Art, Tallinn Pedagogical University and Frankfurt am Main J. W. Goethe University; besides they have supervised over students’ course papers, reviewed and opposed B.A. and M.A. theses. The Centre continued co-operation with the Academic Library of Tallinn Pedagogical University

The affiliated Museum was visited by the total of 540 people in 2004. The Museum organised 32 literature and culture lectures and excursions, and served 131 researchers. The Museum supervised the museum practice of students of the Culture Department of Tallinn Pedagogical University.

In collaboration with Adamson-Eric Museum, preparations were started to organise the art exhibition dedicated to F. Tuglas’ 120th anniversary in 2006 in Tallinn and in Marienhamn in the Åland Islands. The Centre has started to compile the album of F. Tuglas’ art collection. Tape-recordings of historical-cultural value have been recorded on CDs, providing for their preservation and enabling their wider use.

The Centre made preparations for framing part of the artworks, and modernised the monitoring of conditions of preservation of collections. In order to join the international co-operation network, the Centre has started to create the electronic database KVIS.

From July to September, the capital repairs of the Museum building in Nõmme took place: after winterising of the socle and external walls, the heat-proofness of the house has significantly improved. The next object badly needing repairs is the roof of the building.



## **FINANCIAL ACTIVITY**

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### **BUDGET OF THE ESTONIAN ACADEMY OF SCIENCES FOR 2004 AND ADMINISTRATION OF BUDGET (thou kroon)**

	Budget	Implemen- tation
INCOME		
ALLOCATIONS TO THE ACADEMY OF SCIENCES FROM THE STATE BUDGET	16610.0	16610.0
For basic activities of the Academy	11150.0	11150.0
For fees of Members of Academy	3960.0	3960.0
For fees of research professors	1500.0	1500.0
OTHER RECEIPTS	2085.4	2124.8
Target allocations of Ministry of Education and Research	925.4	925.4
incl. To capital repairs of Academy House	560.0	560.0
For repayment of student loan	8.4	8.4
For membership fees to international science organisations	357.0	357.0
From letting the premises and guest rooms (Kohtu 6) and receipts from other institutions	455.0	492.6
From sale of printed matter and commissioned works (Academy Publishers)	705.0	706.8
ALLOCATIONS TO UNDER AND TUGLAS LITERATURE CENTRE	2275.1	2352.8
Through Ministry of Education and Research	2087.1	2161.9
incl. Target funding of research	786.0	786.0
For infrastructure expenses	352.0	352.0
For fulfilment of state programme	400.0	442.5
For repayment of student loan	7.1	5.8
Investments for capital repairs of the Museum	542.0	575.6
Target allocations	140.0	178.2
From sale of literature	48.0	12.7
Total income	20970.5	21087.6

## EXPENDITURES

### GENERAL BREAKDOWN

For activities of the Academy (through Academy Office)	6333.0	6425.5
Estonian Academy Publishers	4285.0	4324.6
Fees of Members of Academy	3960.0	3960.0
Fees of research professors	1500.0	1500.0
For repayment of student loan	8.4	8.4
Prizes and scholarships	227.0	215.4
incl. Baer prize	26.7	26.7
Prize for popular science books	26.7	26.7
Scholarships	80.0	60.0
Prize for student papers	93.6	102.0
Under and Tuglas Literature Centre	2275.1	2306.9
Scientific societies	1115.0	1115.0
incl. Estonian Naturalists' Society	430.0	430.0
Mother Tongue Society	140.0	140.0
Estonian Geographical Society	130.0	130.0
The Society for Estonian Regional Studies	115.0	115.0
Estonian Union of the Philosophy and History of Science	100.0	100.0
Estonian Learned Society	100.0	100.0
Estonian Literary Society	100.0	100.0
Membership fees to international science organisations	357.0	71.3
Capital repairs of the Academy premises	560.0	560.0
Statutory reserves (Office)	350.0	92.5
Total expenditures	20970.5	20579.6

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

Salary	2934.2	3004.7
incl. To full-time staff	2500.0	2585.0
To part-timers	283.2	273.2
Fees to Professors-Emeritus	99.0	99.0
Benefit to widows of Members of Academy	52.0	47.5
Payroll tax	950.0	972.9
Office expenses	400.6	434.7
Running costs of buildings and premises	410.8	400.8
Purchase and maintenance of devices and inventory	501.4	470.3

Transportation costs	190.0	197.3
Business trips	215.0	256.1
Expenses on General Assemblies, academic lectures and seminars and on corporate hospitality	171.0	162.8
Expenses on committees and Divisions	20.0	20.0
Expenses on Foundation for International Exchange	450.0	445.3
Auditing	35.0	35.0
Repairs of Academy premises	55.0	25.6
Total expenditures	6333.0	6425.5
ESTONIAN ACADEMY PUBLISHERS		
Salaries	1755.0	1800.8
incl. To full-time staff	1670.0	1755.5
To part-timers	85.0	45.3
Payroll tax	588.0	603.3
Administration expenses	590.0	534.4
Printing expenses	650.0	540.0
incl. On issues of Board of Academy	100.0	100.0
Purchase of devices and inventory	50.0	96.3
Expenses related to commissioned works	652.0	749.8
Total expenditures	4285.0	4324.6
UNDER AND TUGLAS LITERATURE CENTRE		
Salaries	1025.0	967.3
incl. To full-time staff	950.0	891.8
To part-timers	75.0	75.5
Payroll tax	343.0	324.0
Administration expenses	365.1	440.0
Capital repairs of the Museum	542.0	575.6
Total expenditures	2275.1	2306.9

## **ASSOCIATED INSTITUTIONS**

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

Since 1989 the Academy has made independent association agreements with Institute of Zoology and Botany at Estonian Agricultural University, Tartu Observatory, Institute of Ecology at Tallinn Pedagogical University, Estonian Academic Library (now in the composition of Tallinn Pedagogical University), Institute of the Estonian Language, Estonian Literary Museum, and Institute for International and Social Studies at Tallinn Pedagogical University.

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

## **INSTITUTE OF ZOOLOGY AND BOTANY AT ESTONIAN AGRICULTURAL UNIVERSITY**

Associated with the Estonian Academy of Sciences

27.01.1998

Founded 1947

Up until the change of structure on 01.01.2005

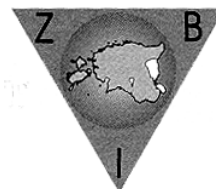
Personnel: 121, whereof 60 researchers

Address: Riia 181, 51014 Tartu, ESTONIA, [zbi@zbi.ee](mailto:zbi@zbi.ee)

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

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Scientific Secretary: Märt Rahi, Tel: +372 742 8021, [mrahi@zbi.ee](mailto:mrahi@zbi.ee)



There were no significant changes in research topics of the Institute. Research of the Institute was carried out within the framework of 8 target funded topics and 18 grants from the Estonian Science Foundation. The volume of commissioned research stabilised and accounted for about one third of the total budget. The majority of those were hydro-biological works, the main clients being Ministry of the Environment and local self-governments. Co-operation within the EU research programmes increased.

The hydro-biologists participated in five larger international projects, added to which were four target financed research topics, nine grants and 28 applied projects. In 2004, in the research topic “Evolution and change of biological diversity in different types of lake under impact of human activities (Estonia – Denmark – Holland)” the attention was focussed on halotrophic shallow coastal lakes heretofore less researched among the types of Estonian lakes. For the main outcome of the topic “Impact of climatic changes on eco-system of shallow lakes” it was found that the outbound channelling of nutrients and organic matter from the Võrtsjärv catchment area is strongly related to climatic changes. The link between the concentration of various substances and the outbound channelling, and the outflow is different. The links change by season and by year, the latter being mainly controlled by the winter air temperature. The team brought clarity to the causes of death of fish in crisis situations in the Peipsi lake and obtained the first results about spread of poison of Cyanophyceae. The research about distribution of toxic substances in eco-system of rivers revealed that the increase of content of organic matter in the river Emajõgi and in the Narva river was seconded by the growth in sediments of the content of poly-cyclic aromatic hydrocarbons (PAS). At the same time, the growth in trophicity lowered, in the general case, the PAS content in fish.

In the target financed topic of the Botany Department “Changes in vegetation of cultivated natural areas: biological and horological aspects, aspects of genetic variation and protection of population and production” the population dynamics of a number of species of declining numbers were studied, as well as the factors impacting on their horological trends and numerousness. With the observed plant groups (*Carex*, *Botrychium*, *Orchidaceae*) involved in comparative studies were, on the level of local populations, beside Estonia, also the populations of respective species elsewhere in Europe. The team started research in genetic variation of populations of species *Carex loliacea* and *C. irrigua* in different areas of Europe, with the aim to linking this with different changes of distribution pattern of those species. Application of genetic techniques in systematic study of families *Bromus*, *Vicia*, *Potentilla* and *Neotinea* highlighted a number of specificities in regularities of evolutionary dynamics of those groups. The study of agro-cultivated natural habitats revealed the extent to which the species-specific clonal growth parameters are related to dissemination of species in various habitats. The team intensively continued the research into sewage purification capacity of rapidly growing willow clones, their production and aero-biologic monitoring.

The Baer Museum handed over to the “Nauka” Publishers the manuscript of scientific biography of A. v. Middendorff, to be released in 2005. The Museum continued writing of the book “50 Baltic German Natural Scientists”, for which articles about Adam Johann von Krusenstern, Otto von Kotzebue and Fabian Gottlieb von Bellingshausen were completed.

The mycologists released three monographs: systematic and dissemination of family *Lyophyllaceae*, and *Hyaloscyphaceae* and the distribution maps of Estonian fungi (3. volume bore fungi).

Ornithologists studied the difference of species of big and small spotted eagle. The analysis of morphological features indicated that the coincidence of external features derives from the occurrence of inter-species hybrids, while the gene transmission between the taxons is evidently restricted. The habitat research too confirms that the spotted eagles may be considered, the regular crossbreeding notwithstanding, as being different species. In co-operation with scientists of Holland and Russia, the team started finding out the non-nesting period dissemination pattern of the water bird colony of the Peipsi lake, its correlations with the nutrient basis of the lake and hydrological conditions. Against the Estonian example, the mid-winter International Waterbird Census assessed the quality of data collected by coastal observations, and the options of use thereof for nature protection goals.

The entomologists continued determination of material collected at East-Australian expedition (2002). They continued the monitoring projects of insects started in 2003 and compiled the database of type specimen preserved in the

Institute's entomological collection – according to specified data the collection has 38 lectotypes (in collections of G. Flor and W. Petersen), 267 holotypes and 2666 paratypes.

Worth mentioning among the books released is, in the first place the monograph “Võrtsjärv” in English, meant for international readers, a logical follow-up to the earlier released version in Estonian. The compilation and editing of both issues was largely the responsibility of the Department of Hydrology.

In connection with reorganisation and streamlining taking place in Estonian Agricultural University, the Institute of Zoology and Botany formally terminated its activity on 31 December 2004. The majority of personnel continue their research effort in the new Institute of Agriculture and the Environment, successor of the Agronomy Department, Institute of Experimental Biology, Institute for Environmental Protection, Polli Horticulture Institute, Institute of Zoology and Botany and Research Centre of Plant Bio-Technology EVIKA.

## TARTU OBSERVATORY

Associated with the Estonian Academy of Sciences  
8.05.1998



Founded 1808

Personnel: 58, of which 35 researchers

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

Director: Laurits Leedjärv, Tel: +372 741 0265, Fax +372 741 0205,  
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Head of Information Team: Mare Ruusalepp, Tel: +372 741 0261,  
[mare@aai.ee](mailto:mare@aai.ee)

Tartu Observatory continued research work in areas of astronomy and atmospheric physics, as characterised, in more detail by names of the target financed research topics:

- Evolution of structures in the Universe from deep past until the present days (supervisor Member of Academy Jaan Einasto);
- Structure, chemical composition and evolution of stars (supervisor Tõnu Kipper);
- Foundations of optical remote sensing of environment in Estonia and Baltic region (supervisor Tiit Nilson).

Estonian Science Foundation subsidised our research within 12 grant projects. Certain income was earned from contractual works commissioned by Estonian Ministry of the Environment and Centre of Environmental Investments; additional support was provided by Marie Curie reintegration grant of the European Commission.

Numerically, the outcome of 2004 is represented by 47 research articles published in journals and collections of conferences, including 18 CC articles. Those figures are relatively unpretentious, against the background of the last years, however the list of preprints contains 16 works, of which the bulk will become peer-reviewed journal articles in 2005. There were 89 popular science articles put out, a sizeable part of which on the topic of weather, interesting to all. Some of our astronomers translated a number of popular science articles and essays by Ernst Julius Öpik, one of the outstanding figures of the 20th C. (a scientist of Estonian descent who mostly wrote in English), in order to collect them into a book. At the beginning 2005, the “Ilmamaa” Publishers released the volume “Our cosmic destiny”, the 60th book in the series of History of Estonian Thinking. Also released were the traditional issues of the Observatory: Calendar of the Observatory and Yearbook.



For 2004, the following need be pointed out in short (Yearbook cf. [www.aai.ee](http://www.aai.ee)):

- Structure of Universe has been the concern of a dozen of researchers and some doctoral and master students. Lately, the cosmologists of Tuorla Observatory of the Turku University have seemingly become our most important co-operation partners, so that sometimes there is a mention made of a joint Tartu-Turku cosmology group. In 2004, the researchers continued to study the characteristics of galaxy clusters and super-clusters on large scales, using for that large digital deep sky survey data made freely available. Developed were the  $N$ -body simulations, and with their help, the dynamics of dark matter and the halos around the galaxy systems composed of that unknown matter were studied. Within the framework of that topic, smaller galaxy groups were modelled, as well as double and individual galaxies, and the models of dynamic and chemical evolution of galaxies were developed. Continued was the research of our own Milky Way by means of radio observations of high-velocity hydrogen clouds.
- The topic of build-up, chemical composition and evolution of stars embraces the hot Wolf-Rayet type stars, cold carbon stars, symbiotic and pre-cataclysmic binary stars, Be/X-ray binaries and other objects. The researchers developed the techniques of modelling of stellar atmospheres and computation of synthetic spectra and the statistical methods for analysis of observational time-series. The Observatory continued participation in preparation of space project GAIA.
- The topic of optical remote sensing of the environment embraces both the monitoring of the surface of the earth and the atmosphere. Introduced was the measurement system for registration of spectra of ultraviolet radiation. The team continued the use of satellite pictures for research of the state and changes in atmosphere and surface of the earth (forest and agricultural lands in Estonia and neighbouring countries). As a new aspect, remote sensing of Estonian water reservoirs was added. The distribution of radiation in canopy was studied, besides the domestic grey alder plantations, also in Finnish forests and Spanish thickets and underbrush. Our most important co-operation partners of canopy researchers too are located in the neighbouring country Finland; there were joint seminars held in Tõravere and Helsinki.

Besides traditional foreign trips and reception of guests, one of the benchmarks in international communication was organisation of the annual meeting of Board of Directors of the journal *Astronomy and Astrophysics* in Tartu, immediately after Estonia acceded to the European Union.

Although the study of astronomy took roots in Tartu almost 200 years ago, one of the significant signs on the roadmap was the year of 1964, when the

new Observatory complex was opened in Tõravere. On 1 October 2004 we celebrated the 40th anniversary of that event, by holding a festive meeting, planting oaks and having a soiree of remembrances. This was also the year to remember Bernhard Schmidt (1879–1935), a renowned optician and craftsman of telescopes coming from the Estonian island of Naissaare. On 13 April we held, together with the Academy of Sciences, a commemorative seminar on the occasion of his 125th anniversary.

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

Associated with the Estonian Academy of Sciences  
16.06.1998



Founded 1992

Personnel: 41, of whom 26 researchers

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In 2004, scientific research was carried out within the framework of 42 topics of different levels and projects, incl. 4 topics target-financed by Ministry of Education and Research, and 7 Estonian Science Foundation grants, 3 international cooperation programmes and besides 7 Doctoral and 6 Master's theses. Implementation in practice of research outcome was effected under 28 co-operation agreements.

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

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

Work carried out within the framework of topic "Natural and human induced trends of the lake trophicity development in the Holocene: reconstructions and projections"(supervisor: Jaan-Mati Punning) – modelling basing on paleo-ecological databases – provides the presently most adequate pictures regarding the trends of development of ecosystems in changing natural conditions and in increasing human impact. Proceeding from the general ideology of the topic and the trends prevalent in the world, the team continued implementation and testing of new research techniques (diatom analysis, cladoceran analysis, analysis of macrophytes and integration analysis). Finalised was the reconstruction of water level changes of the Lake Viitna Linajärv and the Lake Väike Juusa. Subjected to a comprehensive research were the sediment profiles of those lakes; the interpretation of paleobiological, geochemical and litological results based on analysis of surface sediments.

Research in the framework of the topic “Climate change impact on the structure and functioning of wetlands” (supervisor: Edgar Karofeld) is focusing on the analysis of presumably significant pathways of climate change impact on shores and wetlands. It was found out that on gravel-shingle shores, the capacity of onshore drift is over 10 times lower than longshore drift. On sandy shores the correlation between the waves activity, location of shoreline and the changes of its configuration is much weaker. The team showed that increase in the number of trees and growth of wooded areas in Estonian mires in the past half-century has been caused, in the first place by intensified evapotranspiration and impact of drainage dikes. As a result of research carried out in the Männikjärve bog massif it was established that in hot and droughty summers the nutrient-rich ground water may also rise to the upper layers of bog peat deposit within the reach of plant roots, causing changes in the plant growth and peat accumulation.

Within the framework of the topic “Ecophysiology of carbon cycle” (supervisor: Olevi Kull) the research was performed in four subsections: feedback between environmental conditions and spatial heterogeneity of plant communities; interconnection in canopy of photosynthesis and transpiration levels; impact of global changes (in particular increasing CO<sub>2</sub> and ozone concentration) on photosynthesis within leaf canopy; natural fluxes of CO<sub>2</sub>. The researchers continued co-operation with Michigan University of Technology. The team researched the temporal dynamics decomposition, compression, and accumulation of organic matter in the past 30 years, with domination of peat moss in the acrotelm of bog peat (supervisor of sub-topic Mati Ilomets). Used as temporal markers, were the marker pegs stuck in bog peat in 1974. It was found that the decomposition of organic matter accumulated in Sphagnum moss peat is a short-time process (takes 2–3 yrs), the following condensation of the organic matter may take decades and will continue also when the layer reaches the stage of catotelm. Decomposition of undergrowth plants takes place at deeper layers and is, to all evidence a longer-term process.

The geo-botanical research carried out within the framework of the topic “Trends of development of industrial landscapes in North-East Estonian oil shale mining area” (supervisor: Valdo Liblik) showed that in quarry groves different tree species (pine, birch, larch, common alder) have different impact on the undergrowth. The plant coverage of naturally renovated groves is similar to that of planted pine and birch groves, testifying to the fact that planting of trees on the quarry surface is not requisite for development of plant canopy and that the spontaneous development may result in formation of analogical forest plants. The energetic comparison of re-cultivation alternatives of quarry areas showed that the expenses for growth of one unit of biomass are lesser in the naturally renovated habitats, and the largest in planted pine groves. The energy yield of natural habitats twice exceeds that of the planted habitats, which is a proof to their larger efficiency. It was found that

in connection with closing of the Ahtme and Tammiku mines in 1999–2001 and stopping the routing of the mine water to the river Pühajõgi, the hydrological balance of the catchment area changed considerably. In order to preserve the river landscape of the landscape protection area of Oru park, an additional quantity of water – 15–20 million m<sup>3</sup> per year (from the operating Estonia mine) – must be channelled to the rivers of the Pühajõgi catchment area.

In 2004 the personnel of the Institute published 50 scientific articles and separate publications: in international scientific issues 32 articles, in Estonian scientific issues 14 articles, plus 3 separate publications and 1 textbook, plus popular science articles, abstracts etc. The researchers of the Institute delivered at international conferences 16, at national conferences 11, at in-house scientific seminars 29 presentations. Another volume in the series of publications “Proceedings of Institute of Ecology. Geo-ecological studies” was released.

Majority of the applied researches were directed at analysis of the situation of environment and the possibilities to improve it. Acting as a co-ordinating agency, the Institute performs in Estonia an extensive international project – KEKO (National Capacity Needs Self-Assessment for Global Environmental Management). The applied research has tended to be directed towards research-centred and more general environmental policy projects.

In summer 2004, the Institute participated at organisation of two international conference-excursions and seminars, of which the more extensive was the excursion to mires (XXVIII Moorexcursion) in co-operation with Institute of Botany of the Bern University. The excursion was attended by 44 scientists, coming from various countries.

Researchers of the Institute contributed to the faculty effort in different universities. They were more active in delivering lectures and supervising undergraduate and post-graduate students in Tallinn Pedagogical University, University of Tartu, Tallinn University of Technology and Estonian Agricultural University. Altogether 13 researchers of the Institute supervised the Doctoral and Master’s papers. Of the Institute personnel, the Doctor’s degree was awarded to Ene Kadastik. M.Sc. in geo-ecology was awarded to Annika Mikomägi, Liisa Puusepp and Hannes Tõnisson.

## ACADEMIC LIBRARY AT TALLINN PEDAGOGICAL UNIVERSITY

Associated with the Estonian Academy of Sciences 17.06.1998

Founded 1946

Personnel: 179

Address: Rävala pst 10, 15042 Tallinn, ESTONIA, ear@ear.ee

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

Director: Andres Kollist, Tel: +372 665 9402,

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Aita.Kraut@ear.ee



In the development of the Library, the hallmark for 2004 was Tallinn Pedagogical University, where the Estonian Academic Library was attached in the last year. That was the year of reorganisation and setting the transmuted goals. The architectural blueprints of the new building complex of the Library were completed, so was the preliminary project of the new internal design of the readers' zone. The Library continued redesign of the reading halls and expansion of open access. Both in reading halls and conference hall the visitors were made available the wireless Internet (WiFi), opened was the 15-seating computer hall, e-service got impetus, the list of services offered by the Library was replenished.

### REPLENISHMENT AND DEVELOPMENT OF STOCKS

In replenishment, the Library based on tasks arising from Statute and unified replenishment plan of the scientific libraries. The study library was procured under orders of the departments of Tallinn Pedagogical University. Of each Estonian publication the Library regularly receives one deposit copy. Earmarked for replenishment was EEK 4.8 million (including EEK 0.3 for study library), of which foreign periodicals accounted for EEK 2.2 million and foreign books *ca* EEK 1.2 million. The active holdings were replenished by *ca.* 20 thousand units of printed matter.

Within the framework of ELNET Consortium, the Library has organised the regular access to EBSCO electronic databases, science databases containing full texts of journals *ScienceDirect*, *Kluwer Online*, *Blackwell Synergy*, *Springer Lecture Notes in Computer Science*, as well as electronic journals of leading publishers *Cambridge University Press*, *Institute of Physics*, *American Physical Society* and reference databases *Psycinfo*, *MathSciNet*, *Zentralblatt Math Database*, and also the net version of the journal *Nature*. Within the framework of Consortium, the 2005 agreements on net version of the reference books of publishers *Oxford University Press* (*Oxford Reference Online*, *Oxford English Dictionary* and *Grove Music Online*) have been

prolonged. Adding in 2005 as new joint purchases will be *PsycArticles* and *Communication & Mass Media Complete*. The total number of electronic journals is 16,484. During the year, one can estimate 87 databases from 14 different bidders.

For the next year, 306 titles of journals published abroad were ordered (of which 100 titles from Russia). The WWW use accompanying the hard copy has been purchased for 61 titles, of 11 journals only the WWW version has been ordered, without the hard copy. On the open access of periodical issues were more than 1,300 titles of journals and magazines. The lists of ordered foreign language periodicals and online databases are available on website of the Library.

The foreign exchange relations were maintained with 286 institutions and organisations in 35 countries, due to foreign exchange the active holdings were replenished by 1,950 stock units of printed matter worth over half a million kroon.

The largest donation came from Professor Emeritus of Hamburg University, in the yonder times citizen of Tallinn Karl Heinz Borck – notably his specialist library (philology, history, Baltica).

The entries of the new acquisitions are recorded, as received, into the joint electronic catalogue of ESTER. At the same time, the card catalogues are being converted. By the end of the year the active holdings numbered 2.3 million stock units, of which ca. one third was available in the electronic catalogue.

#### READER SERVICE

For the reader service the year of 2004 was crucial. Basically the renovations were related to unifying the service in two houses – the study library (Narva mnt 29) and scientific library (Rävala pst 10). A unified reader's card was instituted, the loan terms were co-ordinated, as well as registration in queue for the acquisition, payment of the penalty, the number of acquisitions for homelending. The theretofore separately operating inter-library loan was united, a joint readers database was created.

By the end of 2004, registered in electronic database of readers were 34,260 readers. The target group of readers – research staff, faculty members, specialists, university students, post-graduate and doctoral students account for over 86% of readers. From public law based universities the readers totalled 12,011 (35% of the whole readership). The scientists who were not very numerous among our active readers in 2004 (662), were frequent visitors of the Library – 11.7 visits per every scientist. Research institutions of Tartu and Tallinn received during the year, for use from open access periodical issues 2,864 journals (250 titles).

With a view to present the accessions to the readers, 40 exhibitions were held, where the total of *ca* 7 thousand stock units were on display. There were 65 lists of accessions compiled, they are up on website. To present the collections, 29 topical or anniversary exhibitions were held, including on occasion of the 85th anniversary of Tallinn Pedagogical University, composed from publications of researchers and faculty staff of the University. The Library continued the expositions in the series “New generation scientists of Estonia”. This time the literary criticism was the order of the day.

In reading halls, replacement of earlier text terminals with graphic terminals provided to readers the opportunity, besides the electronic catalogue ESTER, to enter Internet and to perform text processing and spreadsheet. At the disposal of the readers in the reading halls are the total of 77 computer work places. The computer hall opened in autumn enabled to start user training of the databases.

#### BIBLIOGRAPHICAL WORK

On 17 February the Library held the bibliography-related conference “From card file to database” (the 3rd national day of bibliography in co-operation with Estonian Librarians’ Association).

Continuing was the work for compilation of the retrospective national bibliography. In 2004 that work was supported with 30 thousand kroon by Estonian Culture Capital, enabling the bibliographers of the Library to collect data in Swedish scientific libraries. In the Royal Library, it was possible to use the paid database of ancient printed matter *Hand Press Book* (HPB) of the Consortium of European Research Libraries (CERL), out of access in Estonia, unfortunately.

At the beginning of the year, the Library made a co-operation agreement with National Library for creation of joint WWW-based database of national bibliography. The database is available in the website starting from May 2004.

The Library continued co-operation with Russian National Library for compilation of international joint catalogue “International union catalogue of Russian books (1918–1926) = Международный сводный каталог русской книги 1918–1926”, the project involves over 200 libraries, archives and museums from more than 30 countries.

The Library replenished the original bibliographical databases compiled in WWW-environment *Haridus* (volume by the end of the year 19130 entries), *Tallinn Pedagogical University* (17801), *Academic Library at Tallinn Pedagogical University publications* (2216), *Finno-Ugrian* (4629), *Estonian Geography* (5547), *Hungary* (3055), *VEART* (articles in expatriate Estonian periodicals, 5685), *VEILUVÕÕR* (new database, the fiction of expatriate Estonian authors in foreign languages published from 1944, entries 406) and *VEPER*



(personal database used to respond to requests, containing biographical data of outstanding expatriate Estonian – 150 personal entries).

Published was another Bibliography of Finno-Ugric ethnography and folklore for 2003, in co-operation with Estonian Academy Publishers.

#### RESEARCH AND DEVELOPMENT

8 workers have the scientific degree, of whom four have the doctor's degree and four the master's degree. Enrolled in doctoral study are 3 and in master's study 6 workers. Starting from 2004, there are two researcher's positions in the staff of the Library, of which one is vacant.

The bulk of research focused on history of the book, to which the rich treasury of the Library offers countless opportunities, in the first place the collections of the Baltica and Rare Book Department. The research of the history of these collections is a regular concern of the Library. The detailed overview of reflection of historical collections of Academic Library at Tallinn Pedagogical University in international information sources was compiled by Tiiu Reimo, PhD (to appear in yearbook of the Library). The research on the topic of publishing effort of expatriate Estonians has been continued by Anne Valmas (PhD), focusing on publications of expatriate Estonian authors, which have appeared as issues of non-Estonian publishers, universities, research institutions and other organisations of their countries of domicile.

For optimising the library related processes, a research on use of collection of periodicals is underway (the respective database contains the information for use of 3635 periodical issues within the last 7 years), the results whereof will be applied in the first place in designing the collections; the researchers analysed the composition of readers and the rate of visiting the Library, and made preparations for joint study of efficiency of work of scientific libraries.

The IT developments were directed at increasing the efficiency of reader service and the whole library work. Launched has been the extensive replacement of text terminals with graphic terminals. The entries of bibliographic databases were converted from ProCite to Biblioserver and the work with all databases continued in WWW-environment. In co-operation with the University, the frame of reference of e-publishing was set down, on the Library website the rubric "E-dissertations" was developed, to present the doctoral papers defended in Tallinn Pedagogical University.

Library is a member of the following international organisations:

- IFLA (International Federation of Library Associations);
- ISKO (International Society for Knowledge Organizations);
- Bibliotheca Baltica (Amalgamation of Libraries of the Baltic Sea Countries).

Library is a founding member of ELNET Consortium (Estonian Library Network).

## **INSTITUTE OF THE ESTONIAN LANGUAGE**

Associated with the Estonian Academy of Sciences  
11.05.1999



Founded 1947

Personnel: 67, of whom researchers 29, editors 11

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

Director: Urmas Sutrop, Tel: +372 644 9843, Fax: +372 641 1443

[Urmassutrop@eki.ee](mailto:Urmassutrop@eki.ee)

Academic Secretary: Hille Pajupuu, Tel: +372 644 3472,

[Hille.Pajupuu@eki.ee](mailto:Hille.Pajupuu@eki.ee)

Institute of the Estonian Language is successor of Institute of Language and Literature, founded in 1947 in the composition of the Estonian Academy of Sciences. As from 1995, the Institute has been in the administrative domain of Ministry of Education and Research. In 1999, the Institute associated with the Estonian Academy of Sciences.

Institute of the Estonian Language has three departments:

- Department of standard written Estonian grammar, in short Grammar Department, Head Peeter Päll, MA.
- Department of standard written Estonian vocabulary, in short Lexicological Department, Head Margit Langemets, MA.
- Department of Estonian dialects and cognate languages, in short Dialectological Department, Head Kristiina Ross, PhD.

Grammar Department and Lexicological Department perform the target funded research “Lexical and grammatical structure of modern Estonian” (2003–2007), leader of topic Urmas Sutrop, Dr. Phil. Dialectological Department performs the project specifically funded topic “Geographic and diachronic transformation of Estonian” (2003–2007), leader of topic Kristiina Ross, PhD.

The language planning and terminology group of the GRAMMAR DEPARTMENT launched in 2004 the language care project (new website <http://www.eki.ee/keeleabi>, by e-mail the language consultation, the language care course). Renovated and upgraded was co-operation with the language planning experts in our neighbouring countries (Lithuania, Latvia, Sweden, Finland). Released from print were “Student’s ÕS” (ÕS = Orthological Dictionary), the volume “The language consultation recommends 3”, the volume of Henn Saari’s linguistic minutes and the papers of International Terminological Conference 2003.

With regard to Grammar Group, special mention should be made of the working out of XML-based structure standard of a bilingual dictionary (jointly with the Lexicological Department). Prepared were the web-versions of dictionaries, among others ÕS 1999 (Ülle Viks, Indrek Hein).

The language technology experts continued efforts in rendering the synthesised speech more natural (Meelis Mihkla, Hille Pajupuu); studies in the area of conversion were pursued.

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

- “Eesti kirjakeele seletussõnaraamat” [Dictionary of Standard Written Estonian]: 24th fascicle appeared (*unemaa – varjutaluv*), 25th fascicle was edited (R. Karelson, L. Veskis, T. Valdre, M. Tiits);
- “Eesti-vene sõnaraamat” [Estonian Russian Dictionary]: being edited was volume IV (T. Lagle, M. Liiv, N. Melts); the data of the published volumes were converted to the form of XML-database (A. Loopmann jointly with Ü. Viks), created was the web-version of compilation and editing of Estonian Russian Dictionary (A. Loopmann);
- The Estonian–X-Language Dictionary: worked out was the form of presentation of syntactic information (M. Koppel, Ü. Viks, M. Langemets), preparations were made for creation of XML-based web-version (A. Loopmann).

Defended in University of Tartu were 1 doctoral thesis and 1 Master’s thesis (Ene Vainik, doctoral thesis “Lexical Knowledge of Emotions: The Structure, Variability and Semantics of the Estonian Emotion Vocabulary”, supervisor U. Sutrop Dr. Phil.; Külli Kuusk, Master’s thesis “*Õnnis*-stem words as equivalents to the stem *barak* in Hebrew and the stem *eulogeia* in Greek”, supervisors K. Ross PhD and Siret Rutiku PhD).

In co-operation with Tallinn Pedagogical University, the 3rd applied linguistics conference was held, the Estonian Union of Applied Linguistics (ERÜ) was established, cf. <http://www.eki.ee/rakenduslingvistika/>, the peer-reviewed yearbook of ERÜ was founded.

DIALECTOLOGICAL DEPARTMENT continued editing the Dictionary of the Estonian dialects, the replenishment of etymological card-file of the Estonian language and the compilation of Estonian etymological basic dictionary. Dictionary of the Estonian dialects proceeded as planned. During the year, 2 fascicles appeared:

- Dictionary of the Estonian dialects. Vol. III, 15th fascicle (*kreep – kuldänja*). Edited by A. Haak, M. Kendla, J. Viikberg. Eesti Keele Instituut. Tallinn: Eesti Keele Sihtasutus, 2004, pp. 821–1032.
- Dictionary of the Estonian dialects. Vol. IV, 16th fascicle (*kuma – kõhvima*). Edited by A. Haak, E. Juhkam, M. Kendla, J. Viikberg. Eesti Keele Instituut. Tallinn: Eesti Keele Sihtasutus, 2004, pp. 1–212.

Starting from 1985, the Department has been party to joint projects “Atlas Linguarum Fennicarum” (Institute of the Estonian Language, Kotimaisten kielten tutkimuskeskus of Finland, Institute of Language, Literature and History of the Karjala Scientific Centre of Russian Academy of Sciences), in the framework of which the first part of the atlas appeared (Atlas Linguarum Fennicarum. Itämerensuomalainen kielikartasto. Läänemeresoome keeleatlas. Ostseefinnischer Sprachatlas. Лингвистический атлас прибалтийско-финских языков. ALFE 1. Suomalaisen Kirjallisuuden Seuran Toimituksia 800. KKTK julkaisuja 118. Helsinki: Suomalaisen Kirjallisuuden Seura 2004, 464 pp., and “Atlas Linguarum Europae” (with participation from research institutions of 40 European countries).

An important area of the Department is the place names and personal names research (Marja Kallasmaa, Lembit Vaba). The Department participates in joint projects “Onomastica Uralica” (Institute of the Estonian Language, Kotimaisten kielten tutkimuskeskus of Finland, Debrecen University) and the “Base map of Estonia” (Institute of the Estonian Language, EURO-map).

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

In 2004 the researchers of the Institute of the Estonian Language published 15 publications viewed as separate books and 15 scientific articles in indexed and peer-reviewed issues, the staff of the Institute delivered 49 papers.

## **ESTONIAN LITERARY MUSEUM**

Associated with the Estonian Academy of Sciences  
11.05.1999

Founded in 1909 as Archive Library of the Estonian National Museum  
Centre of Cultural History and Folkloristics in Estonia from 2001

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

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Website: www.kirmus.ee

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Hallmarks of the year of 2004 in Estonian Literary Museum were traditions & contemporaneity, interdisciplinarity & co-operation, multiplicity of tasks & nodus of choices. With poignancy keener than in the earlier years we conceived, in 2004 the onus of responsibility of our Museum for preservation and development of Estonian ethnic culture. Namely, in the year when the Republic of Estonia became member of European Union and NATO, we commemorated the 95th anniversary of the Archival Library of Literary Museum and the 75th anniversary of the Estonian Cultural History Archives. The colourful and proud history of archives of the Literary Museum obligates and enthuses us to bear the responsibility assumed and to honour the commitments taken.

### **INTERDISCIPLINARITY AND CONTEMPORANEITY**

Research done in Literary Museum as an R&D institution focused on five target funded topics. The research topic supervised by Triinu Ojamaa "Musical text and context in traditional culture" distributed into several independent research works, ranging from typology of Estonian folk melodies to the specific and traditional aspects to the music of Finno-Ugrian peoples. Within the framework of the research topic "Creation, communication and interpretation of folklore: process and institutions" (supervisor Aado Lintrop) the research of folk poems in the form of old Estonian folk songs, the traditions of ethnic Estonians living in Russia, the modern folklore, the place tradition and folk beliefs. Research topic "Folklore of Estonia and other peoples: tradition, identity and globalisation" (supervisor Mare Kõiva) focused in the first place on problems of short forms of folk poetry, folk stories and folk belief, studying their change and implication in the globalising world. Two research topics are related with literature. Of them the topic supervised by Sirje Olesk "Estonian history of culture as agent of ethnic culture" continued the study of individual

issues of the history of Estonian literature and culture and their links. Virve Sarapik's topic "Topology and texture of Estonian literature. Intersemiotic analysis" was focused on textual means of expression, the text and context of literature as work of art.

Proof to the sustainability of research topics are the research grants and research projects stemming from the topic. Thanks to eleven grants of ESF, Literary Museum had an opportunity to involve master students and doctoral students in research work in 2004.

The national programme opened in 2004 "The Estonian language and the ethnic memory" provided new opportunities to applied projects in the humanities. Literary Museum fulfilled 9 projects within the framework of the programme, targeting them project specifically at youth and wider cultural public. Through programmes of Ministry of Culture "The language and culture of South Estonia" and "Classics of the Estonian literature", there were funded respectively 3 and 16 projects. It was due to support of the programme "Classics of the Estonian literature", that the representative omnibus volume of Järvamaa traditional culture "Arad veed ja salateed" (Timid waters and secret paths) and the facsimile print from the unique school book of 1841 "Lugemisse Ramat laste kolitamisse tarwis" (Reader for educating the children) were released, the latter starting the series of publications of the Archival Library "From the Repository of Archival Library". The projects funded from programmes of the cognate people enabled the Department of Folklore to continue work in compiling the Komi folklore textbook, and work in the area of folklore studies of lesser kin peoples (Vepsian, Votian, Mari and so on).

Among the foreign projects, the most outstanding is the compilation, preparative work, editing of the international bibliographic volume "Internationale Volkskundliche Bibliographie = International Folklore Bibliography = Bibliographie Internationale d'Ethnologie". This internationally influential volume of long tradition of issue was completed in co-operation with Bremen University. It will come out in 2005 in Germany, by Rudolf Habelt GmbH Publishers. There is a co-operation project with folklore archives of Finnish Literature Society, in preparation of digital corpus of Balto-Finnic folk poems.

It is with intensive research work that the drive characteristic for the Literary Museum, linked up with interdisciplinarity in 2004, giving birth to conviction that the traditional culture and literature must be analysed in a context with the change of the society and social life. Co-operation with semiotics, art critics, linguists, cultural anthropologists, ethnologists, historians and economics was variegated and productive.

The Centre of Cultural History and Folkloristics in Estonia, attached to the Estonian Literary Museum acted in furtherance of co-operation with other Estonian research institutions and co-operation on international level. Provi-

ding to scientists an opportunity to participate in scientific forums of their speciality all over the world, the said centre of excellence, bringing together scientists in the humanities was the engine and organiser of several international conferences in 2004. One of the most successful conferences held was organised by Centre of Cultural History and Folkloristics in Estonia of Literary Museum in October 2004, where under the title “P-generation in tundra”, the best informed experts in their domain coming from the USA, Federal Republic of Germany, Great Britain and Russian Federation and holding positions in various higher schools, dissected the issues of identity of the generation having been born in tundra, living there now and having left tundra.

Other conferences of 2004 too raised the questions in modern aspect and had the international implication – “Adapting texts” in May, “Polytonality in music of Finno-Ugric peoples” held jointly with Estonian Academy of Music, and “Place and location” held jointly with Estonian Academy of Arts and Department of Semiotics of University of Tartu.

#### TRADITIONS AND CO-OPERATION

Archives of the Literary Museum are sort of a solid foundation due to their richness and uniqueness, however sometimes also the antithesis to attempts of the modern research to inordinately widen its scope.

When setting the goals, putting in place the tasks and vying for project moneys we must now and again think of the importance of collections accommodated in the Museum, and how indispensable they are. The collections containing the older printed matter in Estonian, the Estonian folklore and the source texts of the whole Estonian literary culture are priceless and cannot be superseded by anything. They call for preservation and conservation, more urgently than ever before, because without them the history of culture of the people would be mutilated and biased, or even non-existent.

The year of 2004 brought some monetary alleviation with respect to collections and injected in us deep belief that the seemingly hopeless situation with preservation and development of collections would find a positive solution. Namely the national programme “The humanities and natural sciences collections” earmarked, after long years, the subvention to maintain the collections of both Estonian Folklore Archives and Estonian Cultural History Archives. The main salary money of the Archival Library too was obtained through the projects funded within the framework of that specific programme.

The collections of three historical archives of Literary Museum are made available, without charge to all researchers, because by and large in evidence is the material collected by the very people during the centuries and entrusted for preservation in archives of the Literary Museum.

Lately there has been witnessed a surge of interest in people towards their culture and history of culture. The number of visitors to archives of the Literary Museum has skyrocketed. On the one hand, this is fine; on the other hand, the host of visitors presents a challenge to us, creating novel problems and needs. A large part of source materials (e.g. manuscripts of M. J. Eisen, calendars in Estonian dating from the 17th C., the whole press in Estonian up to 1944 etc.) are in single copy, and due to poor quality of paper (mainly in magazines and newspapers!) also in a peril of total loss. Therefore they should not be any longer let to researchers. What is the solution? Hiding and keeping the source materials in depot and withholding permit to see them cannot be the solution. The apparently reasonable, fair and valid solution would be to make microfilms from all manuscripts, books, newspapers which are crumbling, as a back-up copy to the forthcoming generations, and digital copies for use by today's students of science. The volume of work is enormous, but we have made a good start. Project DEA (Digital Estonian Newspapers), carried into life by Archival Library in co-operation with Estonian National Library, will convey over Internet to every interested person the older press in Estonian. Ideally, the newspapers should be accompanied by analytic bibliography of press, making the search for the necessary text convenient and simple. The local traditional culture became available over Internet in 2004, for Lääne-Virumaa by project RADAR, just like the Estonian folk calendar in information bank BERTA. And yet we are at the beginning of an immense work, because our goal is to have everything of essence in the traditional culture available and usable over Internet. This goal cannot be achieved speedily and simply, because the quantity of source material in archives is overwhelming and the resources, which we can use for digitalising, are of necessity restricted. Hence we must be careful about choices we make, what should be digitalised in the first priority. The wisely made choices are of help here, taking into account the state of source material and the needs of users, so will be the trust-based co-operation with all other institutions concerned with perpetuation of memory. Literary Museum is ready for such co-operation. Literary Museum participated in working out the "National strategy of digital preservation of Estonian cultural heritage" and it participates in the work of Council for Preservation of Cultural Values and also in the work of Council for Preservation of Digital Cultural Values, setting the goal that in the first place the cultural heritage in peril of loss, however indispensable in the interest of integrity of ethnic memory, should be digitalised.

#### MULTIPLICITY OF TASKS & NODUS OF CHOICES

The need to choose and to do wisely and correctly so, became tangible in Literary Museum in 2004 in every area of its activity. Shall we publish the collection of articles electronically or shall we issue it in hard copy? What source material must be commented on and made available in the first



priority, when it is known that study of history of culture has the use for both alternatives, right now and promptly? Who among the figures of Estonian culture should be dedicated the exhibition, if several such figures have anniversaries, in the same year?

The routine of the institution would be much easier, if we only did the research stipulated by statute. If we did not arrange 10–12 exhibitions in the year, if we did not receive school excursions nor organise the cultural events of educating content. But the Estonian culture would be much shallower then and we would look inept, also to ourselves. The science, especially the humanities, must help keep balance and order in this world, literally drowning in the upsurge of eclectic information.

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

Associated with the Estonian Academy of Sciences 28.01.2003

Founded 1988

Personnel 27, of whom researchers 16

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The research effort of the Institute in 2004 was successful – the researchers published a number of scientific publications, participated at numerous professional conferences both in Estonia and abroad, participated at self-education programmes, carried out several state-commissioned applied re-search projects and were actively involved in national science organisation events. Of particular note was the large-scale involvement of the Institute in the EU funded co-operation projects, significantly larger than theretofore.

The main outcome of the work of the Institute is publications. In 2004 the researchers of the Institute released 70 publications – monographs, collections of articles and separate articles both at home and abroad. Meriting special mention is the article in CC category by Aili Aareleid “О теории культурной травмы” in the journal *Socis – Социологические Исследования*, No. 10, 76-92, Eda Heinla’s article “Socio-economic profile of the family and creative thinking of Estonian adolescents” in the journal *Nordic Journal of Youth Research*, an article by Rein Vöörmann and Jelena Helemäe “Estonia’s entrepreneurs: liberal community or ethnic separateness?” in the journal *Sociological Studies (Социологические Исследования)*, 9(245): 30-40 and Raivo Vetik’s article “Democratic Politics or Implementation of Inevitabilities?: Book review” in the journal *East European Politics and Society*, vol. 19, pp.121-124, *Winter* 2005.

In 2004 the Institute fulfilled four grants of Estonian Science Foundation. Of especial importance, from the point of view of the Institute is that the changes in conditions of target funding notwithstanding, and the increase in the number of principal investigators needed to have the project opened, the Department of Social Stratification succeeded in obtaining new target financing for the next five-year cycle. Detracting from the perfection however was the failure of the Department of Government to do the same, due to scarcity of peer-reviewed international publications by principal investigators. The

Department pledged to meet the conditions of opening the target-financed topic next year.

In 2004, the three-year project of the 5th EU Framework Programme “Value systems and social-economic conditions of the citizens” (Raivo Vetik) came to a close. The project of the 5th EU Framework Programme on the topic “Political Participation of Youth”, performed by Marti Taru went on. In 2004, there started a new project of the 6th EU Framework Programme “Peace Processes in Community Conflicts” (Raivo Vetik and Klara Hallik). It is important to point out that the Institute obtained funding to the project of the 6th EU Framework Programme “Towards Life-long Learning Society in Europe: The Contribution of Educational System”, co-ordinated by the Institute (Ellu Saar), with involvement as co-operation partners by scientists from Ireland, England, Scotland, Belgium, Portugal, Norway, Austria, Slovenia, Czech Republic, Hungary, Bulgaria, Russia and Lithuania.

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

Invariably successful was the co-operation of the Institute with several ministries and state authorities of Republic of Estonia, e.g. Ministry of Social Affairs, Ministry of Internal Affairs, Office of the Population Minister, Office of Riigikogu and State Chancellery. Serving as an example is the large-scale project funded by Integration Foundation “Monitoring of Integration of Estonian Society 2004”, which the Institute carries out jointly with Department of Sociology of Tallinn Pedagogical University, Economics Department of Tallinn University of Technology and Open Estonia Institute.

## **ASSOCIATED SOCIETIES, UNIONS**

### **ESTONIAN NATURALISTS' SOCIETY**

Associated with the Estonian Academy of Sciences  
23.01.1998



Founded 1853

Membership: 804 active members (incl. 45 permanent),  
21 honorary members and 647 trustees

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Website: <http://www.loodus.ee/lus/>

President: Marek Sammul, + Tel: +372 527 6204, + 372 742 8619,  
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Scientific Secretary: Linda Kongo, Tel: + 372 734 1935, + 372 5590 7544,  
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Estonian Naturalists' Society is bringing together *ca* one and a half thousand natural scientists and amateur-naturalists. Sections of the Society are Estonian Malacological Society, Jakob von Uexküll Centre, Estonian Theriological Society, Estonian Mycological Society and sections of botany, entomology, forestry, geology, anthropology, theoretical biology, palaeontology, biology, the section of weather enthusiasts and the Commission of Lakes.

Reporting to the Society are special commissions: Commission on Observation Networks; Commission on Library; Commission on History of Natural Sciences; Commission on Natural Education and Commission on Estonian Plant Names. In addition, there are the following subordinated units attached to the Society: assembly of the honorary members of the Society, Estonian inter-societal ecological assembly, union of scientifically-minded environmentalists, and a working group on information technology. Under a co-operation agreement with the Estonian Forestry Society, the Naturalists' Society organised the activity of research centre of rodents, located in Elistvere Animal Park.

The main concern of the Society is the continuation of nature observations. The Society organised phenological observations and revived the ichthyophenological observations. It continually monitored the diversity of nature (hoofed animals, flying squirrels, bats, crayfish). Members of the Society participated in making the Red Book of Estonian habitats, as water experts and also in creating a guide for the collection and evaluation of invertebrates for nature enthusiasts. Furthermore, Estonian Naturalists' Society participated in inventory and composing species maps for Natura 2000.

The Society participated, for implementation of strategies of Forestry Development Programme “Protection of Ecosystems”, in the project “Synoptic list of species of vascular plants of forest-related semi-natural communities”. It updated the database of plant names in Estonian on the Internet. The forestry research and the study of history of natural sciences continued. The society participated in the commission’s work on the National Olympiad in biology. The annual instruction of nature-observation students was continued and training camps were organized. Crowning the 5th gathering of friends of lichens was the 7th issue of WWW journal “Friend of Lichen”. The Society participated in composition of lists of foreign species and protected mammals for the new law on Nature Protection. In the rodents research centre in Elistvere and laboratory at Luua, Andrei Miljutin continued replenishment of collections of rodents and traces of their activity.

President Marek Sammul headed the natural education and awareness working-group of the Estonian Nature Protection Development Programme, Vice-President Ivar Puura headed the joint natural education working-group of Ministry of Education and Research and Ministry of the Environment. The Naturalists Society has a standing joint project with Estonian Green Movement, with the aim to find out the needs for training of Estonian non-governmental organisations and organise these training events.

Organised were 8 general meetings (one of them as Baer’s Day) and *ca* 30 meetings of subunits. The following large events were held: XXVII Estonian Naturalists’ Day in Türi “Nature of Järvamaa”, XXX Theoretical Biology Spring School in Võrumaa, Kirikumägi “Equilibrium Theory”, bio-semiotics related international conference “Cassirer, Lotman, Uexküll: between biology and semiotics of culture”, Autumn School of Estonian Theriological Society in Matsalu, Penijõe “Current research methods of mammals” and XIV Ecology Day. The Society participated at Bioplatform forum “Life inside life”. Two mushroom camps were organised in Mahtra Popular School in Raplamaa. There were two joint mushroom expeditions arranged with Toronto Mushroom Society, in Saaremaa and at Viidu, and together with Finnish mycologists there was a mushroom trek in Hiiumaa. The Society passed the decision to join the European Mycological Association.

Members of the Society participated at celebration of World Day of Meteorology “Weather, climate and water in the age of information”. The Society participated in international Eurozoo project “List of Estonian *Mollusca*”. In Kabli, there was a national four-day molluscs training camp organised for the children.

The members of the section of anthropology participated in the international anthropology congress in Moscow. The Society commemorated the births of venerated scientists (Karl Ernst von Baer, Jakob von Uexküll, Julius von

Kennel, Alfons Dampf, Wilhelm Petersen, Juhan Vilbaste and Hans Remmi. In cooperation with the Centre of Physical Anthropology of the University of Tartu, the Society organized a day for the presentation of scientific reports, to commemorate Juhan Aul. In Hamburg, there was an international conference “Signs and the Design of Life – Uexküll Significance Today”, collaterally commemorating Jakob von Uexküll 140th anniversary and opening the Uexküll archive in Hamburg.

The following publications were released:

- Pages of history of science from Estonia, Vol. XIII. History of exact sciences in Estonia. Dedicated to Wilhelm Ostwald’s 150th anniversary (215 pp.)
- *Folia cryptogamica Estonica* no. 40 (80 pp)
- Papers of the XXVII Estonian Naturalists’ Congress “Nature of Järvamaa” (64 pp.)
- *Schola Biotheoretica*, XXIX – “Equilibrium theory” (160 pp.)
- Lepinfo no. 15 (jointly with Estonian Lepidopterological Society (66 pp.)
- Materials of autumn school 2003 in Hiiumaa – Estonian game no. 9 (95 pp.).

The library of the Society numbered, by the end of 2004, 159,394 units of printed matter. The titles were exchanged with 112 institutions and organisations from 24 countries.

## **ESTONIAN GEOGRAPHICAL SOCIETY**

Associated with the Estonian Academy of Sciences

27.01.1998

Founded 1955

Membership: 434 active members, 16 honorary members,  
4 foreign members

Address: Kohtu 6, 10130 Tallinn ESTONIA

E-mail: kotliegs@hotmail.ee

President: Jaan-Mati Punning, Tel: +372 662 1853, 525 1095

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



In the reporting year, the sections of climatology and hydrology, and section of landscape ecology as well, joined the section of physical geography. The section of economical geography was named as section of human geography. The section of school geography continues the work under former programmes. Members of Tartu Department distributed between the three sections mentioned above as per speciality. Belonging into the composition of

Society with the rights of a section is the section of young geographers, established in December 2003.

The work within the programme “European geoparks” continued, with the aim to lay down landscape reserves and geoparks; so did the work in the area of organisation of Estonian natural monuments (Hella Kink, Tiit Petersoo). The studies on the cartography related activity of A. J. von Krusenstern continued (Heino Mardiste). Research in history of geography is co-ordinated by Erki Tammiksaar.

The School Geography Section was engaged, jointly with Institute of Geography of University of Tartu and Ministry of Education and Research in solution of several scientific-methodological problems related to teaching geography. It takes care, besides compilation of subject curricula also of promotion of environmental education and continuous education of teachers, preparation for state gymnasium examination in geography and analysis of results of exams (Ulvi Urgard, Lea Koppel). The members of the Society tutored the extra-curricula geography related research of the school students. In April in Tartu there was a students’ conference “Life Environment 2004”. Traditionally, the Society participated in organisation of district rounds of Geographical Olympiad and its national round in Hiiumaa, Käina Gymnasium. Speaking to geography teachers of Harjumaa was Kristel Toom of Tartu Environmental Education Centre “Ecological footprint”, Ulvi Urgard “Oppor-tunities for visualising in natural sciences”. In co-operation with Union of Tea-chers of Biology and Geography, there was organised a hiking tour for study purposes to the Aegviidu nature-school and Põhja-Kõrvemaa nature-school of the Centre of Economy of State Forest, as well as to Ida-Virumaa, in the Porun primeval forest. In September, there was a joint environmental camp of Saue and Finnish Alppila friendship school, where the Estonian and Finnish nature and environmental conditions were compared and contrasted.

On 20 November, there was an Information Day presenting the EU environmental policy, organised by Estonian Division of Central and East Europe Regional Environmental Centre and Union of Teachers of Biology and Geography, in the framework whereof there was an outing to Ida-Virumaa. The Society visited Kukruse and Saka-Ontika-Toila landscape preserve. Geographers looked at Natura selection areas and visited Kohtla Environmental Awareness Support Centre. Within the framework of the event, RagnSells representative Anne Jõesaar spoke about organisation of recycling of refuse in Estonia. The event was supported by EU Information Centre, Open Estonia Foundation and Representation of European Commission in Estonia.

Estonian Geographical Society and Institute of Geography of University of Tartu organised, on 13 February, in the hall of University of Tartu Library the

conference dedicated to 250th anniversary of cartographer Ludwig August Mellin (6 papers). Opened in the Library of University of Tartu book museum, there was an exposition dedicated to L. A. Mellin (Heino Mardiste).

In September 2004, the Society commemorated, as co-moderated by Estonian Institute of Meteorology and Hydrology, Tallinn Botanical Gardens, Institute of Geography of University of Tartu and Estonian Geographical Society (chairman of organising committee Andres Tarand) the 200th anniversary of Carl Kalk, who played an important role in Estonian meteorology. For almost 51 years (1835–1885, until he died) he made weather observations in Paldiski, being at the same time correspondent of St. Petersburg Geophysical Chief Observatory. The results of observations were published in yearbooks of the Observatory. On 9 September, Carl Kalk's memorial stone was opened in the Paldiski church yard. While touring the Pakri peninsula, the participants of the event looked at the limestone bluff and visited the Leetse nature centre (Hella Kink). On 10 September, there was "International Symposium of Historical Climatology" (8 papers) (Jaak Jaagus) held in the historical museum of University of Tartu.

On 22 September, also held in the historical museum of University of Tartu, moderated by Institute of Geography, in co-operation with Estonian Geographical Society, was "Conference of History of Estonian Hydrology" (100 years from the birth of Karl Hommik and Tiit Eipre) (5 papers). Presented was the book "Karl Hommik – hydrologist and land reclamation scientist". At Tooma, near the Centre of Endla Nature Preserve, Karl Hommik's memorial stone was opened. Moderator was Arvo Järvet.

At the general meeting of the Society, Kalev Kukk delivered a paper "Ascension to Annapurna". On 27 November President of Club of Rome and member of the Society Hardo Aasmäe spoke on topic "Demographic explosion and oil crisis – is it demise of the human society?"

To present the Estonian geographical science abroad the Society has, starting from 1972 issued, for international geographical congresses held every 4 years the collections in English in the series "Estonia", which have been disseminated at congresses and which are evidently the scientific issues analysing the Estonian natural and human environment of the widest circulation and renown. In 2004, the 9th volume of the collection appeared from print. The scientific level of the collection is characterised by the fact that at the recent Congress of the International Geographical Union in Glasgow in August 2004 the President of the Union eulogised our issue in his final speech and brought it as an example of a high level of geographical studies in the EU new member states.

The Publishers were handed over the manuscript of the 34th volume of yearbook of Estonian Geographical Society.



The Society organised 6 club soirées, hearing the travelogues and news in geography. The traditional scientific excursion with over 90 participants to Estonian next-door-neighbours was held to Courland. On excursions outside Estonian the Society visited Gotland – Öland (35 participants) (guides Avo Miidel and Tõnis Kallejärvi) and to Finnish southern coast from Helsinki to border with Russia (24 participants) (guide Tiiu Saarist).

The Youth Club (President Hannes Tõnisson) has attacked the matters with great zeal. At the year beginning they familiarised themselves with Hiiumaa (Toomas Kokovkin). In order to gain experience, one arranged a meeting with the former head of youth section Hardo Aasmäe. From 15 July - 10 August the Club was on an expedition to Spitsbergen (Hannes Tõnisson, Mihkel Kangur, honorary member of the Society Vladimir Kotljakov). One got an idea of specificity of wildlife and plant life of the Arctic, the processes of development of glaciers and glacial surface forms, the results of excavation of coal and everyday life of the common man. The information material prepared as a result of the trip (photos, films etc.) can be used in schools as study aids.

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

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

Associated with the Estonian Academy of Sciences

27.01.1998

Founded 1939

Membership: 232 members

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Deputy Chairman: Elvi Sepp, Tel.: +372 693 5802

Scientific Secretary: Eva Maaring, Tel.: +372 644 0475



The Board of the Society includes 9 members, attached to the Board is the 10-strong Village Commission. There are some people having quitted the membership and there are arrivals. Nevertheless, the total is keeping on the same level as in the past reporting year. The organised groups of members of the Society are more numerous in Tallinn (71), Pärnumaa (46), Viljandimaa (26), Järvamaa (23) and Harjumaa (16 members). Elsewhere too, there are smaller but staunch groups. The activity of the Society embraces also the non-affiliated lovers of regional studies.

The methodical activity of the Society is marked by meetings with papers, archival days, and seminars. Some guidelines have been composed (chronics

instruction, recommendations to village researchers etc.). Society's general meeting in Tallinn (April, 23) discussed the co-operation between the museum and activists of regional studies (Tiia Schmitte). The problem of how to name the Estonian roads was the topic of paper by Tiit Sepp from Ministry of Interior, delivered at the same meeting. During the year, eight board meetings were held.

The Society visited the exhibition commemorating the 85th anniversary of starting the War for Independence. At the very beginning of the year, on 16 January there was a working seminar in National Archives, where those willing had an opportunity to work with documents, ordered well in advance. In spring, the board organised two more instructive museum visits: Estonian Occupations Museum in Tallinn (in April) and Estonian Freedom Fighting Museum in Harjumaa, at Lagedi (in May). This year's study trip was again, over several years, over two-day program. The study trip held in July (10-11 July) was carried out in Ida-Virumaa. In autumn (September, 20) the Society had a look at Film Archives in Tallinn.

The Society continued issuing the reference collection. The collection, the 4th in sequence, carried on the topics already tackled earlier. Besides, the collection of this year contains the detailed guide by Kalju Idivand leading one to archival materials. There was another book of methodical preponderance, which was enclosed between the covers. This was the "Primer of the Village Researcher" compiled in co-operation between the Board of Society and Village Commission, upon initiative of M-A. Jõesaar.

Co-operation with Estonian Youth Centre enabled the Society to carry out the joint expedition of young guides and researchers of native place "Virumaa 2004" (25-27 August) and also the research competition of school students. The competition was finalised on 15 October with a traditional conference, this time the 36th in sequence.

Society has a host of zealous members. The summaries of the works sent to the board on turn of the year reveal that in 2004 the members of Society have taken the floor or talked up in more at over 150 events, delivering papers or lectures, guided excursions (in 30 cases), organised exhibitions (nearly 10), have carried out the events presenting the native place (over 30), have instructed the fellow students of native place and schoolchildren having natural inclination to study their native place in many places all over Estonia. Many members are co-operating with museums or are themselves organisers of a museum of the native place (village). All of them are active protectors of monuments and natural objects.

The results of the students of native place seem to hold a fast grip on fancy of the public, as revealed by an impressive list of hard copy editions of considerable bulk and print run brought out by the publishers annually.

Judging by the incomplete data received by the Board, 2004 witnessed the arrival on readers' desks of over 160 articles, over 40 books, effectively supported by small time pieces of printed matter (the newspapers of the native place, the brochures for specific events considered memorable and other word cast in print). Members of Society acted in the set of performers of films (2 members), they have made their opinions heard nationwide on radio.

Follows the native-place concerned printed matter of 2004 (all in Estonian).

- Liivi Aarma, Rait Talvoja, Ülle Viitkar. Kuuda Seminar 150. Review and biographies (331 pp.).
- Koidula in America. Glimpse on history of Vaela and Saira village (74 pp. + CD).
- Articles and Records III. Composed by Helgi Vihma (291 pp.).
- Boris Kull. I am holding a stick and carrying a gown ... Composed and edited by Hans Salm. Valga (256 pp.).
- Information collection of the Society of Estonian Regional Studies 4. Composed by Elvi Sepp (34 pp.).
- Helmut Elstrok. Reflections from path of life (119 pp.).
- Vaike Hang. Alu village (143 pp.).
- Milvi Hirvlaane. Kanepi school over two centuries. Kanepi Gymnasium. (309 pp.).
- Häädemeeste Elu. (Esto 2004, Riga.) Composed by Sulev Kasvandik. 1-2004, 29 (60 pp.).
- Jakob Hurt and Otepää. Composed by Heino Mägi. Otepää (32 pp.).
- Ea Jansen. Glimpses in the wellsprings of Estonian nationalism. (511 pp.).
- Reinhold Joost. Viljandi parish. Viljandi (120 pp.).
- Aino-Monika Jõesaar. Until the war devastated it all ... Narva Estonian medium comprehensive gymnasiums 1919-1944. Ida-Virumaa (223 pp.).
- Monika-Aino Jõesaar. Primer of the Village Researcher. Paide (216 pp.).
- Jäneda Agricultural Secondary School 1918-2000, I. Composed by Georgi Särekanno. (252 pp.+ ill).
- Between two rivers. Our life over times, no. 3. Composed by Laine Järvemäe. Paikuse (72 pp.).
- Vello Kallandi. Metsla village. Settlements of Järva-Jaani parish. (97 pp.+ lisad).
- Karl Kello. Pharaoh of Norden. (87 pp.).
- Further off from home. Refugee stories of citizens of Pärnumaa. Composed by Sulev Kasvandik. History of Pärnumaa, 7. Pärnu (148 pp.).

- Lieutenant Colonel Jaan Lepp. Composed by Toivo Veenre and Ants Miidla (16 pp.).
- Helju Lehesmets. Abja manor. Abja, 2001-2004 (89 pp.).
- Forest Brothers in Summer War 1941. Estonian military opposition as described in documents of Schutzkorp (Home Defence). Composed by Tiit Noormets. National archives (592 pp.).
- Heino Mägi. Headmaster Juhan Jägel. Dedicated to 100th anniversary of Juhan Jägel. Otepää (28 pp.).
- Vahur Mägi. Unions of engineers in recreation of the state of Estonia and cultural process (143 pp.).
- Robert Nerman. Süda-Tatari woods habitat. The borough of illuminati and cognoscenti in Tallinn. (643 pp.).
- Nõmme School Stories. Nõmme Museum 2003-2004 (152 pp.).
- Lembit Odes. Dear old Paldiski. (117 pp.).
- Põlvamaa legends. Põlva, 2003 (115 pp.).
- Repository of legacy. Collection of native place researches by students of Pärnu town and country. Composed by Eve Alu, Ida Käsper, Anne Kärner, Virve Laube, Silvia Murulauk, Tiiu Sarv and Marja Tõnts (466 pp. + ill.).
- Hans Salm. Agent of five intelligence services. Estonian spies in WWII (440 pp.).
- Eino Tomberg. Rakke Lime Kiln in 20th C. Composed by Eino Tomberg and Imbi Tomberg. 2003 (30 pp.+ appendices).
- Torma Album IV (V-Day 2003). Edited by Rein Aro, Aksel Jõgi, Endel Laul and Jaan Viigi (208 pp.).
- Known named from the past of Vändra. Composed by Jannu Holsting. Vändra (148 pp.).
- Urvaste educational life 315. Composed by Airi Hallik-Konnula. Urvaste, 2003 (56 pp.).
- Student of regional studies of Velise and founder of Sillaotsa Homestead Museum Aleksei Parnabas. Articles. Composed by Jürgen Kusmin (84 pp.).
- Viru-Jaagupi over times. Composed by Alise Vaasma and Taavi Vaasma (225 pp.).
- Ninety years of educational life in Raeküla. Composed by Ella Põldsoo and Riita Tõniste (56 pp.).
- 36th national school students regional studies conference. (List of students works 2003/2004.) Composed by Ene Luka (28 pp.).
- Häädemeeste school. Composed by Tiiu Pukk. Pärnu (57 pp.).

## **ESTONIAN MOTHER TONGUE SOCIETY**

Associated with the Estonian Academy of Sciences

4.02.1998

Founded 1920

Membership: 335 active members, 9 honorary members

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Librarian: Helju Kaal, Tel: +372 644 9331



In 2004, the Estonian Mother Tongue Society organised two scientific conferences. On 27 June, the hall of the council of the University of Tartu hosted the XXXVII J. V. Veski Day “Moods in Estonian”. There were five papers delivered. The paper by Karl and Renate Pajusalu “Conditional Mood in everyday talk” analysed the civility code of Estonian. Mati Ereht and Helle Metslang specified, in their paper “Imperative in Estonian” the boundaries of paradigm of Estonian Imperative. Petar Kehayov considered in his paper “Oblique mood as seen from typological aspect”, what it is the Evidential System, with what formal devices it is marked in different languages and whether the categories –functional equivalents in different languages to Evidential are Moods. Pille Penjam analysed in her paper “Jussive in old literary language” the functions of the Concessive Mood in the 17th C. Estonian church literatures. Maria-Maren Sepper talked on topic “Jussive in modern literary language”.

On 27 October the Institute of the Estonian Language and Estonian Mother Tongue Society organised in Tallinn a conference commemorated to Mart Rimmel’s 60th birthday “Endspiel”; speaking were Joel Sang – “A couple of hypotheses in the matter of phenomenon of Rimmel”, Arvo Eek – “In retrospect to Mart Rimmel – a phonetician”, Ülle Viks – “Computation, linguistics and others”, Urve Lippus – “Mart Rimmel as catalyst: reflections of positivist musicology in Estonia”, Jaak Valge – “Cogitative (economical) man” and Member of Academy Jaan Ross – “Recollections of Rimmel as administrator”.

There were 9 meetings with papers, of which 3 in Tartu and 5 in Tallinn, with altogether 28 papers. Two meetings were dedicated to jubilarians: on 30 January the meeting with papers celebrated Helmi Neetar’s 70th birthday. On agenda were six papers from Estonia (Vilja Oja, Tiit-Rein Viitso), Finland (Tuomo Tuomio, Sirkka Saarinen, Matti Vilppula) and Latvia (Ojārs Bušs). On 4 May, Tõnu Karma’s 80th birthday was celebrated, with research papers presented by Tõnu Karma, Urmas Sutrop, Tiit-Rein Viitso and Eduard Väari.

In November there was a meeting with deliberations and papers on occasion of the 85th anniversary of long-served scientific secretary of Estonian Mother Tongue Society Heino Ahven, on agenda were two papers and interventions by his friends, colleagues and comrades. At the traditional students' conference, papers on the basis of the BA papers were delivered by Annika Kilgi and Elviira Kүүn from Tallinn Pedagogical University and Tiina Alekõrs and Ülle Mällmann University of Tartu. As co-moderated by Institute of the Estonian Language, the Estonian Mother Tongue Society presented at its meeting with papers Henn Saari's book "Language broadcast. Estonian Radio "Language Whiles" 1975–1999", with papers from Krista Kerge, Peeter Päll, Mart Nutt. There were two topical meetings: "Speech technique and norm of pronunciation", speaking Einar Kraut, Krista Kerge, Hille Pajupuu, Anna Verschik and Tõnu Tender, and "Word formation under a different angle", the paper from Krista Kerge, Silvi Vare and Reet Kasik.

Under co-moderation there were held 4 Language Days in Estonia and 4 foreign Language Days.

The main topic of Mulgi Language Day of Viljandi Country Gymnasium was dialect and identity, one talked about research of dialectal language and dialectal poetry. In Kohila Gymnasium one deliberated about the essence of scientific research and language care in the Institute of the Estonian Language. Delivering papers at the Wiedemann Prize Language Day were the nominee of national language prize Viivi Maanso and candidates Henn Käämbre and Hando Runnel. At joint Language Day of the Estonian Mother Tongue Society and Estonian Radio, the focus was on radio vernacular and its particularity.

Outside Estonia, in co-operation with Ministry of Education and Research and local Estonian Societies there were held Language Days in St. Petersburg, Oulu, Moscow and Hamburg. On foreign Language Days, it has become customary to present the Estonian politics and topical events of the linguistic life, in the total of 16 papers one talked also about language and name planning, hard cases of Estonian grammar, about the current situation with the literary language and research therein.

Pursuing its activity has been the Language Panel of the Estonian Mother Tongue Society, discussing the issues related to orthography of compound place names and in co-operation with Language Inspectorate, the opportunity refer to shortcomings in language use of printed, radio and TV press media. The last direction of activity falls in with the participation of Estonian Mother Tongue Society in organisation of the Kuku Radio linguistic broadcast "Keelekuku" (Scientific Secretary of Estonian Mother Tongue Society Maria-Maren Sepper as main moderator, member of Board of Estonian Mother

Tongue Society and Language Panel Peeter Päll as member of editorial board).

Members of Board of Mother Tongue Society Jüri Valge, Mati Erelt, Jüri Viikberg, Silvi Vare, Tiit-Rein Viitso continued their activity in Council of the Estonian Language. In 2004 the Government of the Republic approved “Strategy of Estonian Development 2004–2010”, where the Language Panel of the Estonian Mother Tongue Society has been named as one of the executors of the tasks entrusted to general language planning. Estonian Mother Tongue Society also supports the development of Estonian of those residing abroad.

Being completed is the layout of manuscript of collection of Võru dialectal texts “Kuiis vanal Võromaal eleti”, composed by Mari Must, Eevi Ross and Helju Kaal. Publishing of the book is supported by Ministry of Culture and Estonian Culture Capital.

Released in print in 2004 were:

- Juhan Peegel. Poetic synonyms of noun in Estonian runos. The second revised and harmonized print. [Proceedings of the Estonian Mother Tongue Society of the Estonian Academy of Sciences no. 15 (62).] Institute of the Estonian Language, Estonian Mother Tongue Society of the Estonian Academy of Sciences. Tallinn: Foundation of the Estonian Language, 2004, 412 pp.;
- Estonian Mother Tongue Society Year Book no. 49 (2003) (231 pp.);
- Linguistic journal Oma Keel no. 1 (95 pp.); no. 2 (79 p.).

In 2003 the Library of the Estonian Mother Tongue Society was replenished by 119 acquisitions, obtained by exchange, donation or purchase. By the end of the year the stock of Library totalled 5 633 inventoried books.

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

Associated with the Estonian Academy of Sciences

4.02.1998

Founded 1967

Membership: 77 active members, 7 honorary members

(of whom 4 outside Estonia), 9 corporate members

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E-mail: erki@zbi.ee

Chairman: Jaak Aaviksoo, Tel: +372 737 5500

Scientific Secretary: Karl Martinson (until 19. 04. 2004),

starting from 19. 04. 2004 Erki Tammiksaar Tel: +372 742 1514

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

It is also incorporated into the Union of the Baltic Centre of Science Philosophy and Science Methodology (Chairman Professor Rein Vihalemm), involving over 20 Estonian, Latvian and Lithuanian historians of science.

The year of 2004 was the year of radical changes for the Estonian Union of the History and Philosophy of Science. On 19 April, there was a meeting of trustees of the Union, which approved new Statute. Adoption of the new Statute was preceded by work with membership to find out the actual number of members of the Union (according to the data of the outgoing board, the Union had 1 110 active members). Under the new Statute, the Union used to have the three-tiered management structure (general meeting of branches, meeting of trustees, Board) will become a two-tiered body (general meeting, Board). The number of Board members was decreased upon the decision of the meeting of trustees from 15 to 5 and Jaak Aaviksoo (Chairman) and Ülo Kaevats were elected to the new Board. Of the outgoing Board, Karl Siilivask, Erki Tammiksaar and Rein Vihalemm will continue.

The Board of the Union gathered four times in 2004. The first tasks facing the Board were to accept business from the outgoing Board, to draw the budget of 2004, to review the existing employment contracts, to take position regarding further publication of non-periodical volumes of the Union, to start information exchange with domestic and foreign homologous bodies concerned with history-of-science problems, and to start preparations to transfer the Union from Tallinn to Tartu. The Board decided to continue, as best it could, to issue the non-periodical volumes of the Union "Pages of history of science in Estonia" and "History of science and nowadays", if a proper expedience arises (for instance, a history of science conference held by co-moderation of Union). Besides publication in Estonian, which used to be the priority of the former boards of the Union, the new Board of the Union deemed it very important to increase in Estonia the volume of publication of researches belonging to the area of professional history of science in key word history of science journals, so that the Estonian history of science issues would be wider heard in the world. Upon the initiative of the scientific secretary, the mail list of members of the Union was started, on which information will be disseminated about the activity of the Union and also about history-of-science meetings with papers of Tallinn and Tartu based scientific societies. The goal is to knit closer together different Estonian scientific societies through electronic information exchange.



Board of the Union considers it important to continue the issuance of “Biographical Lexicon of Estonian Scientists” initiated by the former boards. Biographical Lexicon of Estonian Scientists, vol. 2, was supposed to come out in the 4th quarter of 2004, but due to causes dependent on both Estonian Union of the History and Philosophy of Science and Estonian Encyclopaedia Publishers the editing could not be completed in 2004 and the publishing has been put back to early autumn 2005.

In connection with transfer of the Union to Tartu, the Board located suitable premises in Tartu, in the Foundation of Culture and Science Domus Dorpatensis. In order to issue Lexicon of Estonian Scientists vol. III and IV, the Union hired a project leader, notably Master Student of University of Tartu Terje Lõbu. The legal basis for issuance of the two last volumes of Biographical Lexicon of Estonian Scientists (project from 2005-2008) must be set in place by a new publishing agreement between the Union and Estonian Encyclopaedia Publishers, which was drafted at the end 2004.

Upon direct initiative of the Union, one more publication was released in past year:

“Pages of history of science in Estonia” XIII (containing ten articles), the bulk of the volume whereof is dedicated to physical chemist Wilhelm Ostwald, to his life and activity in Estonia.

## **ESTONIAN SCIENTIFIC SOCIETY IN SWEDEN**

Associated with Estonian Academy of Sciences

19.03.1999

Founded 1945

Membership: 138 active members and 6 honorary members

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South-Swedish Division: c/o I. Martinson, Blåmesvägen 40,  
24735 Södra Sandby, SWEDEN

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Chairman: Ivar Paljak, Tel/Fax: +46 8 646 5624, [paljak@swipnet.se](mailto:paljak@swipnet.se)

Secretary: Diana Krull, Tel: +46 8 162 852, [diana@ling.su.se](mailto:diana@ling.su.se)

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

Secretary: Indrek Martinson, Tel: +46 465 7308,  
[indrek.martinson@fysik.lu.se](mailto:indrek.martinson@fysik.lu.se)

Estonian Scientific Society in Sweden brings together the Estonian scientists residing in Sweden and constitutes a forum, where they can present their works. The Society organised in Stockholm its annual meeting, six meetings with papers, one scientific conference, and the ceremonial public meeting celebrating the anniversary of University of Tartu.

At the annual meeting on 2 February, the paper was delivered by M.Ph. Arvo Mägi: “Fr. R. Kreutzwald 200”. On the agenda at the meetings with papers was: iron in biological systems; transition of Estonian economy to market economy; particles in spoken Estonian; gene therapy; Estonian refugees in Gotland press in autumn 1944.

On 17 September, at the scientific conference organised jointly with Ü-Club the following papers were presented: Külliki Saar: “Neuronal processes and neuropeptides”; Peeter Maandi: “Land reforms and changes of landscape in the 20th C. Muhu and Rapla”; Kalle Kilk: “Genes and their regulation”; Heigo Kadakmaa: “Reforms of structure and top-politics after the example of Estonia”; Hiie Allik: “Sleep and disturbances of sleep”.

On 5 December, the 85th anniversary of University of Tartu was celebrated with a ceremonious public meeting. The scientific paper: “University of Tartu and its European future” was delivered by Rector of University Professor Jaak Aaviksoo. Musical glamour to the event was added by performance of Klarika Kuusk.

The annual meeting of the South-Swedish, Lund heard the paper, on 24 January by Professor Indrek Martinson “Cheating, rows and science”.

The symposium organised on 25 April “Young Estonian scientists in Lund” heard out the papers by: Evelin Urbel “Sustainability and its assessment”; Triin Reitalu “Causes of rich variety in species of plants”; Janno Tuulik “Flight measurements and their analysis”; Kristina Anderson “Stem cells – something new and fanciful”.

On 20 September the Society heard out the paper by Professor Jaak Peetre “New facts from life of Sven Dimberg”.

On 28 November, at the scientific gathering marking the 85th anniversary of University of Tartu Dr. of Phil. Leelo Keevallik delivered a paper “Ota, kule, tead, kuidas neid sõnu Estonians kasutatakse”. Concert pianist Carolina Kremenetski performed compositions by J.S. Bach and A. Pärt.

## **ESTONIAN LITERARY SOCIETY**

Associated with the Estonian Academy of Sciences  
since 23 January 2001

Established in 1907

Membership: 276 members (incl. 16 lifetime members,  
6 honorary members and 22 trustees)

Location: Vanemuise 19, 51014 Tartu, ESTONIA

Tallinn branch: Estonia 8, 15044 Tallinn, ESTONIA, [eks@kirjandus.ee](mailto:eks@kirjandus.ee)

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Chairman: Toomas Liivamägi, Tel: +372 515 3274, toomas.liivamagi@ut.ee  
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Tallinn representative: Kristel Kiigemägi, Tel: +372 5664 4243,  
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Estonian Literary Society has worked according to its constitutional purposes in 2004, promoting literature, science and art in academic as well as popular ways. 2004 was a successful year for the Society: NoorEKS, the youth section of the Society was initiated, cooperation with other cultural and educational institutions was diversified, the seminar series of the previous year were continued and new ones added. Exhibitions were held regularly in the gallery-café Krüpt of the Literary House of Tartu.

*Student's Theory Class* met once a week, joining undergraduates and postgraduates with a deeper interest in literary theory.

The seminar series *Childhood and literature* was continued jointly with Estonian Radio, the seminars being also the public recording sessions for the literary broadcast *Litter*. 7 seminars were held.

In the Tallinn branch, criticism seminars of the Society and the cultural weekly *Sirp* continued with the analysis of recent releases in poetry and fiction. The series *Book Art* also had another season of discussing book design. 7 seminars were held.

The Society and the Finnish Institute organized a colloquium *Feminine Vision* on science fiction by female authors, with lecturers from Finland as well as Estonia.

From 22 to 26 March, the Society and the Pedagogical University of Tallinn held a literary week called *SOTSIA 2004: Antisotsia*, including a colloquium on the possibilities of literature, music and poetry evenings, conversations on surrealism and graphic design, master classes of creative writing, folk workshops, seminars on ethnofuturism and Fenno-Ugric poetry, etc.

On the traditional annual survey meeting, Estonian poetry, prose, drama and historical publications of 2003 were summarized.

On 7 and 8 May, the literary festival *Prima Vista* was held in Tartu, with the Society and Tartu University Library as chief organizers. Other partners included the Central Library of Tartu, the Educational Department of Tartu City Government, Estonian Writers Union, and cultural representative offices of several foreign countries. The events took place all over the town, including the book fair *Utlib Market'04*, sale of books on linguistics and literary theory, conference on modern literature *Mosaic of Worlds*, meetings with writers, panel discussions, book presentations, events for children, various workshops, exhibitions etc. The full schedule can be seen at <http://kirjandusfestival.tartu.ee>.

On 13 May, Benjamin Zephaniah, one of the most famous British poets performed in the foyer of Tartu University language building under the aegis of *Prima Vista*. He also visited the Miina Härma Gymnasium and held a workshop there.

A literary Saturday involving live writing and conversation with the authors was held in Tallinn during the International Baltic Book Fair.

On 21 May, Vanemuise Culture Street Day took place in Tartu, organized by the Society, Tartu Artists Union, Estonian Literary Museum, Finnish Institute, etc. and including various exhibitions, films, workshops, concerts and performances. The full schedule can be seen at <http://vkt.tartu.ee>.

The 12th Nüpli Spring School *Quo vadis Estonian Literature?* was organized by the Society and the Estonian Literary Museum on 29 May, concentrating on the Estonian literature of the last five years in connection with the key words „national“ and „international“.

On 4 June, Liiva library on the isle of Muhu was visited on the purpose of introducing modern feminine poetry and meeting local poets.

On 9 November, the Society and the Estonian Writers Union celebrated the 100th anniversary of Heiti Talvik.

Three new seminar series were initiated: *Cryptology* which seeks to read settled literary works from new angles and analyses current poetry. *Writing Nature*, in association with the University of Tartu, and *From Diary to Cultural History*.

Publications in 2004:

- The Yearbook of Estonian Literary Society XXX (2003) (96 pp);
- Vihik quarterly, vols 6 (88 pp), 7 (96 pp), 8 (92 pp) and 9 (96 pp);
- Vow to Remain Faithful... The Government of the Republic of Estonia 1940–1992 (1720 pp);
- Writing Competition (7th to 12th Form). Almanac (67 pp).
- Jaan Roos. Through the Red Night IV (268 pp);
- Evi Puskar. Ad astra (320 pp);

## **ESTONIAN LEARNED SOCIETY**

Associated with Estonian Academy of Sciences  
23.01.2001

Founded 1838

Membership: 101 active members, 14 honorary members

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The Estonian Learned Society is a society for research in the humanities operating at the University of Tartu bringing together representatives of scientific subjects related to Estonia, with the aim to present the newest results of research in subjects related to Estonia and also to provide opportunities to speak up and get experience for the future scientists – M.A. and Ph.D. students.

In 2004, there were 16 meetings with papers, attracting 474 participants (195 members of the Society and 279 guests) and hearing the total of 19 papers. By topics, the papers were delivered in the following areas (in bracket number of papers): history (6), history of science (1), pedagogy (3), literary criticism (1), geography (1), ethnology (1), archaeology (2), history of law (1), journalism (1), literary criticism (1), Estica (1), Finno-Ugrian studies (1), cartography (1). The presentations at one meeting were attended by a total of 30 people (last year 38).

The smaller figures are due to the circumstance that there were no larger conferences of massive attendance organised. Only Dietrich Heinrich Jürgenson's 200th anniversary with papers was held of larger events, in co-operation with Historical Museum of University of Tartu.

Of papers, Mart Laar's "Legacy of pre-awakening period to awakening period" fetched the largest audience (50 people), Hain Rebas "Ten days which shattered the Estonian statehood, 1993" (48) and Karl Laantee "Apogee of Voice of America – President Ronald Reagan's rule" (43).

Finalised was the manuscript of volume "Fr. G. von Bunge 200" of "Proceedings of the Estonian Learned Society" (the work appears under a schedule in spring 2005) and the manuscript of "Yearbook of the Estonian Learned Society 2003", which passed, for the first time peer reviewing (appears in spring 2005).

Upon commission by Ministry of Education and Research, a three-volume compendium "History of Estonia 1700–2000" was being continued. Finalised and handed over to the "Ilmamaa" Publishers was the manuscript of the 1918–2000.

In the field archaeology, the excavations in the Viljandi Castle Park were carried on, in co-operation with the town of Viljandi.

In the Castle Ruins, the expedition of the Society elucidated the contour of the building discovered last year and studied the cultural layer from the 13th and 14th C.

In Musumägi, the remains of the besieging contraption mounted during the siege in August 1223 were studied, and the Viking Age and Late Iron Age settlement remains were excavated.

## ESTONIAN MUSICOLOGICAL SOCIETY

Associated with Estonian Academy of Sciences

21.06.2004

Founded 1992

Membership: 54 active members, 1 honorary member

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Estonian Musicological Society brings together people entertaining the interest to scholarly or scientific study of music, as in historical research, musical theory, or the physical nature of sound. It supports all areas of music in Estonia.

Every year the Estonian Musicological Society acts as a moderator of two meetings with papers. In spring they take place in Tartu, and in autumn in Tallinn. At the Tartu Day of Estonian Musicological Society, held on 3 April 2004 at University of Tartu Library, there were six papers delivered. In the autumn Leichter Day on 1 November in Tallinn, Richard Parncutt, Professor at the University of Graz, was the guest lecturer.

Estonian Musicological Society acts in close co-operation with Department of Musicology of Estonian Academy of Music; a large number of events are held jointly. For instance, on 19–20 November there was an international conference “Men's choral singing and musical life in the 20<sup>th</sup> century Europe” and on 25 September a seminar about cultural life in Estonia in 1940–1948. Collaterally with the Estonian Literary Museum, the Society participated at organisation of ethnomusicology conference “Finno-Ugrian vocal polyphony in the music culture context of Slav and Baltic peoples” on 15–16 October.

At the beginning of 2004, two members of the Society defended their doctoral theses on musicology: Kristel Pappel “Opera in Tallinn in the 19th century” and Kerri Kotta “Tonal structure of music by Dmitri Shostakovich”.

There is also a tradition to Estonian Musicological Society to organise history-of-culture tours at the beginning of every September. At the beginning of 2004, the members, led by Kaur Alttoa, went to P lva, Kanepi, Urvaste and N o.

The most important work of the Society in 2004 was compilation of a bulky handbook of musicology entitled “Reflections on music” (“M eldes muusikast”), supervised by Professor Jaan Ross. The book will appear at the beginning 2005.

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