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ESTONIAN
ACADEMY OF SCIENCES
YEAR BOOK

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FOREWORD

The regular Academy of Sciences YEAR BOOK has herewith been brought to your attention, summarising the accomplishments of 2015 and also making a fleeting mention of the eventual incompleteness.

Its content reveals, in the first place, unequivocally the efforts of the Academy to realise its obligation established by the Academy of Sciences Act to promote and represent research. We are assured that the Estonia's success story has heretofore been inextricably linked to, and will have a close impact on development of the Estonian science and the performance of our universities. Therefore the Academy has been much concerned with the problems of funding research, securing successful work of scientists and providing the opportunities for their development as creative individuals through implementation of the reform of science and universities. It all must act in enhancement and enrichment of Estonian spiritual life. Any reform in science must bolster up the whole research and technology pyramid as an integral entity, from its foundation to pinnacle, guarantee its preservation and advancement. The half-baked solutions, the measures incompatible with one another may bring about harm instead of benefit.

The YEAR BOOK also reflects the Academy efforts in pursuance of harmonious social-economical development of our state. One of the statutory tasks of the Academy – to counsel independently, basing on knowledge acquired and research done, the Parliament and the governmental agencies – is not always easily done. The knowledge-based and the science-based counsel is often not sought after, due to sheer ignorance, even more so, it is not always welcome and readily accepted. The coordinating role of the Academy in performance of monitoring of the development of Estonia has not realised either, until now. The structure established by the Academy, the Institute for Advanced Study has not truly geared up for that reason – only individual projects have been realised as yet. The Academy is ready to contribute much more to the development of Estonia in that respect. A positive example to the effect is the Conference on Strategic Mineral Resources which was held in common with universities, ministries and companies at Rakvere. Hopefully there will be even more cases of partnership and strategic approach on part of the Government and *Riigikogu* (Parliament).

Fortunately the Academy is not acting alone, when fulfilling its tasks. The YEAR BOOK shows how much the Academy does jointly with the universities. There has been excellent and close cooperation with many deputies in the Parliament, supporting the Academy as best they can, with both advice and tangible deeds. Picking up is cooperation with more alert and conscientious officials of the ministries. We are convinced that only with combined efforts it is possible to reap the benefits of highly sophisticated and unwieldy system of research, to promote the state and to further the culture.

Margus Lopp

CHRONICLE

January 16 – Academy Hall was the venue for the HEALTH R&D&I STRATEGY FORUM. Presentations and discussions approached the principles of the strategy that had been prepared jointly by the Academy Institute of Advanced Study task group and the Standing Committee on Medical Science and Health Strategy (ATSAK). Participants representing interests of different stakeholder groups considered key activities for execution of the strategic plan.

January 19 – Academy was visited by the Czech ambassador to Estonia H.E. Richard Kadlčák, who had a meeting with President Tarmo Soomere, Vice-President Mart Kalm and Member of the Board Jüri Engelbrecht.

January 20 – President Tarmo Soomere participated in a meeting of the European Marine Board (EMB) Executive Committee in Brussels.

January 22 – Seminar discussion was held by the Board of the Academy jointly with the Estonian Research Council (ETAg) on the premises of ETAg's office in Tartu that was also attended by representatives from the Ministry of Education and Research.

January 27 – Academy hosted the event INTENSE DAY ON COMPLEXITY IN MARINE SCIENCES co-organised by the Academy Committee on Marine Sciences.

January 28 – Board at its meeting approved the 2nd year report and 3rd year plan and budget presented by Research Professor Anu Realo, appointed the auditor for the Academy in 2015, determined the responsibilities of Board members, the Council members for the Academy Institute for Advanced Study and the Academy's Action Plan 2015.

January 28 – INAUGURAL CEREMONY OF ACADEMY PRESIDENT Tarmo Soomere was held at the Academy Hall.

February 16 – President Tarmo Soomere gave a talk at the *Riigikogu* (Parliament) as an invited guest of the Cultural Affairs Committee. He spoke about academies of sciences and letters, focusing on their role, mission and vision of the future.

February 17 – Board meeting was held at KUMU Art Museum. The Board appointed Member of the Academy Jaan Undusk Director of the Under and Tuglas Literature Centre for another term. The following names of deceased Members of the Academy were proposed to be applied for naming buildings in the Ülemiste City (Smart City) campus: Viktor Palm, Nikolai Alumäe, Erast Parmasto, Heinrich Laul, Leo Jürgenson, Ottomar Maddison and Agu Aarna. The mergers of scientific journals issued by the Estonian Academy Publishers entailed some further changes, therefore Editor-in-Chief Jaak Järv was tasked to commence restructuring the editorial board composition of the Proceedings of the Estonian Academy of Sciences.

February 17 – Board meeting at KUMU was accompanied by a seminar discussion under the title ART HISTORY IN ESTONIA.

February 20 – Meeting of the academic community with representatives of those political parties who had submitted their list of candidates for the 2015 *Riigikogu* Elections in all electoral districts. The meeting was organised by the Estonian Academy of Sciences to provide a forum for discussion and debate on various options for enhancement of Estonian competitiveness and feasible ideas for promoting research and culture in Estonia.

February 26 – Members of the Academy Tarmo Soomere and Leo Mõtus participated in a meeting of the thematic committee on economic affairs with regard to priority axes 4 and 5 under the OPERATIONAL PROGRAMME 2014-2020 FOR COHESION POLICY FUNDS held at the Ministry of Education and Research.

March 17 – Board at its meeting held at the University of Tartu *Physicum* building decided to begin the process for increasing the number and impact of Research Professor positions at the Academy Institute for Advanced Study. The composition of the Institute's Academic Advisory Board was determined. The Board determined the agenda for the Annual General Assembly on April 15, decided to elect four new Foreign Members in 2015, appended and approved the Action Plan of the Academy for 2015.

March 17 – Meeting of the Board was accompanied by a public seminar exploring applications of modern physics.

March 23 – Opening ceremony of a bas-relief wall plaque and the Ariste Lecture Hall at the University of Tartu *Philosophicum* building to mark the 110th anniversary of the birth of Paul Ariste (1905-1990), Estonian linguist renowned for his studies of the Finno-Ugric languages, who was elected Member of the Academy in 1954.

March 25 – Joint seminar organised by the Estonian Academy of Sciences and Tallinn University of Technology was dedicated to research funding (current status and proposals for reforms) along with the concept of research career path and possibilities of its application.

April 6 – President Tarmo Soomere gave a presentation HARNESING ESTONIAN SCIENCE FOR THE BENEFIT OF OUR STATE AND SOCIETY at a meeting of the Estonian Free Party (*Vabaerakond*) Fraction in the *Riigikogu*.

April 10 – Professor Andre Nel from UCLA (University of California, Los Angeles) Department of Medicine, also Director of the Center for Environmental Implications of Nanotechnology, visited the Academy and had a meeting with President Tarmo Soomere.

April 15 – Annual General Meeting was primarily dedicated to summing up the results of the past year for the Academy in general and all the divisions severally. Budget implementation in 2014 was considered and the 2015 budget

approved. The performance and results of the new Board during its first four months were critically examined in view of the transforming role and position of the Academy in Estonian society, while the society itself is undergoing vital changes.

April 20-21 – President Tarmo Soomere and Secretary-General Margus Lopp along with Members of the Board Jüri Engelbrecht and Urmas Varblane participated in the 14th Baltic Conference on Intellectual Cooperation ACADEMIES OF SCIENCES FOR RESEARCH AND INNOVATION: PAST AND FUTURE organised by the Latvian Academy of Sciences.

April 23-24 – President Tarmo Soomere and Member of the Board Jüri Engelbrecht participated in the General Assembly Meeting of the European Federation of National Academies of Sciences and Humanities “All European Academies” (ALLEA) and the preceding scientific symposium SCIENCE AND RESEARCH IN EUROPE – PAST, PRESENT AND FUTURE: 15 YEARS OF LISBON AGENDA in Lisboa, Portugal.

April 27 – President Tarmo Soomere took part in the work of the European Academies’ Science Advisory Council (EASAC) Environment Steering Panel in Rome.

April 28-30 – Chair of the Academy Committee on Marine Sciences, President Tarmo Soomere participated in a meeting of the EMB Executive Committee and spring plenary meeting in Gent, Belgium. T.Soomere was re-elected to the next two-year term as vice-Chair and Member of the EMB Executive Committee.

April 29-30 – Member of the Board Jüri Engelbrecht attended the international conference FRAMEWORK FOR A NEW PARADIGM OF HUMAN DEVELOPMENT organised by the World Academy of Art and Science (WAAS) in Baku, Azerbaijan.

May 6 – At its meeting in Pärnu, the Board decided to announce the 2015 Student Research Paper Contest of the Academy. Members of the Board expressed their gratitude and appreciation to the long-time Chair of the contest jury Georg Liidja and appointed Jaan Aarik as the new Chair. Association agreement between the Art Museum of Estonia and the Estonian Academy of Sciences was approved. Member of the Board Jüri Engelbrecht briefed the Board about the conferences in Lisboa (ALLEA scientific symposium 15 YEARS OF LISBON AGENDA and General Assembly Meeting) and Baku (3rd Forum on Global Issues accompanied by WAAS conference).

May 6 – Academy’s 17TH SCIENCE DAY was held in Pärnu County.

May 11 – Members of the *Riigikogu*’s Cultural Affairs Committee paid a visit to the Academy. President Tarmo Soomere gave an overview about the activities of the Academy. The following discussion focused on finding options to incorporate frontline science and the Academy’s expertise into effectual measures needed to boost competitiveness in Estonia.

May 12 – Members of the Estonian Learned Society in Sweden visited the Academy to gain first-hand knowledge of its activities. They also provided an overview of the plans and doings of their Society.

May 15 – Academy held the first SCIENCE MORNING in its novel series of outreach events – a talk over a cup of coffee intended to find multiple answers to the question posed in the title WHAT ARE THE MEDIA EXPECTING FROM THE ACADEMY? attended by journalists from Estonian Public Broadcasting (ERR) as well as representatives of several ministries, Estonian Research Council, Centre of Research and Innovation Communication of Tallinn University, Estonian Chamber of Culture, etc.

May 18 – Member of the Board Jüri Engelbrecht gave a presentation ON MATHEMATICAL MODELLING OF DYNAMICAL PROCESSES IN BIOLOGICAL SYSTEMS at the Academy of Sciences of Turin, Italy.

May 21-22 – President T.Soomere attended the 5th International Leopoldina Symposium THE HUMAN RIGHT TO SCIENCE: NEW DIRECTIONS FOR HUMAN RIGHTS IN SCIENCE in Bern, Switzerland at the invitation of the Swiss Academies of Arts and Sciences and the German National Academy of Sciences Leopoldina.

May 24-28 – Member of the Academy Jaan Undusk represented the Academy at the 88th General Assembly of the *Union Académique Internationale* (UAI) in Brussels, Belgium.

June 8 – Academy was visited by a delegation of the *Riigikogu*'s Economic Affairs Committee headed by Toomas Kivimägi, Chairman of the Committee. President Tarmo Soomere had a meeting with the delegation.

June 9 – Board at its meeting considered the review about the first half year performance results of the Academy presented by President Tarmo Soomere. Records Manager Ebe Pilt briefed on implementation of the Academy's web based communication tools and Secretary General Margus Lopp informed about possible academic involvement of young scientists. The Board decided to prepare the conception and structure for the establishment of a representative office that would bring together young scientists under the aegis of the Estonian Academy of Sciences and formed a project team headed by Member of the Academy Peeter Saari tasked to complete the preliminary phase. Amendments to the 2nd half-year work schedule of the Academy were approved. A special panel chaired by Member of the Academy Jüri Engelbrecht was established to conceptualise and conduct events in the framework of festivities marking the anniversaries REPUBLIC OF ESTONIA 100 and ESTONIAN ACADEMY OF SCIENCES 80.

June 9 – Presentation of the book *EESTI VABARIIGI PREEMIAD 2015* (NATIONAL AWARDS OF THE REPUBLIC OF ESTONIA 2015) at the Academy House.

June 9 – Association agreement between the Estonian Academy of Sciences and the Art Museum of Estonia was signed.

June 11-14 – President Tarmo Soomere participated in the conference SCIENCE, TECHNOLOGY AND INNOVATIVE TECHNOLOGIES IN THE PROSPEROUS EPOCH OF THE POWERFUL STATE in Aşgabat, Turkmenistan. T.Soomere gave a complimentary speech at the Opening Ceremony and a presentation THE USE OF SURFACE CURRENTS FOR THE PREVENTIVE PROTECTION OF MARINE ENVIRONMENT in the programme of Section 1.

June 14-17 – President Tarmo Soomere paid an official visit to the Bulgarian Academy of Sciences. The programme of the visit included discussions on collaboration between academies of sciences. Presidents signed a new Annex to the cooperation agreement, specifying the forms and conditions of cooperation for the next period (2015-2017).

June 16 – Academy arranged a SCIENCE AFTERNOON dedicated to THE FIRST WORLD WAR OR THE ESTONIAN WAR OF INDEPENDENCE: WHICH OF THEM BROUGHT INDEPENDENCE TO US? The topic aroused lively exchange of views, comprehensive comments were given by Member of the Academy Tõnu Tannberg and Associate Professor Ago Pajur from the University of Tartu. Discussions were moderated by Vice-President Mart Kalm and attended by journalists of the Estonian Public Broadcasting as well as representatives of the Academy Board, Estonian Research Council, several ministries and Estonian Chamber of Culture.

July 8 – Academy was visited by Prof. Hideo Akutsu, Director and Yuriko Kawakubo, Vice-Director from the Japan Society for the Promotion of Science Stockholm Office. The guests were hosted by President Tarmo Soomere and Secretary General Margus Lopp. The sides briefed each other on their activities and existing bilateral links, seeking to find common interests for cooperation.

July 21 – Academy was visited by Reetta Kettunen, Secretary General of the Committee for Public Information at the Finnish Ministry of Education and Culture, who spoke about Finnish experience from science communication practices relative to politicians and journalists. Tarmo Soomere gave the guest a glimpse into the past and future activities of the Academy.

August 6 – Academy was visited by a 9-member delegation from the Serbian Ministry of Education, Science and Technological Development that was composed of social scientists, science authorities and science administrators. The main purpose of their visit was to learn about the principles and practical implementation of research funding in Estonia. Member of the Board Jüri Engelbrecht had a meeting with members of the delegation at the Academy, where he analysed the positive and negative aspects of Estonian experience. He underlined the critical importance of analysis, target-setting, knowledge and relevant criteria. During their visit the delegation met with representatives of various institutions in Tallinn and Tartu.

August 15 – Secretary General Margus Lopp participated in a SCIENCE AREA DEBATE titled WHY DO WE NEED DEMOCRACY, WHEN WE HAVE SCIENCE? at the 3rd *ARVAMUSFESTIVAL* (FESTIVAL OF OPINION CULTURE) in Paide.

August 23 – Collaboration conference SCIENCE AS ESTONIA'S ENGINE OF DEVELOPMENT. SHOULD WE CONTINUE PONDERING OR FINISH OFF?, jointly organised by the Estonian Research Council, Association Universities Estonia and Estonian Academy of Sciences, was held at the Conference Hall of the *Riigikogu*.

September 25 – Academy House was the venue for the RESEARCHERS' NIGHT GALA EVENING. The programme included the final of the THREE MINUTE LECTURE COMPETITION and announcement of winners.

September 27 – Academy was visited by a four-member delegation of the Chinese Academy of Engineering (CAE) headed by Yunhe Pan, former Vice-President of CAE. President Tarmo Soomere acquainted the guests with major developments in the Academy and at a broader level with the present status of research in Estonia. Members of the Academy Ülo Jaaksoo and Raimund-Johannes Ubar talked about significant processes and pursuits in their specialties.

September 29 – Meeting of the Board was held on the premises of the Estonian University of Life Sciences in Tartu. The Board decided to submit the candidacy of Jonathan (John) R.Ellis, Esko Ukkonen, Ülo Langel and Cornelius Theodor Hasselblatt to the General Assembly for election as Foreign Members. The new composition of the Estonian National Committee for Mechanics (Chair Andrus Salupere) was approved. The upcoming competition for Research Professor positions was considered.

October 5 – Academy was visited by the Slovakian ambassador to Estonia H.E. Tibor Králik, who discussed with President Tarmo Soomere the objectives, agenda and format of the intended meeting for representatives of research institutions to be organised in the programme of the state visit by the President of the Slovak Republic.

October 7 – Follow-up event of the SCIENCE DAY in Võru County was held under the title LANGUAGE OF PLANTS at the Võru Gymnasium.

October 7-9 – Governing body of the European Research Council, the ERC Scientific Council, held its autumn plenary session in Tallinn at the invitation of the Academy.

October 13-15 – President Tarmo Soomere participated in the spring plenary meeting of the European Marine Board and a meeting of EMB Executive Committee in Split, Croatia.

October 20 – Meeting between the academic delegation participating in the state visit by the President of the Slovak Republic and representatives of Estonian research institutions at the Academy House.

October 30 – SCIENCE MORNING at the Academy was approaching the question, WHY WAS THE SUMMER LIKE IT ACTUALLY WAS? Opening remarks were given by Foreign Member of the Academy Steven R. Bishop. He pointed out the importance of having good working relationships between the Academy and the media to achieve a balance between independence and informedness in the sense of highest reliability and competency. A concise introduction to the focal topic from President of the Academy Tarmo Soomere was followed by discussion. Expert opinions were provided by Professor Sirje Keevallik and Associate Professor Ain Kallis.

November 2 – University of Tartu Library was the venue for a meeting and discussion aimed at Members of the Academy as well as all associated scholarly organisations of the Academy that are involved in the humanities.

November 3 – Enlarged meeting of the Academy Board was held in Tartu jointly with the management of the Estonian Research Council. Member of the Board Jüri Engelbrecht briefed on the work of the special panel tasked to prepare for anniversary celebrations (REPUBLIC OF ESTONIA 100 and ESTONIAN ACADEMY OF SCIENCES 80). President Tarmo Soomere informed about the association request from the University of Tartu Library. The Board announced the electoral competition for Academy Research Professor positions, decided to confer the Karl Ernst von Baer Memorial Medal on Member of the Academy Richard Villems, approved the agenda for the General Assembly meeting on December 2. The Board considered President Tarmo Soomere's explanations concerning fulfilment of the Academy's statutory consulting function and procurement of necessary analytic proficiency and decided to join efforts with the Estonian Research Council and other institutions (Ministry of Education and Research) to assess the resources, funding, capability and performance (productivity) of research in Estonia. The Board determined to establish the Estonian Academy of Young Scientists under the aegis of the Estonian Academy of Sciences and appointed Member of the Academy Peeter Saari as the task group leader. The 3rd year work reports of Research Professors Rein Ahas, Anu Realo and Tõnis Timmusk were approved.

November 3 – ESTONIAN ACADEMY OF SCIENCES RESEARCH PROFESSORS' CONFERENCE was held at the Dorpat Conference Centre in Tartu.

November 4-7 – At the initiative of the Hungarian Academy of Sciences, the 7TH WORLD SCIENCE FORUM (WSF) under the theme ENABLING POWER OF SCIENCE was held jointly by several international organisations in Budapest, Hungary. The Estonian Academy of Sciences was represented at the forum by President Tarmo Soomere, Vice-President Mart Kalm and Member of the Academy Ene Ergma (the latter as an invited speaker). An interactive seminar organised by the Inter-Academy Partnership (IAP) in the WSF programme was targeted at talented young scientists. The Estonian Academy of Sciences nominated Heli

Lukner, Senior Research Fellow at the University of Tartu to participate in that event.

November 9 – Secretary General Margus Lopp gave an overview about the Academy to a delegation of Ukrainian research administration who had arrived in Estonia at the invitation of the Estonian Research Council and visited several institutions.

November 18 – For the second time, a SCIENCE DAY aimed at high school students in Võru County was organised by the Academy jointly with the Department of Education and Social Services of the Võru County Government.

November 19 – Secretary General Margus Lopp participated in a meeting of the European Academies' Science Advisory Council (EASAC) in Smolenice, Slovakia.

November 19-20 – President Tarmo Soomere participated in an annual meeting organised by the Group of the European Members at the International Council for Science (ICSU) in Paris.

November 25-28 – At the invitation of the National Academy of Sciences of Belarus (NASB), President Tarmo Soomere paid a visit to several research institutions of the academy. Together with President V.Gusakov of NASB they discussed options for promoting closer collaboration in research.

December 2 – Meeting of the General Assembly started with ceremonial awarding of the Karl Ernst von Baer Memorial Medal to Member of the Academy Richard Villems. Presentations were given by Chancellor of Justice Ülle Madise AUTHORITY IN REGARD TO SCIENCE AND LAW and Auditor General Alar Karis DO ESTONIAN PUBLIC AUTHORITIES NEED THE ACADEMY OF SCIENCES? President Tarmo Soomere briefed on the first year activities of the Board. Four new Foreign Members, namely Jonathan R.Ellis, Cornelius Theodor Hasselblatt, Ülo Langel and Esko Juhani Ukkonen were elected.

December 4 – SCIENCE AFTERNOON at the Academy assembled audience for THINKING OF MINERAL RESOURCES (INCL. MATHEMATICALLY). An introduction to the topic was made by Professor Volli Kalm (Rector, University of Tartu). Among the participants in the following debate were: Dr. Erik Puura (Vice-Rector for Development, UT), Professor Alvar Soesoo (Head of the Chair of Physical Geology, Tallinn University of Technology), Professor Emeritus Leo Võhandu (Senior Research Scientist, Department of Informatics, TUT). The debate was moderated by Secretary General Margus Lopp.

December 7 – Academy together with its associated organisations involved in natural science and engineering held a meeting on the premises of the Estonian Naturalists' Society in Tartu.

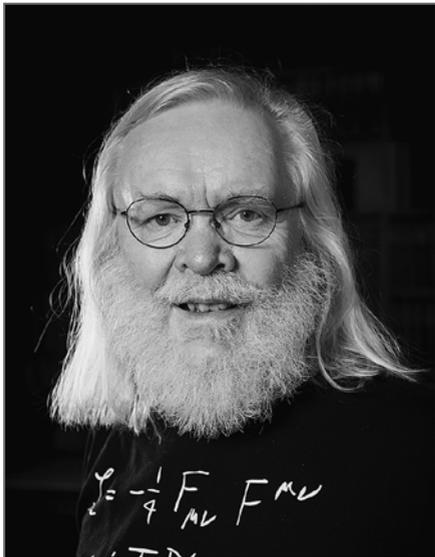
December 15 – Board at its meeting studied information about participation quotes and results of the Academy's 2015 Student Research Paper Contest,

presented by Member of the Academy Jaan Aarik. Professor Gerson Stefan Klumpp (Department of Finno-Ugric Studies, University of Tartu) was appointed the new Editor-in-Chief of the journal *Linguistica Uralica*. The focal topics discussed at the meeting were: specifying procedures for granting scholarships from the Estonian Academy of Sciences sub-fund with the Estonian National Culture Foundation, applications registered for the Research Professor competition, Academy membership vacancies, immediate future of the Estonian popular science magazine *Horisont* (Horizon), the so-called Okk report (a report on the outlooks of the Estonian network of universities, research institutions and institutions of professional higher education, drawn up by Gunnar Okk) and subsequent analysis from the Ministry of Education and Research targeting possible implementation of the report's recommendations.

December 17 – President Tarmo Soomere and Member of the Academy Karl Pajusalu among other newly elected Foreign Members of the Latvian Academy of Sciences were awarded their Diplomas at a conferral ceremony in Riga, Latvia.

MEMBERSHIP OF THE ACADEMY

Four new Foreign Members were elected by the General Assembly of the Academy on December 2, 2015:



Jonathan (John) R. Ellis
(in theoretical physics)



Esko Ukkonen
(in computer science)



Ülo Langel
(in neurochemistry)



Cornelius Theodor Hasselblatt
(in literature and culture)

The membership of the Estonian Academy of Sciences was composed of 78 Members and 21 Foreign Members as of March 2016. Their distribution among four divisions was the following:

DIVISION OF ASTRONOMY AND PHYSICS

(18 Members, 6 Foreign Members)

Members: Jaan Aarik, Jaak Aaviksoo (Head of Division), Jaan Einasto, Ene Ergma, Vladimir Hižnjakov, Arvi Freiberg, Georg Liidja, Ülo Lumiste, Tšeslav Luštšik, Ergo Nõmmiste, Eve Oja, Martti Raidal, Enn Saar, Peeter Saari, Mart Saarma, Arved-Ervin Sapar, Gennadi Vainikko, Richard Villems.

Foreign Members: Jonathan (John) R.Ellis, Richard R.Ernst, Charles Gabriel Kurland, Jaan Laane, Jaak Peetre, Alar Toomre.

DIVISION OF INFORMATICS AND ENGINEERING

(19 Members, 5 Foreign Members)

Members: Olav Aarna, Hillar Aben, Jüri Engelbrecht, Ülo Jaaksoo, Lembit Krumm, Valdek Kulbach, Jakob Kübarsepp (Head of Division), Rein Küttner, Ülo Lepik, Enn Lust, Enn Mellikov, Leo Mõtus, Arvo Ots, Tarmo Soomere, Enn Tõugu, Raimund-Johannes Ubar, Tarmo Uustalu, Jaak Vilo, Andres Öpik.

Foreign Members: Steven R.Bishop, Antero Jahkola, Gérard A.Maugin, Michael Godfrey Rodd, Esko Ukkonen.

DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

(23 Members, 6 Foreign Members)

Members: Toomas Asser (Head of Division), Jaak Järv, Ain-Elmar Kaasik, Dimitri Kaljo, Mati Karelson, Ilmar Koppel, Urmas Kõljalg, Hans Küüts, Agu Laisk, Ülo Lille, Margus Lopp, Udo Margna, Jüri Martin, Andres Metspalu, Ülo Niinemets, Anto Raukas, Valdur Saks, Martin Zobel, Hans-Voldemar Trass, Raivo Uibo, Mart Ustav, Eero Vasar, Mihkel Veiderma.

Foreign Members: Carl-Olof Jacobson, Ülo Langel, Pekka T.Männistö, Matti Saarnisto, Helmut Schwarz, Jānis Stradiņš.

DIVISION OF HUMANITIES AND SOCIAL SCIENCES

(18 Members, 4 Foreign Members)

Members: Jüri Allik, Mihhail Bronštejn, Mart Kalm, Arvo Krikmann, Arno Kõörna, Valter Lang, Lauri Mälksoo, Karl Pajusalu, Arvo Pärt, Jaan Ross, Hando Runnel, Huno Rätsep, Karl Siilivask, Tõnu-Andrus Tannberg, Peeter Tulviste, Jaan Undusk, Urmas Varblane (Head of Division), Haldur Õim.

Foreign Members: Juri Berezkin, Cornelius Theodor Hasselblatt, Päiviö Tommila, Endel Tulving.

During 2015 the majority of Members of the Estonian Academy of Sciences proceeded with their research and academic activities as leading experts in their fields of study.

Ene Ergma and Jaak Aaviksoo continued work as Members of the *Riigikogu* (up to March 23 and September 1, respectively).

Many Members of the Academy were acting as experts and advisers complementary to their principal occupation. The following Members of the Academy sat on expert panels and councils of national significance:

- President's Academic Advisory Board – Peeter Saari, Richard Villems;
- Board of President of the Republic's Cultural Foundation – Jaan Undusk;
- Government of the Republic Research and Development Council – Jaak Aaviksoo (since November 19), Mart Saarma, Richard Villems (up to November 18), Tarmo Soomere (since November 19);
- Government of the Republic Sustainable Development Committee – Margus Lopp;
- National Science Prize Committee – Tarmo Soomere (Chairman), Jaak Järv, Valter Lang, Lauri Mälksoo, Ergo Nõmmiste, Martin Zobel, Enn Tõugu, Jaan Undusk, Urmas Varblane, Andres Öpik;
- Board of Estonian Research Council – Mart Ustav;
- Estonian Research Council's Evaluation Committee – Lauri Mälksoo, Ergo Nõmmiste, Eero Vasar, Richard Villems, Jaak Vilo;
- Estonian Science Communication Award Appraisal Panel at Estonian Research Council – Enn Tõugu (Chair);
- Supervisory Board of Eesti Pank – Urmas Varblane;
- Fiscal Council – Urmas Varblane.

Several others were involved in the work of expert panels reporting to a particular ministry.

Ministry of Education and Research:

- Research Policy Advisory Committee – Leo Mõtus, Ülo Niinemets and Urmas Varblane;
- Steering Council for Research and Innovation Policy Monitoring Programme – Jüri Engelbrecht and Urmas Varblane;
- Steering Committee for Internationalisation of Research Programme – Jüri Engelbrecht;
- Steering Committees of National R&D Programmes: Language Technology Support for the Estonian Language (2011-2017) – Jaak Vilo (Chairman); Supporting Terminology in Estonian (2013-2017) – Valter Lang; Compilation and Publishing of Textbooks in Estonian for Higher Education (2013-2017) – Margus Lopp;

Programme Board of the National Programme Values Development in Estonian Society (2015-2020) – Olav Aarna and Jüri Engelbrecht;
Adult Education Council – Olav Aarna;
Estonian Language Council – Karl Pajusalu.

Ministry of Economic Affairs and Communications:
Space Affairs Council – Ene Ergma (Chairperson).

Ministry of Finance:
Cohesion Policy Operational Programme Monitoring Committee – Tarmo Soomere (permanent member), Margus Lopp (substitute member).

Ministry of the Environment:
Gene Technology Committee – Eero Vasar;
Environmental Monitoring Advisory Committee – Anto Raukas.

Estonian Centres of Excellence in Research were headed by ten Members of the Academy: Raimund-Johannes Ubar – Centre for Integrated Electronic Systems and Biomedical Engineering; Martin Zobel – Frontiers in Biodiversity Research; Eero Vasar – Centre of Excellence for Translational Medicine; Tarmo Uustalu – Estonian Excellence in Computer Science; Valter Lang – Centre of Excellence in Cultural Theory; Vladimir Hižnjakov – Mesosystems – Theory and Applications; Enn Lust – High-technology Materials for Sustainable Development; Ülo Niinemets – Centre of Excellence in Environmental Adaptation; Martti Raidal – Dark Matter in (Astro)particle Physics and Cosmology; Jüri Engelbrecht – Centre for Nonlinear Studies

Three Members of the Academy belonged to decision making bodies of doctoral schools: Jaan Ross (Director) – Graduate School of Culture Studies and Arts; Karl Pajusalu (Chairman of the Council) – Graduate School of Linguistics, Philosophy and Semiotics; Eve Oja (Chairman of the Council) – Estonian Graduate School in Mathematics and Statistics.

Similarly to previous years, Members of the Academy were widely represented in international scientific organisations and editorial boards of scholarly journals.

Jüri Engelbrecht and Anto Raukas were granted the National Science Prize for Outstanding Achievements in Research and Development, while Tarmo Uustalu was recognised with the Annual Award in the category of exact sciences (see p.75).

Karl Pajusalu was awarded the Order of the White Star, 3rd class (see p.75).

Members of the Academy also gained recognition from various institutions, associations and organisations:

Jüri Engelbrecht was elected Foreign Member of the Turin Academy of Sciences, Professor of Interdisciplinary Studies at the WHO Collaborating Centre for Research, Training and Consulting in Health Promotion at the Workplace in Italy (IACP) and a Member of IACP Scientific Advisory Board;

Ene Ergma was awarded the Skytte Medal of the University of Tartu;

Urmas Kõljalg was granted the European Mycological Association Award for outstanding innovation in mycology relative to framing a paradigm of species hypothesis;

Valter Lang was awarded the Medal of the Baltic Assembly;

Andres Metspalu was nominated Honorary Citizen of Tartu;

Karl Pajusalu was elected Foreign Member of the Latvian Academy of Sciences;

Arvo Pärt was granted the Cross of Merit, 1st class of the Estonian Evangelical Lutheran Church, the Järva County Coat of Arms Badge, the Austrian Decoration for Science and Art, the PÖFF (Tallinn Black Nights Film Festival) Lifetime Achievement Award and a special scholarship of the Estonian National Culture Foundation Council;

Anto Raukas was nominated Honorary Member of the Association of Estonians Abroad (Välis-Eesti Ühing), received the Kullamaa Coat of Arms Badge, the Estonian Polar Club Anniversary Medal, Letters of Appreciation from TUT Institute of Geology, Estonian Geographical Society and Estonian Reserve Officers' Association;

Peeter Saari was elected Lecturer of the Year (academic year 2014/15) by the University of Tartu physics students, received the OSA Outstanding Reviewer Award from the Optical Society of America and the Grand Medal of the University of Tartu;

Tarmo Soomere was awarded the Cross of Merit, 2nd class of the Estonian Evangelical Lutheran Church and was elected Foreign Member of the Latvian Academy of Sciences;

Peeter Tulviste was nominated Honorary Citizen of Tartu, received the White Cross of the Estonian Defence League, 1st class and was honoured by placing a bench dedicated to him on the Toomemägi Hill;

Foreign Members continued participating in the activities of the Academy and research institutions of Estonia in compliance with time-honoured collegial relationships, scientific collaborations and research alliances.

GENERAL ASSEMBLY, BOARD, DIVISIONS, COUNCILS, COMMITTEES

GENERAL ASSEMBLY

The General Assembly of the Academy convened twice in 2015:

- April 23 Annual Meeting
- Jüri Engelbrecht NONLINEAR DYNAMICS AND COMPLEX SYSTEMS
 - Anto Raukas THE THINGS DONE AND THOSE GONE UNDONE
 - Steven R. Bishop THE UK ROYAL SOCIETY: ITS RELATIONSHIP WITH SCIENCE AND THE UK GOVERNMENT
 - Reports of Heads of Divisions Jaak Aaviksoo, Jakob Kübarsepp, Toomas Asser and Urmas Varblane and President Tarmo Soomere on the activities of the Academy in 2014
 - Report by Secretary General Margus Lopp on the financial activities of the Academy in 2014 and the budget 2015
 - Assigning of member allowances for the period 1.05.2015-30.04.2016
- December 2 Meeting
- The Karl Ernst von Baer Memorial Medal was handed over
 - Ülle Madise THE AUTHORITY IN REGARD TO SCIENCE AND LAW
 - Alar Karis DO ESTONIAN PUBLIC AUTHORITIES NEED THE ACADEMY OF SCIENCES?
 - Election of Foreign Members of the Academy

The Annual Meeting in April focussed on summing up the activities of the Academy in 2014. Detailed data on those activities were made available in the ESTONIAN ACADEMY OF SCIENCES YEAR BOOK XX (47), mailed to all Members in advance.

Chair of Cultural Affairs Committee of the *Riigikogu* (Parliament) Laine Randjärv took the floor for the address.

Laureates of National Science Prize 2015 for long-standing achievements in research and development presented scientific papers: Member of Academy Jüri Engelbrecht on the topic NONLINEAR DYNAMICS AND COMPLEX SYSTEMS; Member of Academy Anto Raukas on the topic THE THINGS DONE AND THOSE GONE UNDONE.

Foreign Member of Academy Steven R. Bishop gave a speech on the topic THE UK ROYAL SOCIETY: ITS RELATIONSHIP WITH SCIENCE AND THE UK GOVERNMENT.

Heads of Divisions Jaak Aaviksoo, Jakob Kübarsepp, Toomas Asser ja Urmas Varblane reported on the activities of their Divisions. President Tarmo Soomere summarised the reports. Based on the reports and supplementary information in the YEAR BOOK, the General Assembly, on the proposal of Secretary General, approved the Academy's annual report 2014.

Secretary General Margus Lopp reported on implementation of the 2014 budget and presented the 2015 budget. Both were approved by the General Assembly.

Secretary General Margus Lopp introduced a plan for assigning member allowances in the period 1.05.2015-30.04.2016. The General Assembly decided to distribute the allocated amount among all Members of the Academy on an equal basis.

President Tarmo Soomere presented to the General Assembly the decision of Board to call elections of Foreign Members, namely to elect at December Meeting of the General Assembly four Foreign Members, one from each Division.

Members of Academy Ain-Elmar Kaasik, Ene Ergma, Arved-Ervin Sapar and Margus Lopp took the floor in the process of discussion.

The second Meeting of the General Assembly was held on December 2. President Tarmo Soomere handed over to Member of Academy Richard Villems the Karl Ernst von Baer Memorial Medal for a major scientific contribution in building a school in molecular biology and achievements in population genetics.

Chancellor of Justice Ülle Madise gave a talk on the topic THE AUTHORITY OF SCIENCE AND LAW and Auditor General Alar Karis on the topic DOES THE REPUBLIC OF ESTONIA NEED AN ACADEMY OF SCIENCES. A discussion followed about the role of Academy within the context of Constitution of Estonia and other legal acts and functioning of the state as an integral entity.

The next item on the agenda was election of Foreign Members of Academy to four vacancies that had been previously announced. As a result of the ballot, all four candidates presented by Divisions were elected Foreign Members: Jonathan (John) E.Ellis, Esko Ukkonen, Ülo Langel, Cornelius Theodor Hasselblatt.

In the process of discussions Anto Raukas, Jüri Engelbrecht, Agu Laisk, Peeter Saari, Jaak Järv took the floor.

President Tarmo Soomere summarised the activities of the Academy in 2015 and Vice-President Ergo Nõmmiste delivered concluding remarks.

BOARD

The Board of the Estonian Academy of Sciences worked in 2015 in the following composition:

President	Tarmo Soomere
Vice-President	Ergo Nõmmiste
Vice-President	Mart Kalm
Secretary General	Margus Lopp
Head of Division of Physics and Astronomy	Jaak Aaviksoo
Head of Division of Informatics and Engineering	Jakob Kübarsepp
Head of Division of Biology, Geology and Chemistry	Toomas Asser
Head of Division of Humanities and Social Sciences	Urmas Varblane
Non-Executive Members	Jüri Engelbrecht
	Jaak Järv
	Valter Lang
	Ülo Niinemets
	Karl Pajusalu
	Martti Raidal
	Peeter Saari
	Andres Öpik

The Board held eight working meetings during the year. Once, the decision was passed under the procedure of electronic poll.

At the beginning of the year, the recently elected Board adopted distribution of responsibilities among its members. The Board, reckoning with the proposals of the Divisions, considered and approved the Academy's Action Plan for 2015, to be complemented later on the case-by-case basis. For Academy events in the future, joint planning and organising of inter-divisional events was considered a good idea. To enhance the efficiency of the work in the following year, the dates of Board meetings and General Assembly meetings would be fixed as early as in November.

Several Board meetings were organised outside the Academy House, in conjunction either with another event or visit to the host institution. At the beginning of the year, a Board meeting was held in Art Museum Kumu, Tallinn. Vice-President Mart Kalm presented the exposition *THE TRANSITION FROM AN INDUSTRIAL ARTS SCHOOL TO ACADEMY OF ARTS* the creating of which he himself had supervised; also a seminar on art history was held. In May the Board meeting was held in Pärnu, together with the traditional *ACADEMY SCIENCE DAY*. Tartu hosted the Board meetings three times, always accompanied by an ancillary event. In March members of Board toured the *Physicum* – the new physics building of the University of Tartu, where a seminar was held. In September members of Board visited the Estonian University of Life Sciences; after the

Board meeting, Member of Academy Urmas Kõljalg delivered an academic lecture. The November meeting in Tartu was held combined with conference of Research Professors.

The March meeting passed the decision to elect four new Foreign Members in 2015. In September the Board discussed and decided to present to General Assembly for election the candidates named by Divisions.

The subject of Research Professors was repeatedly on agenda. In January the Board heard the second-year report of Research Professor Anu Realo and approved her third-year plan and budget. At the end of year all Research Professors – Rein Ahas, Anu Realo and Tõnis Timmusk – presented to the Board their third-year reports, thus completing their Research Professor's term of office. To elect the subsequent Research Professors, the Board decided to call a contest and set up an assessment panel. The Board plans to widen the institution of Research Professors by creating topic-based Research Professorships. The negotiations with ministries have been started. A proposal has been made to the Ministry of Education and Research to amend the respective regulation.

The Board decided to dismiss the draft for amending the Regulation of Minister of Education and Research CONDITIONS AND PROCEDURE FOR APPLYING FOR, AWARDING AND AMENDING THE AMOUNT OF INSTITUTIONAL RESEARCH FUNDING of December 27, 2011, recommending to bring it into compliance with Organisation of Research Act § 15.

Board Members were actively involved in the debates over a report by Gunnar Okk (REPORT ON THE NETWORK AND POLICIES OF ESTONIAN UNIVERSITIES, RESEARCH INSTITUTIONS AND INSTITUTIONS OF PROFESSIONAL HIGHER EDUCATION), both electronically and at meetings. Basing on their opinions, an official response was drawn and sent to Cabinet Office.

In spring, the Board decided to announce the Student Research Paper Contest and approved the composition of the contest jury (chaired by Member of Academy Jaan Aarik). On December 15, J.Aarik reported to the Board on the results of the contest. The Board meeting was followed by a conference, where four laureates presented their prize-winning papers, and by an award ceremony (see p.48-49). Innovatively, it had been possible to submit works only electronically this year, resulting in booming participation (199). A discussion was held with Estonian Research Council on the feasibility of two simultaneous Student Research Paper Contests, and it was decided to start cooperation for setting up a common contest system.

Discussions and decision-making on current issues required a significant amount of time of the Board. In April the Board considered and submitted to the General Assembly for approval the implementation of the consolidated budget for 2014 and the budget 2015. Tarmo Ader of Assertum Audit OÜ was appointed auditor

of the Academy. Member of Academy Jaan Undusk was approved Director of the Under and Tuglas Literature Centre for the following five years. The Board heard the information on use of the yield of Academy of Sciences' sub-fund of Estonian National Culture Foundation. It studied the Academy Publishers self-analysis and made proposals for increasing sustainability of the Publishers. The Board appointed Professor of Finno-Ugric Languages of the University of Tartu Gerson Stefan Klumpp as editor-in-chief of the journal *Linguistica Uralica*. The Board took notice of information about state of affairs with the popular science magazine *Horisont* (Horizon) and of transfer of its trademark to the Academy. It was decided to award the Karl Ernst von Baer Memorial Medal to Member of Academy Richard Villems. The Board made decision on the type of employment contracts to be concluded with leadership of the Academy.

Subject to request of AS Ülemiste City, the Board submitted a proposal to name the buildings in Ülemiste City in honour of deceased Academy Members (Viktor Palm, Nikolai Alumäe, Erast Parmasto, Heinrich Laul, Leo Jürgenson, Ottomar Maddison, Agu Aarna).

The Board decided to support its former nominees for Evaluation Committee of the Estonian Research Council (Anu Realo, Rainer Kattel, Enn Mellikov, Martti Raidal, Marek Tamm, Tõnis Timmusk, Jaak Vilo), should they decide wish to continue, and to nominate additionally Member of Academy Ergo Nõmmiste, Professor of Tallinn University of Technology Jarek Kurnitski, Professors of the University of Tartu Allen Kaasik and Tiit Tammaru.

In view of the changed composition of the Board, the changes in composition of Council of the Institute for Advanced Study were approved (Chairman Margus Lopp). The Board approved the composition of the Estonian National Committee for Mechanics (Chairman Andrus Salupere). It set up a committee for charting the events marking the anniversaries REPUBLIC OF ESTONIA 100 and ESTONIAN ACADEMY OF SCIENCES 80 (Chairman Member of Academy Jüri Engelbrecht) and heard the results of the work already done. It took notice of the progress of new media implements in the Academy and asked Members of Academy to actively contribute vital information that could and should be disseminated by web based communication tools). The Board approved association with Art Museum and started association talks with Library of the University of Tartu. President T.Soomere notified the Board about the wish of the Royal Society of Edinburgh to establish contacts with the Estonian Academy of Sciences and drafting of cooperation agreements. It discussed widening of the cooperation with National Academy of Sciences of Belarus and potential cooperation with Academy of Scientific Research & Technology of Egypt.

In November the Board held an enlarged meeting jointly with the staff of the Estonian Research Council, discussing possible cooperation. The meeting discussed academic involvement of young researchers and set up a joint task

group to launch the Young Academy. The Board noted science communication measures launched by the Estonian Research Council and offered its own ideas. It was considered necessary to devise a framework of science communication and decided to participate, on the Board member level, in the respective working group of the Estonian Research Council. To secure the analytical capacity necessary for fulfilling the Academy's statutory counselling function, it was decided to join efforts with the Estonian Research Council and other institutions.

President of Academy Tarmo Soomere, Vice-Presidents Mart Kalm and Ergo Nõmmiste and Secretary General Margus Lopp (all elected in 2014) initiated Monday consultations (27 were held during the year). They discussed in-house organisational issues of the Academy, for instance:

- budget;
- involvement of young researchers in activities of the Academy;
- Realising the Action Plan (among others it was decided to put the talks by Chancellor of Justice Ülle Madise THE AUTHORITY IN REGARD TO SCIENCE AND LAW and Auditor General Alar Karise DO ESTONIAN PUBLIC AUTHORITIES NEED THE ACADEMY OF SCIENCES? on agenda of the General Assembly meeting on December 2).

The Academy leaders also approached the societal and science policy issues and science communication topics wider. Under discussion were:

- closer cooperation with scientific societies;
- association of research, development R&D and cultural institutions with the Academy;
- media relations (among others current state of affairs and immediate future of popular science magazine *Horisont* (Horizon), as well as implementing in the Academy such web based communication tools as *Facebook* and diary). There were meetings and discussions: January 29 – President Tarmo Soomere and Secretary General Margus Lopp met with Ainar Ruusaar, board member of Estonian Public Broadcasting and Heidi Pruuli, editor-in-chief of the national TV channel ETV, to discuss the cooperation; April 1 – President Tarmo Soomere and member of Board Jüri Engelbrecht met with representatives of Estonian Research Council, to discuss science popularisation programme “TeaMe”, in particular, intra-programme cooperation opportunities; May 15 – President Tarmo Soomere met with undersecretary of Ministry of Culture Anne-Ly Reimaa. They discussed popular reviews of highlights of Estonian science as potential means to use for acceleration of integration of non-Estonian population; also opportunities for establishing a topic-based Research Professorship.

The role of the Academy within context of science as a driving force of societal development of the society was a constant part of the overall picture. Under scrutiny were:

- Development of Estonian research and the possible merger of development monitoring division of the Estonian Development Fund with the Academy. On February 16, President Tarmo Soomere met with Gunnar Okk. The talks focussed on the survey commissioned by Estonian Research and Development Council on structural re-organisations of Estonian universities and research. On December 9, President Tarmo Soomere met with Minister of Education and Research Jürgen Ligi, in order to discuss the opportunities for providing better science-based advice to the Government and Parliament and ways for alleviating the problems in R&D funding, as well as bottlenecks in popularising science and using potential of scientific societies for the society.
- Creation of topic-based Research Professorships, in cooperation with ministries, at the Academy Institute for Advanced Study. Among others, the following discussions were held on possibilities and need for cooperation. On January 9, President Tarmo Soomere and Vice-President Mart Kalm met with Minister of Culture Urve Tiidus. On March 27 President Tarmo Soomere met with Minister of the Environment Mati Raidma and Deputy Secretary General of the Ministry Ado Lõhmus. On May 27, Vice-President Mart Kalm met with Minister of Culture and representatives of creative unions; on June 3, President Tarmo Soomere met with Minister of the Environment Marko Pomerants.
- Cooperation with governmental institutions and Parliament. The Academy initiated meetings with representatives of Parliament's Cultural Affairs Committee (May 11) and Economic Affairs Committee (June 8). On October 29, the Cultural Affairs Committee invited President Tarmo Soomere and Foreign Member Steven R. Bishop to attend its session, in order to discuss the role of cooperation of the Academy and Parliament, its potential for knowledge-based decision-making processes, as well as serving the society in the broader perspective.

A separate circle of topics concerned modernisation of work of the Academy Publishers, including introducing of publishing fee from foreign authors and on publication of articles not concerned with Estonia.

DIVISIONS¹

DIVISION OF ASTRONOMY AND PHYSICS

In 2015, there was one electronic Division assembly and the Division assembly on October 23. In the process of electronic polling the Division presented as candidate of Foreign Member Jonathan (John) R. Ellis, who was elected Foreign Member by General Assembly in December.

The meeting of October 23 discussed the science policy situation in Estonia, election of Foreign Member, nomination for the assessment panel of Research Professor competition and the issue of Viktor Ambartsumian prize. The meeting emphasised the need for substantial increase in the number of Research Professorships (from the present three to eight).

On August 31, Member of Academy Jaak Aaviksoo took office as Rector of Tallinn University of Technology.

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

DIVISION OF INFORMATICS AND ENGINEERING

In 2015 two regular Division Assembly meetings, one extended meeting/seminar and two electronic meetings/discussions were held.

January 11-14 – Division meeting in the format of electronic conference-polling on the number of the Evaluation Committee members of the Estonian Research Council and possible nominees. In the area of engineering and natural sciences, Members of Academy Jaak Vilo and Andres Õpik and Professor Jarek Kurnitski won most support as expert candidates. Taking into account the forthcoming implementation of Frascati Manual (classification for compiling R&D statistics) in Estonia, the meeting deemed expedient to increase the number of Committee members to 15.

March 5-13 – Division meeting in electronic conference format. On agenda was the draft Regulation of Minister of Education and Research FUNDING OF CENTRES OF EXCELLENCE TO IMPROVE THE INTERNATIONAL COMPETITIVENESS AND QUALITY OF R&D and draft for amending the Regulation of Minister of Education and Research CONDITIONS AND PROCEDURE FOR APPLYING FOR, AWARDING AND AMENDING THE AMOUNT OF INSTITUTIONAL RESEARCH FUNDING. There was lively exchange of thoughts about draft regulation on centres of excellence. Positions were voiced in issues like conformity between goals of support and results expected, outcome indicators, selection criteria, costs eligibility, requirements to applications and evaluation of applications, number and size of research teams.

¹ Composed according to materials submitted by Heads of Divisions Jaak Aaviksoo, Jakob Kübarsepp, Toomas Asser and Urmas Varblane.

March 25 – Division Assembly and Tallinn University of Technology joint meeting-seminar with the following agenda: (1) situation and reforms in funding research; (2) researcher's career: Estonia in international background system; (3) research career path – problems and opportunities; (4) gender neutrality in research career model.

Deputy Secretary General of Ministry of Education and Research Indrek Reimand summed up the situation and reforms in research funding. It was found that the existing system of research funding is somewhat out of balance and ridden with tension. Funding of research must be revised, moving from the entirely project based funding to a system that would allow universities larger leeway in the decision process. The goal is to transfer from 'triple distribution' (institutional research funding – personal research funding – base funding) to 'double distribution' in ratio 50:50 – allocations to research institutions (base funding) and project based research subsidies. The research funding from state budget must grow to 1% GDP. The second key issue on Estonian research and higher education landscape is the model of researcher's career. A study THE CAREER OF SCIENTISTS: ESTONIA IN THE INTERNATIONAL SYSTEM had been carried out within national research and innovation policy monitoring programme TIPS. Professor Maaja Vadi of the University of Tartu, the supervisor of the task force, presented the study. Member of Academy Ülo Niinemets, chair of the WG for conception of research career model at the Academy Institute for Advanced Study gave a talk, also Associate Professor of Tallinn University Triin Roosalu, principal investigator of the project SUPPORTING THE CAREER TRACK OF FEMALE RESEARCHERS IN THE ACADEMIA delivered a paper.

June 25 – regular Division assembly, with the following agenda: the activity of doctoral schools in engineering and informatics, nomination of Foreign Members to the Academy Board, methods of divided complex optimal control of large energy systems, organisation of events related to Nikolai Alumäe's and Agu Aarna's centennials.

The heads of three doctoral schools reviewed the activities in 2009-2015 and analysed the results: doctoral school of information and communication technologies and doctoral school in civil and environmental engineering of Tallinn University of Technology; graduate school in functional materials and technologies of University of Tartu. Controversial opinions were expressed regarding the possibilities to pay stipends to (extra-budgetary) doctoral students from the schools' budget. Heads of schools unanimously testified to the positive effect of the schools on the successful completion of studies. Members of Academy Enn Mellikov and Andres Öpik put forward Dieter Meissner as an Academy Foreign Member candidate. Jüri Engelbrecht reported on the plans related to Nikolai Alumäe's centennial in September and Andres Öpik briefed the meeting on the events scheduled for Agu Aarna's centennial.

September 25 – Division meeting focussed on two topics: selection of a Foreign Member candidate for presenting to the Academy Board and discussion on a report by Gunnar Okk (REPORT ON THE NETWORK AND POLICIES OF ESTONIAN UNIVERSITIES, RESEARCH INSTITUTIONS AND INSTITUTIONS OF PROFESSIONAL HIGHER EDUCATION) that had been commissioned by the Estonian Research and Development Council. Also on agenda was renovation of composition of Estonian National Committee for Mechanics and information about a visit of delegation of Chinese Engineering Academy of Sciences in Estonia. Three candidates of Academy Foreign Members were presented by members of Division: Dieter Meissner, Reino Kurki-Suonio and Esko Ukkonen. It was decided to present to Board the candidacy of Professor of Computer Science of Helsinki University Esko Ukkonen. Discussion on so-called G.Okk's report took place in six domains: (a) independent international evaluations; (b) funding of higher education and research; (c) improving of academic competence; (d) structural reorganisation of higher education and research institutions; (e) cooperation of higher education institutions and (f) teaching and learning. New composition of Estonian National Committee for Mechanics was approved as follows: chair Andrus Salupere, members: Jüri Engelbrecht, Jaan Lellep, Tarmo Soomere, Jüri Majak, Ivar Talvik, Alexander Ryabchikov, Kristjan Tabri, Renno Veinthal.

The Division acted as co-organiser of the events related to NIKOLAI ALUMÄE'S CENTENNIAL in September. The Institute of Cybernetics of Tallinn University of Technology hosted the reporting CONFERENCE OF CENS (Centre for Nonlinear Studies; centre of excellence in 2011-2015). On September 15, the ESTONIAN DAYS OF MECHANICS took place. The programme included papers from scientists of Tallinn University of Technology (Institute of Cybernetics, Faculties of Information Technology and of Mechanical Engineering), University of Tartu and the Estonian University of Life Sciences. In connection with Nikolai Alumäe's anniversary, a collection MECHANICS IN ESTONIA was issued; a review on N.Alumäe's research in shell theory was published in the journal Proceedings of Estonian Academy of Sciences (2015, 64(2)).

Member of Academy A.Õpik was the main organiser of events to celebrate the CENTENNIAL OF MEMBER OF ACADEMY AGU AARNA (Rector of Tallinn University of Technology in 1960-1976). Division members participated. Within the jubilee framework an exposition was opened in the entrance hall of main building of Tallinn University of Technology on October 9; a lecture hall of Department of Chemistry and Materials Science was given Agu Aarna's name; flowers were laid on Agu Aarna's grave; a conference was held. The journal Oil Shale (2015, 32(3)) released the article by *Professor Emeritus* Leevi Mölder on A.Aarna's lifework.

The Division members organised a number of events in Estonia.

Jakob Kübarsepp was on the organising panel of the CONFERENCE EDUCON 2015 (Tallinn, March) and of the 24TH INTERNATIONAL BALTIC CONFERENCE BALTMATRIB 2015 (ENGINEERING MATERIALS AND TRIBOLOGY; Tallinn, November).

Tarmo Uustalu was the main promoter and chairman of programme committee at the 21ST INTERNATIONAL CONFERENCE ON TYPES FOR PROOFS AND PROGRAMS, TYPES 2015 (Tallinn, May). He also organised the ESTONIAN-FINNISH LOGIC MEETING (Rakvere, November), 20TH ESTONIAN WINTER SCHOOL IN COMPUTER SCIENCE, EWSCS 2015 (Palmse, March) and twice, the ESTONIAN COMPUTER SCIENCE THEORY DAYS (Rogosi, in February; Jõeküla, in October).

Raimund Ubar organised Centre of Excellence CEBE (Centre for Integrated Electronic Systems and Biomedical Engineering) INTERNATIONAL WORKSHOP (Tallinn, May), also INTERNATIONAL WORKSHOP ATMEL SOFTWARE STACK FOR 6LOWPAN NETWORKED EMBEDDED SYSTEMS for Estonian engineers and doctoral students, with participation by high-level specialists of the company Dresden Elektronik (Tallinn, February). He was on the organising panel of INTERNATIONAL SEMINAR OF COST ACTION MEDIAN (MANUFACTURABLE AND DEPENDABLE MULTICORE ARCHITECTURES AT NANOSCALE; TALLINN, NOVEMBER).

Leo Mõtus organised a series of nine seminars on the topic SITUATION MONITORING, UNDERSTANDING AND INFLUENCING with papers from Tallinn University of Technology, the University of Tartu, Tallinn University, Estonian Business School, National Information System Board. Nine papers (one of them from the USA) were presented at the summarising seminar in May.

Tarmo Soomere was main promoter of two INTERNATIONAL MINI-CONFERENCES (INTENSE DAYS IN MARINE AND COASTAL SCIENCE), with speakers from Estonia as well as from Sweden, Great Britain, Lithuania, Russia and Poland (Tallinn, in May and January). Stakeholders' conference of ITEE Centre of Excellence in Digital Connected Economy took place in Tallinn in October, with Jaak Vilo as the main organiser.

Enn Lust was involved in organisation of the CONFERENCE of the Centre of Excellence High-Technology Materials for Sustainable Development (Tartu, February).

Hillar Aben organised an INTERNATIONAL SUMMER SCHOOL ON INTERNAL STRESS IN GLASS (Tallinn, May).

Members of Division were also promoters of several events held abroad.

J.Kübarsepp was on the scientific committee of INTERNATIONAL CONFERENCE IN TRIBOLOGY BALTTTRIB 2015 (Kaunas, November).

R.Ubar visited Brandenburg University of Technology (end of April – beginning of May) and gave a course of lectures to doctoral students and members of faculty on the topic GRAPH-BASED DIAGNOSTIC MODELING OF DIGITAL

SYSTEMS. In August, he held an INTERNATIONAL SUMMER SCHOOL to master students and doctoral students on the topic DESIGN FOR TESTABILITY OF DIGITAL SYSTEMS at Darmstadt University of Technology. He served also as general vice-chair of EWDTs 2015 (IEEE EAST-WEST DESIGN AND TEST SYMPOSIUM; Batumi, Georgia, September), member of organising committee of international seminar DCPS DESIGN OF CYBER-PHYSICAL SYSTEMS (November) and member of programme committees of INTERNATIONAL CONFERENCES ECCTD, DSD, ASQED, MIXDES, DDECS.

T.Uustalu worked as member of steering panels of the following conferences and workshops: EUROPEAN JOINT CONFERENCES ON SOFTWARE SCIENCE (ETAPS), ACM SIGPLAN INTERNATIONAL CONFERENCES ON FUNCTIONAL PROGRAMMING (ICFP, until ICFP 2015), WORKSHOPS ON MATHEMATICALLY STRUCTURED FUNCTIONAL PROGRAMMING (MSFP), WORKSHOPS ON FIXED POINTS IN COMPUTER SCIENCE (FICS), INTERNATIONAL CONFERENCES ON TYPES FOR PROOFS AND PROGRAMS (TYPES), WORKSHOPS ON GENERIC PROGRAMMING (WGP), WORKSHOPS ON DEPENDENTLY TYPED PROGRAMMING (DTP) and programme panels of the following conferences and workshops: 12TH INTERNATIONAL CONFERENCE ON MATHEMATICS OF PROGRAM CONSTRUCTION (MPC 2015, Königswinter, Germany, June), 40TH INTERNATIONAL SYMPOSIUM ON MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE (MFCS 2015, Milan, Italy, August), 27TH NORDIC WORKSHOP ON PROGRAMMING THEORY (NWPT 2015, Reykjavík, Island, October) and 1ST SYMPOSIUM ON DEPENDABLE SOFTWARE ENGINEERING: THEORIES, TOOLS AND APPLICATIONS (SETTA 2015, Nanjing, China, November).

L.Mõtus was member of programme committees of the following conferences: IEEE INTERNATIONAL MULTI-DISCIPLINARY COGNITIVE METHODS IN SITUATION AWARENESS AND DECISION SUPPORT (CogSIMA 2016; San Diego, USA), 10TH ANNUAL SYSTEMS CONFERENCE (SYSCON 2016; Orlando, USA) and IEEE SYSTEMS OF SYSTEMS ENGINEERING CONFERENCE (Kongsberg, Norway).

A.Ots was member of organising committees of the 22ND CIRCULATING FLUIDIZED BED CONFERENCE (Turku, Finland, June), INTERNATIONAL CONFERENCE PLANT MAINTENANCE FOR MANAGING LIFE & PERFORMANCE, INTERNATIONAL FLUIDIZED BED CONFERENCE AND 7TH BALTIC HEAT TRANSFER CONFERENCE.

E.Lust was member of international organising committees of COST II WINTER SEMINAR LATEST DEVELOPMENTS IN ELECTROCHEMICAL CAPACITORS (Poznan, Poland, January) and 4TH INTERNATIONAL SYMPOSIUM ON ENHANCED ELECTROCHEMICAL CAPACITORS (June).

The largest contribution towards raising visibility of the Academy was made by President Tarmo Soomere: his articles, interviews and reflections appeared in Estonian dailies, could be watched and listened to over Estonian TV, Tallinn TV, *Raadio Kuku* and *Vikerraadio*, could be browsed in the web. He found time to deliver a number of public lectures, for instance within the Seniors University

Programme, in the Seaplane Harbour (Maritime Museum), at Academy Science Day in Pärnu, etc.

DIVISION OF BIOLOGY, GEOLOGY AND CHEMISTRY

May 6 – Head of Division Toomas Asser gave a talk at Pärnu SCIENCE DAY A STROKE – BOTH PREVENTABLE AND CURABLE.

In 2015, Division meetings were held electronically.

September 25 – Division discussed its preferences to candidacy of Foreign Member. Professor Ülo Langel collected most votes among three candidates submitted. Ü.Langel was presented to the Board and also elected by General Assembly.

October 22 – Division presented as candidate for K.E. von Baer Memorial Medal Member of Academy Richard Villems. Medal was handed over to him at the General Assembly in December.

September 29 – Academy Board met at Estonian University of Life Sciences. Member of Academy Ülo Niinemets introduced the laboratories of environmental adaptation investigations (located in the forestry building) and research carried out there. Professor Ülle Jaakma guided the visit to animal reproduction laboratories in the Zoomedicum. Member of Academy Urmas Kõljalg presented a lecture on the topic WILDLIFE SPECIES IN THE DIGITAL WORLD.

October 7 – Member of Academy Ülo Niinemets moderated the SCIENCE DAY follow-up event LANGUAGE OF PLANTS in Võru Gymnasium, with his doctoral students Linda-Liisa Veromann and Liisa Kübarsepp speaking. Head of Division Toomas Asser attended the event. Before the event there was a meeting with the Võru County Governor Andres Kõiv, who expressed hope for further long-term cooperation between the Academy and County.

November 18 – another SCIENCE DAY follow-up event in Võru Gymnasium, promoted by Member of Academy Toomas Asser and titled OUR HEALTH AND HEALTH CARE, with board member of Tartu University Hospital Mart Einasto, board member of South-Estonian Hospital Arvi Vask, and neurologist Liis Sabre speaking, besides Member of Academy Toomas Asser.

December 4-5 – the Hall of University of Tartu hosted the INTERNATIONAL CONFERENCE TO COMMEMORATE THE 140TH ANNIVERSARY OF MEMBER OF ACADEMY LUDVIG PUUSEPP. The memorial lecture on the autoimmune disorders of nervous system was delivered by Professor Angela Vincent of Oxford University. She was awarded the Puusepp Memorial Medal. Papers were delivered by Member of Academy Toomas Asser and Professor Marina Akimenko of St. Petersburg Bekhterev Psychoneurological Research Institute.

December 17-18 – All-Russian conference EPILEPTOLOGY AND NEUROSCIENCES in St. Petersburg dedicated to the 105th anniversary of Russian League Against Epilepsy and the 140th anniversary of Professor Ludvig Puusepp. Member of Academy Toomas Asser presented a paper at the plenary session.

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

DIVISION OF HUMANITIES AND SOCIAL SCIENCES

In 2015, the Division held one meeting and three electronic polls. The polls were conducted on selection of a nominee to receive the grant of young scientist from the Academy fund, and on candidacy of Foreign Member, with Cornelius Theodor Hasselblatt meeting with general approval. C.Hasselblatt was elected Foreign Member at General Assembly in December. The young scientist grant of the Academy of Sciences sub-fund of Estonian National Culture Foundation was awarded to Priit Vahter from Faculty of Economics of the University of Tartu.

January 10 – Member of Academy Lauri Mälksoo gave a talk at the MEMORIAL CONFERENCE OF JÜRI ULUOTS.

January 22-23 – Member of Academy Urmas Varblane delivered four public lectures at Kuressaare on the topic DYNAMICS OF WORLD ECONOMY AND CHALLENGES IN CONSUMPTION ENVIRONMENT: to students of Saaremaa Co-educational Gymnasium and Kuressaare Gymnasium, to senior citizens within the Seniors University Programme at the Foundation Saaremaa Universities Centre, to entrepreneurs at seminar organised by the Association of Saare Entrepreneurs, attracting in all 700 listeners.

May 6 – Division organised a SCIENCE DAY in the Pärnu county, with Member of Academy Urmas Varblane delivering a paper DEBT CRISIS AND EUROPE at the meeting held in the County Administration. Within SCIENCE DAY, the participants visited the electronics company MS Balti Trafo OÜ at Vändra and C.R.Jakobson Farmstead Museum at Kurgja.

August 28 – Member of Academy Urmas Varblane welcomed delegation of *Finska Akademien* in Tartu, presented to them the Academy and the University of Tartu, gave a talk on the topic ADJUSTMENTS OF THE ESTONIAN ECONOMY DURING THE RECENT ECONOMIC CRISIS.

September 22 – Member of Academy Urmas Varblane spoke on Estonian TV in the programme CITIZENS OF THE REPUBLIC, discussing the role of science in the Estonian society.

October 9 – Member of Academy Urmas Varblane attended Võru ENTREPRENEURIAL CONFERENCE ENTERPRISES OF THE FUTURE: AFAR OFF THE CITIES, delivering a paper NEW IDEAS, FUTURE OPPORTUNITIES, COOPERATION OF ENTREPRENEURS AND SCIENTISTS.

October 12 – Member of Academy Urmas Varblane spoke at a joint event of American Chamber of Commerce and European Commission and delivered a paper TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP. STRATEGIC IMPORTANCE OF TTIP. The event was convened at the EU Information Centre (Tallinn).

October 28 – the Division marked the 70TH BIRTHDAY OF MEMBER OF ACADEMY Peeter Tulviste with a ceremonial party. The meeting of Division held on the same day discussed the issue of further expansion of the Academy membership, nomination of a representative to the assessment panel for Research Professors' election and organisation of memorial event of Emil Wilhelm Magnus Georg Kraepelin in February 2016.

In connection with the issue of expansion of the Academy, the Member of Academy Jüri Allik had completed a bibliometric survey on the possible candidates of the Division.

November 2 – the discussion at the University of Tartu Library about the future of the humanities organisations, moderated by Member of Academy Karl Pajusalu.

Cooperation continued in organising scientific events together with Võru County Government and Võru Gymnasium.

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

COUNCILS, COMMITTEES

COMMITTEE ON METEORITICS

Set up in 1954

Chairman Jüri Plado, PhD

In Estonia, research in meteoritics is carried out at the University of Tartu, Institute of Geology of Tallinn University of Technology and Geological Survey of Estonia. The main objects explored in 2015 were:

- GEOLOGICAL AND GEOPHYSICAL RESEARCH OF THE KAALI MATERIAL AND METEORITE CRATER, Department of Geology of the University of Tartu, Argo Jõelett and Jüri Plado;
- MINERALOGICAL STUDY OF BOSUMTWI (GHANA) IMPACTITES, Department of Geology of the University of Tartu, Kalle Kirsimäe, Rudolf Välja;
- SEISMIC SURVEYS OF THE DOBELE METEORITE CRATER IN LATVIA, Department of Geology of the University of Tartu, Argo Jõelett;

- MINERALOGICAL AND GEOCHEMICAL STUDY OF THE RIES METEORITE CRATER IN GERMANY, Department of Geology of the University of Tartu, Rudolf Välja.

In that year, the following graduation papers on meteoritics were defended in the University of Tartu: J.Nezdoli STUDY OF INORGANIC COMPONENT WITHIN THE MEENIKUNNO BOG (SE ESTONIA) PEAT (supervisor J.Plado) and S.Soomer PALEOPROTEROZOIC SPHERULITIC LAYERS IN ZAONEGA FORMATION, KARELIA, NORTH-WESTERN RUSSIA (supervisors K.Kirsimäe, A.Lepland). Upon supervision by Juho Kirs, the meteoritics exposition of Natural Museum of the University of Tartu was completed.

September 21-23 – Argo Jõelett, Rudolf Välja and Sigrid Soomer participated with papers at CONFERENCE BRIDGING THE GAP III: IMPACT CRATERING IN NATURE, EXPERIMENTS, AND MODELING in Freiburg, Germany. After conference, the participants did fieldwork (supported by Barringer Family Fund) in Ries crater with the goal to collect mineral samples in vertical profile from external suevite cropping, in order to establish changes in vertical chemical-mineralogical composition.

During the year the employees of the Museum of Natural History and Department of Geology (University of Tartu), Institute of Geology (Tallinn University of Technology) and Geological Survey of Estonia gave consultations on various meteoritics related issues to individuals and official bodies (the possible links of happy finds to meteorites and of rotund structures to meteorite craters, development works in the Kaali crater field).

COMMITTEE ON NATURE CONSERVATION

Set up in 1955

Chairman Urmas Tartes, Professor

The Committee on Nature Conservation at the Estonian Academy of Sciences continued working on the premises of the Baer House (Veski St 4) belonging to the Estonian University of Life Sciences. The only surviving founder of the Committee, Member of Academy Hans Trass is successfully pursuing his quest in nature conservation as a member. At the end of the year the Committee comprised 25 members.

June 12 – the TRADITIONAL DAY on the topic TAEVASKODA AND ITS GEMS. Presentations were delivered by researchers of stature (Urmas Tartes, Olav Renno, Rein Järvekülg, Ants-Johannes Martin, Ahto Kaasik, Kalle Kroon, Tarmo Denks, Jaan Tobreluts).

The materials of the first and long-time chairman of the Committee Erik Kumari were organised, in order to hand them over to the Estonian National Archives. The Erik Kumari Memorial Nature Conservation Prize with the Gold Badge of Distinction for nature conservation was awarded to the merited nature conservationist Tiit Sillaots whom we sadly lost in May that year.

In 2015, the Committee marked its 60TH ANNIVERSARY together with the 100TH ANNIVERSARY OF A FOUNDING MEMBER of the Committee and its long-standing Vice-Chairman, Professor of Geography Endel Varep. The memorial brochure dedicated to Varep and composed by Vaike Hang appeared; an exposition was set up on Varep's life with focus on nature conservation and regional studies.

In the Baer House, several expositions were staged. At the beginning of the year, the interested visitors had a chance to see the exposition dedicated to the 130TH ANNIVERSARY of author and school teacher, the enlightenment figure Mats Mõtslane (Mart Kiirats). It was later transferred for display in Pärnu-Jaagupi central library. A public exposition from V.Hang's postcard collection FOLK ART ON PAPER was on display in February and March. The Committee also presented the mapping works of farm buildings by V.Hang and data collected on large boulders in Pärnumaa. Memorial exhibitions were composed to remember Tiit Sillaots and Professor of Estonian University of Life Sciences Karl Annuk (1930-2015).

In August Vaike Hang organised in Tõstamaa community centre the exposition on farm buildings of several hamlets surrounding the township. At exposition, she presented in greater detail the Sooselja farm of the Pedaka hamlet since its establishment over four generations. The interested visitors had a chance to see pictures of farm buildings of the Manija and Ermistu hamlets and views of nature.

Daily work of members of the Committee is prevalently nature conservation or closely related matters.

Vice-Chairman of the Committee Heiki Tamm spoke at several international conferences on research done by botanical gardens; he participated in fieldwork and supervised study trips of Society of Friends of the Tallinn Botanical Gardens. Vilma Kuusk monitored the developments related to city cows on Pärnu coastal meadow area, she taught plant-craft, and shared her knowledge of plants on golf greens. Enn-Aavo Pirrus did fieldwork in Jõgevamaa, studying the nature tourism opportunities and issued the calendar 2016 – ESTONIAN BOULDERS AS NATURAL MONUMENTS. E.-A.Pirrus also expressed his concern over extensive relocations taking place on circumvallations of the Kaali meteorite crater (our most important monument of the still nature), done by ignoring experts, dismissing the need to conserve as an integral entity the well-preserved geostructure of that unique meteorite event.

Urmas Tartes delivered lectures all over Estonia – in Estonian Nature Museum, Peedu kindergarten, Vapramäe nature house, Estonian Environmental Board nature night in Haapsalu. He supervised the nature hike at Saaremaa orchid festival, the bug camp of the Lilli nature house and he conducted workshops at Türi Co-educational Gymnasium nature camp.

U. Tartes also worked on evaluation panel of contests Nature Photo of the Year, photo competition of the journal *Eesti Loodus*, photo competition NOTICE ME! (organised by Foundation VVV), Wikimedia Estonia science photo contest. He was involved in the work of Natural Resources Commission of the Estonian Academy of Sciences. Jointly with Arne Ader he completed a multimedia programme presenting Vapramäe, Vellavere and Vitipalu natural assets, available for visitors at Vapramäe nature house.

The Committee cooperates with Ministry of the Environment and its structural institutions, with Estonian Ornithologists' Society, Estonian Naturalists' Society, and Estonian Nature Conservation Society.

ENERGY COUNCIL

Set up in 1998

Chairman Arvi Hamburg, Professor

The Energy Council held four meetings in 2015: on May 26, June 11, September 30 and November 18.

May 26 – Chairman of the Council Arvi Hamburg presented the RESEARCH AND TECHNOLOGY PACT, an open cooperation agreement between state, local governments, business community, academia and the third sector to ensure support in the field of research, technology and engineering. The PACT aims to enhance sustainable development of education and industry of the area, securing adequately qualified labour force in Estonia. To gain this end, three main lines of action are planned. Firstly, vocational guidance of young people, communication of the essentiality of technology and career opportunities in this field, generating interest to engineering and technology. Secondly, modernising education and training in technology area, fostering creativity from basic school already. Thirdly, increasing attractiveness of engineer's profession, moulding knowledge-based economy. The meeting discussed also plans for promotion of R&D in energy field and training of energy specialists. The training is being considered as complex mastering of theoretical knowledge and practical skills, as a professional qualification.

The Council declared that the volume and resource of energy research is not in conformity with importance of energy in national economy and that in cooperation of Tallinn University of Technology with industry, a programme must be launched to popularise energy and enhance appeal of studies. The Council assumed the task to coordinate the programme of upbringing energy specialists and to enlarge the opportunities of funding energy research, involving all stakeholders.

June 11 – the meeting focussed on strategic avenues of *Eesti Energia AS* and innovation initiatives. The meeting heard papers of representatives of *Eesti Energia* (EE). Chairman of the management board Hando Sutter spoke about

economic performance of EE, strategic avenues and principles of development activity. Member of the management board Margus Vals and head of R&D Indrek Aarna presented the priority projects of EE. The speakers emphasised the relevance of cooperation with research institutions and companies on the principle: the company shall notify about the challenge, the partner about its capacities and ideas. EE had made up a ranking list of the innovation projects supporting its development; for implementation the order will be placed with research institutions and universities.

EN accepted and recognized all EE innovation projects, acknowledging also the need to involve state funding for performing large-scale research, and recommended the Estonian Government to consider initiation of an energy technology programme. The Council advised EE to make more use of Estonian research potential and to conclude frame agreements with universities. It also recommended the Government to develop a long-term optimal taxation system of oil shale industry.

September 30 – on agenda were directions of the long-term development plan (until 2030; with perspectives covering the period until 2050) of Estonian energy sector (ENMAK); the price formation of electric energy for end consumer and developments of the gas market. Head of Energy Department, Ministry of Economic Affairs and Communications Timo Tatar gave talk on ENMAK, which general goal is to provide consumers with energy at market price and adequate security of supply with minimal environmental impacts, in compliance with the goals of EU long-term energy and climate policy. ENMAK also considers measures for improvement of Estonian economic climate and environmental state and for growth of long-term competitiveness. Under consideration were ENMAK's various energy supply scenarios, options of energy use in residential economy and transport sector, also energy production from domestic resources. The Council pointed out that part of ENMAK scenarios did not base on analysis, wherefore it was recommended to do additional analyses prior to mapping out targeted activities.

The price formation of electricity for end-consumer was the topic of speeches by Head of Regulatory Division, Estonian Competition Board Külli Haab and Chairman of Management Board, *Elektrilevi OÜ* (a distribution network operator) Tarmo Mere. The Council recommended to differentiate the requirements of electricity supply security in the regions and to implement a two-component transmission charge tariff.

Chairman of board of *Alexela Group* Marti Hääl spoke of developments in the gas market, analysing the role of regional liquified natural gas (LNG) terminals and market situation in the Baltic Sea, the need for a regional terminal and problems of marketing gaseous transport fuels. The Council supported overwhelmingly the need to build a LNG regional terminal in Paldiski; building the *Balticconnector* between Estonian and Finnish gas grids without additional

gas supply source was not deemed justified. The Council had doubts about long-term competitiveness of the LNG floating terminal in Klaipėda and it does not envision growth of region's gas supply security through building small local LNG terminals.

November 18 – the paper THE WORLD ENERGY COUNCIL. RESEARCH AND ACTIVITIES was delivered at the meeting by Secretary General of Estonian National Committee (WEC-E) of the World Energy Council Mihkel Härm. M.Härm characterised the extent and content of WEC research, in particular the impact and potential for development of our region. The Council recommended initiating the analysis of use in the world of non-conventional fuels, highlighting the opportunities of oil shale. It also recommended to compile a review article on WEC analyses for press and possibly also a volume, analysing global trends in energy and fuels.

Member of Academy Lembit Krumm presented the joint project of the EU and Russian Federation OPTIMAL CONTROL OF LARGE ENERGY SYSTEMS IN CONDITIONS OF MAJOR DISTURBANCE. The Council advised this line of research as promising and supported the initiative both in the EU direction and with the Russian research institutions.

Noteworthy is the initiative of the Council in focussing the energy research and promotion of cooperation with companies of energy industry. Also worth highlighting is the recommendation for further analysis of ENMAK preliminary research. Concession of location of the LNG regional terminal to the Republic of Finland, according to an agreement between the Prime Ministers at the beginning of year must be considered a failure – the arguments of the Council and speaking up in Foreign Affairs Committee of Parliament was considered not sufficiently substantiated.

For 2016, the Council plans its main output in the adoption by the Government of a society-oriented ENMAK, impact analysis on energy security of Estonian climate policy directives, elaboration of optimal long-term taxation system of oil shale industry, communication of energy development trends in the world to the public.

COMMITTEE ON PHYLOGENY AND TAXONOMY

Set up in 2007

Chairman Urmas Kõljalg, Member of Academy

Committee on Phylogeny and Taxonomy (FS) participated actively in the work of the Consortium of European Taxonomic Facilities (CETAF AISBL, www.cetaf.org). CETAF is a network of European R&D institutions that hold collections related to biological diversity and geosciences. The Committee plays essentially the same role in Estonia as CETAF in Europe. The Committee coordinates the work of natural science collections, incl. their digitalisation.

The following detailed review of the activities in 2015 has been divided into two parts, i.e. international activity and activity in Estonia.

INTERNATIONAL ACTIVITY

Chairman of the Committee Member of Academy Urmas Kõljalg represented Estonia at CETAF 37TH GENERAL MEETING in Meise Botanical Gardens (Belgium, April 21-22, 2015). The most important item on agenda was CETAF strategic development plan for 2015-2025. U.Kõljalg participated in the working team, reviewing the strategic development plan and submitted proposals of the Committee. Other items on agenda were approval of financial report 2014, dissolving the Executive Committee, reports of Chair of CETAF, General Secretariat and Executive Committee for the period of October 2014-April 2015, discussion and approval of past activities and proposal for 2015-2016, the issue of European Journal of Taxonomy becoming the official journal of CETAF, approval of General Secretariat work plan 2016-2019, etc.

Within CETAF, discussion continued on the so-called ABS (access and benefit-sharing) regulation that lays down the implementation rules of the so-called Nagoya protocol in the EU. Nagoya protocol is an international agreement within Convention on Biological Diversity, regulating access to genetic resources and fair sharing of the benefits thereof. A trivial example is sharing the profit from a drug produced on the basis of a plant or micro-organism between producer and country of origin of the genetic resource. For that purpose a system is created, to provide establishment of origin of genetic resource. Because CETAF brings together all larger biologic collections in Europe, the said regulation will affect all of them. More specifically, the exchange of genetic resources as well as its storage must follow certain rules. Among others, the procedures related to genetic resources must be recorded in database. For that purpose, in 2015 CETAF initiated activities in Estonia, supporting activation of the ABS regulation in our scientific collections. Chairman of Committee U.Kõljalg participated in those activities as representative of Estonia and advised the expert board on scientific collections of Ministry of Education and Research.

U.Kõljalg participated in drafting a new ESFRI (THE EUROPEAN STRATEGY FORUM ON RESEARCH INFRASTRUCTURES) roadmap EUCOLL. The roadmap would pursue the aim of creating a world leading research centre of natural science collections. Deplorably the Government of Germany rejected that proposal in 2015, however suggesting that the proposal be complemented and submitted anew. In March 2016 the first meeting would take place in Leiden, with Chairman of the Committee participating. U.Kõljalg also participated in the project EUBON (www.eubon.eu, European Biodiversity Observation Network), aimed at establishing for Europe a single information system and platform for sharing biodiversity data. Estonia is responsible for the work package, concerned with software development and data mobilisation.

INTRA-ESTONIAN ACTIVITY

The Committee continues active participation in the work of NATARC (natarc.ut.ee), an object of the Estonian Research Infrastructures Roadmap. U.Kõljalg chairs the NATARC Council, Vice Chairman of the Committee Olle Hints is member of this Council. In 2015 the NATARC as a project was successfully completed. Several important parts of infrastructure were launched, e.g. new zoological and geological collections in the University of Tartu. Two components of electronic infrastructure were transferred to a new software platform: a biology database depository PlutoF (plutof.ut.ee) and a geology database depository SARV (geokogud.info). In cooperation with Estonian universities and institutions of Ministry for the Environment a new roadmap application was tackled. A cornerstone of the application shall be cooperation with the state agencies at making available the information related to Estonian still and living nature. It is the goal to create software solutions that will integrate the academic and national databases and will enable access to all existing information from one place.

Members of the Committee participated in the work of Expert Board (nominated by the Minister of Education and Research) for the national programme SCIENCE COLLECTIONS IN ESTONIA. Olle Hints chairs the Board. The Board is tasked with advising the ministry on improving and funding the work of natural science archives. O.Hints is also Chairman of expert commission on open science at the Estonian Research Council. The Commission is tasked to draft a document on conceptual principles of OPEN SCIENCE, options for charting a national strategy and recommendations for possible actions.

COMMITTEE ON MARINE SCIENCES

Set up in 2007

Chairman Tarmo Soomere, Member of Academy

Committee on Marine Sciences addresses representatives of Estonian competence in all fields of science related to seas and other large water reservoirs and their ecosystem (e.g. various branches of marine research and limnology, marine geology, coastal engineering and coastal science, hydrology, research of sea bottom and resources of aquatic habitat and the issues related to their exploitation, spatial planning of sea). Marine science means aggregate of branches of science so defined.

The Committee followed the regular routine of electronic meetings in daily work. Members of Committee were currently kept in picture of the information received from European Marine Board (EMB) and plenary sessions of European Marine Board.

There were three electronic polls.

- January 17 – the report of the Committee for 2014 was despatched electronically to the members;
- February 10 – a discussion on the possibilities of inviting top speakers to the 5th Forum of the European Marine Board (EMB) OCEAN-CLIMATE NEXUS (European Parliament, Brussels, on October 21, 2015) and of finding experts willing to participate in the task force for drafting the programme document of that forum;
- July 16 – a discussion on finding and recommending potential experts to the working group preparing an EMB report focussing on developments and needs of citizen science.

Due to a crowded time schedule, the Committee could not continue the SPARKLING SEMINARS focussing on marine, lake and coastal science started within marine sciences research in 2013. In a sense those seminars were substituted for by two intense days in marine and coastal science (in January and May; Institute of Cybernetics of Tallinn University of Technology, speakers from Sweden, Great Britain, Lithuania, Russia and Poland).

At the EMB SPRING PLENARY SESSION (Ghent, in April), T.Soomere was re-elected Vice-Chairman of EMB and member of Executive Committee; under Statute of EMB for two years (2015-2017).

European Science Foundation (ESF) had been undergoing a major transformation for some years. EMB (originally an expert board at ESF) decided as early as in 2012 to embark on a path independent of ESF, insofar as possible. Since 2013, the name European Marine Board has been in use. In 2015 EMB passed a decision to found its own legal entity for further activities. Estonian Academy of Sciences was called to be founding member of the renovated European Marine Board. The founding documents were signed at the plenary session of the Executive Committee on January 20, 2016.

In the reporting year T.Soomere participated at meeting of the EMB Executive Committee in Brussels (in January), at meeting of Executive Committee and spring plenary session in Ghent, Belgium (in April), at meeting of Executive Committee and at autumn plenary session in Split, Croatia (in October).

Chairman of Committee T.Soomere sits on the Environmental Panel of EASAC (European Academies' Science Advisory Council) as nominated by the Estonian Academy of Sciences and is a founding member of the Panel. One of his responsibilities is to liaise with EMB, facilitating exchange of information between those organisations and coordination of positions. T.Soomere participated on the first day of the spring session of the Panel in Rome, Italy (in April). EASAC initiated an analysis on marine sustainability in 2014. T.Soomere belonged to the working group and is a co-author of the report titled MARINE SUSTAINABILITY IN AN AGE OF CHANGING OCEANS AND SEA that was finalised in summer 2015, peer-reviewed and endorsed by member Academies of EASAC in autumn, and

was launched during a public event in the Palace of Academies (Brussels) on January 25, 2016.

The work related to Joint Programming Initiatives (JPI) Oceans, Climate, Water (Estonia had acceded in 2013) continued. Vice Chairman of the Committee Kalle Olli is one of Estonian representatives in the JPI Oceans. Within context of JPI Water, Vice-Chair of the Committee Professor Tiina Nõges organised the conference HORIZONS OF ESTONIAN WATER SCIENCE (Võrtsjärve Limnology Centre, in April). Gulf of Finland Year 2014 continued into 2015: Member of the Committee Professor Urmas Lips who had been an Estonian coordinator of events, initiated and organised a summarising final conference in Tallinn (in November).

Bearing in mind implications for the science policy of the Baltic Sea region, Chairman of Committee Tarmo Soomere delivered the paper VOICE OF RESEARCHERS IN CHARTING THE FUTURE OF EUROPE at the conference JOINT PROGRAMMING INITIATIVES IN ENVIRONMENTAL SCIENCE – WHEREIN AND WHERE TO? (Academy of Sciences, Tallinn, in June) and gave a keynote talk SOCIETAL CHALLENGES IN MARINE SCIENCE at the 10TH BALTIC SEA SCIENCE CONGRESS (Riga, in June).

T.Soomere delivered a series of invited and public lectures on problems of sea and coastal science within Estonian context: ESTONIAN COASTS UNDER PRESSURE OF HIGH WATERS AND LARGE WAVES (Tallinn Directors' Club, February), DIALOGUE OF ESTONIAN COASTS WITH BALTIC SEA WAVES within the Seniors University Programme (Kuressaare, February), ROARING SEAS to introduce the documentary film OCEAN'S FURY (Maritime Museum, Tallinn, March), POSSIBILITIES AND BOTTLENECKS OF MODELS AND DATABASES OF SEA AND COAST at a seminar of the international project DEVELOPMENT OF THE DATA-MODELLING SYSTEM AND THE DECISION SUPPORT TOOL FOR THE INTEGRATED MARINE AND INLAND WATER MANAGEMENT (Tallinn, March), ESTONIAN COASTS: HOLDING FORTH OR SINKING? at the ACADEMY SCIENCE DAY (Pärnu, May), MUSIC OF WAVES ON ESTONIAN COASTS within the MUSEUMS' NIGHT at Jõhvi fortified church-museum (in May), ESTONIAN COASTS: FRAGILE BALANCE OF WATER AND LAND at JOINT SEMINAR of Oxford&Cambridge Club Estonia and Humboldt Club Estonia (Academy of Sciences, Tallinn, May).

The Committee has continually fulfilled its main tasks, representing the Estonian marine science in the European Marine Board, and excellence of marine science at the European academic landscape, also communicating marine sciences to the society and – if necessary – advising the Estonian Government.

In recent years the Committee has shifted the focus of activities to international aspects. Those activities have enlarged the opportunities to influence and design the European marine science policy; also to heighten the visibility of marine science of the Baltic Sea countries and Estonia.

Nationally, the visibility of marine science – by and large through activity of the Committee members – is presently excellent. Certain fields of sea, lake and coastal science have made it among prominent research directions of all four major Estonian universities. Organisation of various events has heightened awareness of the potential of Estonian sea and coastal science and limnology, also helped to consolidate the existing competence and make it heard loud and strong. The invitations to speak about sea and coastal science topics at various events and in media are too numerous to be accepted. It would only be logical for Committee to become a body coordinating and consolidating the activities of various domains of sea, lake and coastal science, joining together and unifying the voice of those domains also in Estonian science landscape and the system of funding research. It would call for certain resources, however first and foremost, the resolute intention of all interested parties. Academy of Sciences is ready to accept the respective changes in the statute and rules of procedure of the Committee.

STANDING COMMITTEE ON MEDICAL SCIENCE AND HEALTH STRATEGY

Set up in 2011

Chairman Eero Vasar, Member of Academy

In 2015, the Committee put main emphasis on participation in charting THE HEALTH RD&I STRATEGY 2015-2020. The Committee acted in the advisory role for a task force that had been set up at the Academy of Sciences and supervised by Kitty Kubo. By beginning of 2015 the strategy document was finalised and approved by many decision-making bodies. One of the activities contemplated in the strategy was establishment with the Ministry of the Social Affairs of the Health Research, Development and Innovation Council. In February 2016, the Ministry informed the Committee that the Health RD&I Council had been set up and the first meeting convened. Hopefully the Committee will be an efficient cooperation partner to the Council.

COUNCIL FOR ESTONIAN CENTRES OF EXCELLENCE IN RESEARCH

Set up in 2012

Chairman Jüri Engelbrecht, Member of Academy

In 2015, the second programme period of Estonian Centres of Excellence in Research came to an end. The programme was financed from European Structural Funds. It is the last report of the outgoing Council, so here is the list of those 12 Centres of Excellence whose heads comprised the Council:

- Frontiers in Biodiversity Research Centre of Excellence in (M.Zobel)
- Centre of Excellence in Genomics (M.Remm)
- Centre of Translational Medicine (E.Vasar)
- Estonian Excellence in Computer Science (T.Uustalu)

- Centre of Excellence in Chemical Biology (T.Tenson)
- Centre of Excellence in Cultural Theory (V.Lang)
- Centre for Integrated Electronic Systems and Biomedical Engineering (R.Ubar)
- Centre of Excellence in Environmental Adaptations (Ü.Niinemets)
- Mesosystems – Theory and Applications (V.Hižnjakov)
- High-Technology Materials for Sustainable Development (E.Lust)
- Dark Matter in (Astro) Particle Physics and Cosmology (M.Raidal)
- Centre for Nonlinear Studies (J.Engelbrecht)

In the last reporting year the centres of excellence focussed on composing their final reports. The financial statements required ultimate precision in every detail, e.g. in substantiating the mission expenses, in documenting calculations for paid annual leave, in authenticating the validity of public procurement processes. As regards the essential results, the implementation unit has not yet advised us (by February 2016) how the outcome is to be summarised. The general opinion is that listing of formal indicators would surely be insufficient.

The Council participated actively in the working group preparing a new REGULATION ON CENTRES OF EXCELLENCE, together with officials of Ministry of Education and Research. M.Zobel was in charge of the task, V.Lang, J.Engelbrecht were members, also E.Nõmmiste and E.Mellikov as representatives of Centres of Excellence. The recommendations of the Council had been presented to the working group in 2014 (see Estonian Academy of Sciences Year Book 2014). Ministry of Education and Research Regulation FUNDING OF CENTRES OF EXCELLENCE TO IMPROVE THE INTERNATIONAL COMPETITIVENESS AND QUALITY OF R&D was adopted in April 2015. As recommended by the Council, the Regulation has set down the concept of research team; the research topic does not have to be rigidly linked to other available funding sources as stipulated earlier. The number of areas is linked to OECD Frascati Manual classifier. Although the Council had recommended *in-situ* visits in the second round of assessment, the new Regulation has dismissed that principle. Ministry of Education and Research referred to scarcity of time, to account for that shortage. Characteristically and traditionally, formal indicators are cherished as an ultimate value in Estonia: the Regulation sets the number of publications as the major goal of research activities.

A relevant requirement set by the new Regulation is popularisation of the research results. Even earlier the popular science magazine *Horisont* (Horizon) had published the review articles (2/2014, 4/2014, 6/2014 – see the previous Year Book) and pieces of writing (HIGGS BOSON STORY, 2013). The work done by the Centres of Excellence up to 2015 is described in review articles: about Centre of Excellence in Genomics (*Horisont*; 2/2015), about Centre of Excellence in Cultural Theory (*Horisont*; 4/2015); about Centre for Integrated

Electronic Systems and Biomedical Engineering (Tallinn University of Technology journal *Mente et Manu*, 7/2015) and in a book by the Centre for Nonlinear Studies (CHARM OF COMPLEXITY WORLD, 2015), as well as numerous talks and articles in current media to present all Centres of Excellence.

In a nutshell, the Council has advanced a number of principles for promotion of excellence in research in Estonia (see the Academy Year Books 2012-2014) and has created prerequisites for public understanding for the societal importance of research quality. The research results call for a separate summary. It is planned to draw a summary at a joint meeting with the Centres of Excellence for the expired period, the recently selected new Centres and Board of the Academy, where a new Council is to be elected. The Board plans to hold that meeting in March 2016.

ACADEMY EVENTS

CONFERENCES

October 16 – the conference STRATEGIC RAW MATERIALS OF ESTONIA was jointly organised by the Estonian Academy of Sciences, University of Tartu, Tallinn University of Technology and Estonian University of Life Science. Among participants were rectors of the forementioned universities, Minister of Economic Affairs and Communications, Minister of the Environment, experts from the European Union, Sweden and Finland, chief executives of Estonian large companies – *Eesti Energia*, Port of Sillamäe, etc. The purpose of the conference was to initiate the process for preparing a modern and sustainable Earth resources policy. Secretary General Margus Lopp represented the Academy at the conference and gave a presentation on potential future developments for oil shale chemistry.

November 3 – ACADEMY RESEARCH PROFESSORS' CONFERENCE was held in the Peterson's Hall at Dorpat Conference Centre, Tartu. Three Research Professors, all elected in 2012, presented their final reports:

ETHNIC SEGREGATION IN LEISURE TIME ACTIVITY LOCATIONS

Rein Ahas

Opinion and comment – Hannes Palang, Tallinn University

PERSONALITY TRAITS, HEALTH AND WELL-BEING

Anu Realo

Opinion and comment – Maaja Vadi, University of Tartu

MOLECULAR MECHANISMS UNDERLYING NEURONAL ACTIVITY-REGULATED

GENE EXPRESSION

Tõnis Timmusk

Opinion and comment – Eero Vasar, Member of the Academy

December 15 – Academy Hall was the venue for the STUDENT RESEARCH PAPER CONTEST LAUREATES CONFERENCE and award ceremony. An opening speech was made by President Tarmo Soomere. The conference was moderated by chair of the jury Jaan Aarik.

In 2015 the prizes were awarded to 12 young authors whose papers had been chosen from among the total of 199 works submitted to the contest.

Presentations were given by:

MIHKEL MARTNA BETWEEN NATIONALISM AND INTERNATIONALISM: ADAPTION
SOCIALIST POLITICAL THOUGHT IN ESTONIA AT THE END OF THE 19TH
AND AT THE BEGINNING OF 20TH CENTURY

Timo Aava, University of Tartu

CONTROL A ROBOT VIA VEP USING EMOTIV EPOC

Anti Ingel, University of Tartu

MICROBIAL SYNTHESIS OF PATTERNED AND FUNCTIONALISED BIOMATERIALS
BY GENETIC ENGINEERING OF A NEW KOMAGATAEIBACTER STRAIN
PROFICIENT IN CELLULOSE PRODUCTION

Michael Florea, Imperial College London

EMBASSY OF NATURE IN THE CITY. TALLINN ZOO BOREALIUM

Riin Kersalu, Estonian Academy of Arts

SEMINARS

February 17 – KUMU Art Museum hosted the seminar-discussion dedicated to ART HISTORY IN ESTONIA. Presentations were given by Krista Kodres (National Science Prize Laureate 2015, Estonian Academy of Arts, Tallinn University) and Sirje Helme (Museum of Estonian Art, Estonian Academy of Arts). In her presentation ART, HISTORY AND KNOWLEDGE Krista Kodres spoke about the emergence of art history as an academic discipline in general, gave a more detailed insight into the beginning years of art history professorship in the Republic of Estonia and ideological problems of the soviet era. She finally addressed interdisciplinary developments in art history that are tightly intertwined with other phenomena of the contemporary society. Sirje Helme offered a broad based survey of the principal research-related activities together with their problems and developments in the Museum of Estonian Art. Her presentation MUSEUM AND RESEARCH covered core functions of the museum regarding its collections, archives, conservation, exhibition arrangement, technical art history, various international projects, editing an art history journal and communicating museology.

Member of the Academy Mart Kalm, the curator of the exhibition *KUNST-TÖÖSTUSKOOLIST KUNSTIAKADEEMIAKS (FROM STATE SCHOOL OF ARTS AND CRAFTS TO THE ACADEMY OF ARTS)* gave a tour of the exhibition enriched with inspiring commentaries.

March 17 – University of Tartu *Physicum* building was the venue for the seminar APPLICATIONS OF MODERN PHYSICS. Presentations included:

PHYSICS, BUILDING PHYSICS AND NEARLY ZERO-ENERGY BUILDINGS

Jarek Kurnitski, Professor, TUT Chair of Building Physics and Energy Efficiency

THE LARGEST RESEARCH INFRASTRUCTURES CURRENTLY UNDER
CONSTRUCTION IN EUROPE

Ergo Nõmmiste, Member of the Academy

SUPER-RESOLVED FLUORESCENCE MICROSCOPY: THE NOBEL PRIZE IN CHEMISTRY
2014 AND ITS 'ROOTS'

Jaak Kikas, Director of UT Institute of Physics, Professor

March 25 – In frames of their jointly organised event series the Estonian Academy of Sciences and Tallinn University of Technology held a SEMINAR dedicated to two focal topics: research funding (current status and reform propositions); the concept and implementation options of the Research Career Path model.

Research funding needs and opportunities in Estonia and reform propositions that had been prepared earlier this year were presented by Dr. Indrek Reimand, Deputy Secretary General, Ministry of Education and Research. Presentations on the concept of the Research Career Path in Estonia and elsewhere, its necessity, problems and challenges in implementation of the career path model were given by Professor Maaja Vadi (University of Tartu) and Member of the Academy, Professor Ülo Niinemets (Estonian University of Life Sciences). Associate Professor Triin Roosalu (Tallinn University) analysed options for creating a career path model that would actually guarantee equal opportunities for men and women in research.

MEETINGS-DISCUSSIONS

January 22 – JOINT SEMINAR AND DISCUSSION organised by the Board of the Academy and the Estonian Research Council was held on the premises of the ETAg's office in Tartu. Among participants were representatives of the Ministry of Education and Research. President Tarmo Soomere gave a presentation ACADEMY OF SCIENCES – BOTTOMED UPON THE PAST, LOOKING TOWARDS THE FUTURE examining the development directions and core activity areas of the Academy. The following discussion approached collaboration opportunities between the Academy and ETAg.

February 20 – Academy House was the venue for a meeting of the academic community with representatives of those political parties who had submitted their list of candidates for the 2015 Riigikogu Elections in all electoral districts. The meeting was organised by the Estonian Academy of Sciences to provide a forum for discussion and debate on various options for enhancement of Estonian competitiveness and feasible ideas for promoting research ja culture in Estonia.

Participants in the debate were: Imre Mürk – Conservative People's Party of Estonia, Mart Meri – Social Democratic Party, Urmas Sutrop – Estonian Reform Party, Liisa-Ly Pakosta – Pro Patria and Res Publica Union, Margus Maidla – Estonian Free Party and Aadu Must – Estonian Centre Party. The academic community was represented in the debate by Ülle Jaakma – Vice-

Rector of Research, Estonian University of Life Sciences, Mart Kalm – Vice Rector of Research, Estonian Academy of Arts, Marco Kirm – Vice Rector for Research, University of Tartu, Katrin Niglas – Vice-Rector for Research, Tallinn University, Margus Pärtlas – Vice Rector for Academic Affairs and Research, Estonian Academy of Music and Theatre, Andres Koppel – Head, Estonian Research Council, Indrek Reimand – Deputy Secretary General for Higher Education and Research, Ministry of Education and Research and Taivo Raud – Head of Research Policy Department, Ministry of Education and Research. The debate was moderated by Indrek Treufeldt (Journalist, Estonian Public Broadcasting) and Margus Lopp (Secretary General, Estonian Academy of Sciences).

The debate was opened by President of the Academy Tarmo Soomere. Representatives of the parties in turn concisely presented their basic positions and possible development scenarios. The focal points of discussion included participatory democracy and social contract, science communication, identifying core competencies necessary for Estonia, academic career opportunities and the state procurement system. Other topical questions addressed by the debaters were: symptoms of swelling bureaucracy, coherence between the research community and parliamentary bodies and options for improving strategic competence in the *Riigikogu*, equal treatment of universities in public law, enhancing the operational efficiency and altering the functions of the Estonian Development Fund (*Arengufond*).

May 6 – Pärnu County Government was this year's host of the traditional ACADEMY SCIENCE DAY (17th). The welcoming address was delivered by County Governor Kalev Kaljuste, who also talked about the County in general, bringing out the facts and figures of major significance. President Tarmo Soomere gave a survey about the role and activities of the Academy. The main programme comprised three presentations by Members of the Academy: Toomas Asser A STROKE – BOTH PREVENTABLE AND CURABLE, Tarmo Soomere ESTONIAN COASTS: SURVIVING OR SINKING? and Urmas Varblane DEBT CRISIS AND THE FUTURE OF EUROPE. At the end of the day, the delegation of the Academy visited the MS Balti Trafo OÜ at Vändra and Carl Robert Jakobson Farmstead Museum at Kurgja.

May 12 – Members of the Estonian Learned Society in Sweden visited the Academy to inform themselves about the activities of the Estonian Academy of Sciences and speak about the doings of their Society. The delegation was headed by Chairman of the Society Ants Anderson. Brief reports were presented by President Tarmo Soomere, Secretary General Margus Lopp and Member of the Board Jüri Engelbrecht.

October 7 – Follow-up event of the SCIENCE DAY at Võru Gymnasium under the title LANGUAGE OF PLANTS was held jointly by the Academy and the Department

of Education and Social Services of Võru County Government. Member of the Academy Ülo Niinemets spoke on the topic HOW PLANTS CONVERSE (AMONG OTHER THINGS, WHAT THEY TALK ABOUT AND WHY). The following presentations were delivered by his doctoral students: Linda-Liisa Veromann CARBON DIOXIDE MIGRATION PATHWAYS INSIDE THE LEAF and Liisa Kübarsepp EFFECTS OF CLIMATE CHANGE – MOISTURE-DEFICIENT PLANTS AND HUNGRY PEOPLE. The SCIENCE DAY was also attended by Member of the Academy Toomas Asser, Head of the Division of Biology, Geology and Chemistry. Director Karmo Kurvits gave a broad overview of the newly established state gymnasium. In his closing comments, County Governor Andres Kõiv expressed hope for ongoing cooperation between the County and the Academy.

November 2 – University of Tartu Library hosted a MEETING AND DISCUSSION organised by the Estonian Academy of Sciences together with its associated scholarly organisations involved in the humanities-related disciplines. The meeting addressed current priorities in the activities of the Academy and joint discussion of possible developments in cooperation. Among organisations represented at the meeting were: Society of Estonian Areal Studies, Mother Tongue Society, Estonian Association of the History and Philosophy of Science, Estonian Literary Society, Learned Estonian Society, Estonian Musiological Society, Estonian Semiotics Association and Estonian Society for the Study of Religion. Each representative presented a short report about the activity of the corresponding organisation. Discussions were moderated by Member of the Academy Karl Pajusalu.

November 18 – For the second time, the Academy together with the Department of Education and Social Services of the Võru County Government held a SCIENCE DAY aimed at high school students of Võru County, this time under the title OUR HEALTH AND HEALTH CARE. The target audience was formed of young people interested in the topic, but also teachers and local government specialists. Presentations were given by Member of the Academy Toomas Asser, Head of the Nerve Clinic at Tartu University Hospital; Mart Einasto, Executive Board Member of Tartu University Hospital; Arvi Vask, Management Board Member of South-Estonian Hospital and Liis Sabre, Neurologist, Tartu University Hospital.

December 7 – Academy together with its associated organisations involved in natural science and engineering held a MEETING AND DISCUSSION on the premises of the Estonian Naturalists' Society in Tartu. Short reports about their organisations were delivered by representatives of the Estonian Naturalists' Society, Estonian Geographical Society, Estonian Physical Society, Estonian Association of Engineers, Estonian Biochemical Society and Estonian Society of Human Genetics. Further discussions addressed possible options to spur cooperation between the Academy and the associated organisations. Discussions were moderated by Member of the Academy Ülo Niinemets.

PUBLIC ACADEMIC LECTURE



September 29

Urmas Kõljalg

WILDLIFE SPECIES IN THE DIGITAL WORLD

Venue: Estonian University of Life Sciences Assembly Hall, Tartu

ACADEMY, MEDIA, SOCIETY

In 2015, the Estonian Academy of Sciences participated in a call for applications held within the national Science Communication Programme and succeeded in winning support for the project THE COURSE OF POPULARISING RESEARCH – THE COMPETITION OF THREE-MINUTE LECTURES. The project provided the young generation of researchers with training opportunities (short courses) for concise communication of their research and with an intense, precisely focussed experience for public talk. For the purpose of attracting the widest possible audience, the editorial board of educational programmes of the Estonian Public Broadcasting (ERR) and the science web portal *Novaator* had been brought into the project.

The festive finale to the contest – the GALA EVENING of the three-minute lectures – was held on the EUROPEAN RESEARCHERS' NIGHT (September 25, 2015). Juries of six public universities had previously singled out 15 local winners to compete at the finale. The young contestants were to accommodate their talk within a three-minute presentation, choosing an attractive format that would disclose the essence and importance of their research to the broad target group. The contest jury selected six final winners who were awarded the prize – the right to have their video-clips on air in the Estonian TV.

President of the Academy Tarmo Soomere chaired the contest jury, assisted by Vice-President Mart Kalm, Laine Randjärv, Riina Rõõmus and Juku-Kalle Raid as the jury members. The Evening was moderated by Margus Maidla.

Winners (alphabetically):



Maria Fomitšenko
(Tallinn University of Technology, doctoral student of chemistry and gene engineering),



Elisabeth Hõbesalu
(Estonian Academy of Music and Theatre, master student of musicology),



Uku Lember
(Tallinn University, researcher in history),



Hanna Moor
(University of Tartu,
doctoral student of genetics),



Andres Toode
(Estonian Academy of Arts, doctoral student of
national heritage protection and conservation),



Ronald Väli
(University of Tartu, doctoral student of
electrochemistry).

The series of winning lectures RESEARCH IN THREE MINUTES was on air in the national ETV channel mornings of December 7-12; in the national ETV2 channel the series was shown during evening prime time of December 1-17. By reference to a TV audience survey by TNS Emor and ERR server statistics, the series was watched on ETV channel by an average of 23,000 people per minute. Altogether 100,000 persons, i.e. 8.2% of Estonian population aged over 4, watched at least one lecture of the series from beginning to end. The clips can also be watched post-date in the portal novaator.err.ee and on the ETV website.

MORNINGS AND AFTERNOONS WITH SCIENCE

In spring the Academy launched a series of meetings, intending to bring together, in the academically relaxed and inspiring atmosphere (in the MORNING COFFEE or SCIENCE AFTERNOON format) the representatives of media, various academic circles, social and political stakeholders – to interact on matters essential in the society. The general subject of the meetings could be defined as SCIENCE AND SOCIETY; the main goal is to find common ground within the broad integrated picture. There were four meetings held in 2015.

May 15 – Academy hosted the first SCIENCE MORNING – morning coffee with exchange of thoughts on the MEDIA EXPECTATIONS TO THE ACADEMY, attended by the Academy leaders, journalists of the Estonian Public Broadcasting (ERR), representatives of ministries, Estonian Research Council, a Centre of Research and Innovation Communication of Tallinn University, Estonian Chamber of Culture.

June 16 – Academy hosted a SCIENCE AFTERNOON and raised the question THE FIRST WORLD WAR OR THE ESTONIAN WAR OF INDEPENDENCE: WHICH OF THEM BROUGHT INDEPENDENCE TO US? Member of Academy Tõnu Tannberg and Associate Professor Ago Pajur of the University of Tartu exchanged views; Vice-President of Academy Mart Kalm moderated the discussion.

October 30 – Academy hosted a SCIENCE MORNING exploring the problem WHY THIS SUMMER WAS AS IT WAS? Foreign Member of Academy Steven R. Bishop opened the event. He formulated the importance of cooperation between the academia and media, in order to achieve a proper balance between being independent and being informed in the most essential and knowledge-based meaning. The introduction into the main topic was made by President of the Academy Tarmo Soomere, Professor Sirje Keevallik and Associate Professor Ain Kallis continued.

December 4 – Academy hosted a SCIENCE AFTERNOON: THINKING OF MINERAL RESOURCES (INCL. MATHEMATICALLY). Professor Volli Kalm (Rector, University of Tartu) offered an insight into the topic; a discussion followed with active participation of Dr. Erik Puura (Vice-Rector for Development, University of Tartu), Professor Alvar Soesoo (Chair of Physical Geology, Tallinn University of Technology), Professor Emeritus Leo Võhandu (Institute of Informatics, Tallinn University of Technology). Secretary General of the Academy Margus Lopp moderated.

NEW MEDIA

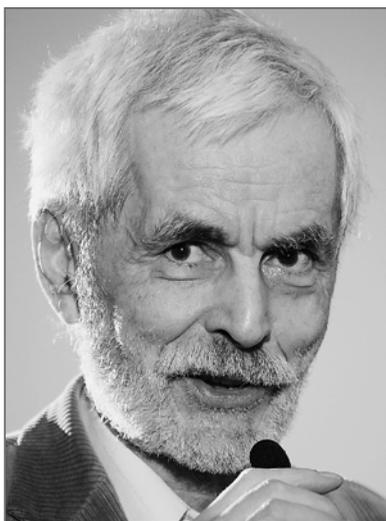
With the aim of raising the visibility of the Academy and improving the efficiency of communication, tools of the so-called new media were taken to use in 2015. At the beginning of the year, the web-based journal/diary of the Academy was created: www.akadeemia.ee/et/blog/, in order to consolidate, in a compact format, the web links on the activities of the Academy. According to statistics of the Academy website, the journal holds the second place by readability, after the membership module.

The Academy Facebook page: www.facebook.com/teadusteakadeemia was launched at the beginning of February, in order to reach the public aside the regular audience – namely the habitual users of the social media environment. The circle of those interested and permanent followers is steadily widening, attaining approximately 400. Depending on content and appeal of the mailings, the social scope of information may range from a couple of hundred to several thousand per week.

ACADEMY MEDALS, AWARDS

MEMORIAL MEDALS OF THE ACADEMY

In 2015 the Board of the Estonian Academy of Sciences decided to confer



the Karl Ernst von Baer Medal on
Member of the Academy
Richard Villems

The medal was handed over during the General Assembly Meeting on December 2.

PRESENTATION SPEECH AT CONFERRAL OF THE K.E.v.BAER MEDAL

President Tarmo Soomere

Today we have the pleasure of handing over the Estonian Academy of Sciences Karl Ernst von Baer Medal. The medal is actually a token of appreciation with a very long and meaningful and yet somewhat ambiguous history. In a way, it offers a pertinent reflection on the windings and turnings characterising the interwoven nature of Russian and Estonian science, that is to say that this medal has been established time and again under the same name.

The medal in combination with the same named prize was first created by the Imperial Academy of Sciences in St. Petersburg as early as 1864 and the fact

that it happened in the lifetime of Karl Ernst von Baer is in itself a little out of the ordinary. The medal was meant to mark 50 years from starting his scientific career and was issued in three categories: gold, silver and bronze. The number of bronze medals was greater than a thousand. Anyone who was able to donate three roubles for the prize got a bronze medal. The number of donators amounted to 977 individuals even though three roubles was quite a substantial sum of money in 1864. The Baer gold medal was regarded the highest award of Russia in the area of biology. It was conferred until World War I, finally in 1919, once every three years, mostly on one person, rarely two, on a single occasion three as well – giving the total of 27 persons. Among recipients of the gold medal we can find quite a few outstanding scientists who are very closely related to Estonia, e.g. botanist Edmund Russow, zoologist and explorer Alexander von Bunge, physiologist and anatomist Friedrich Heinrich Bidder, biogeographer and zoologist Alexander Middendorf. The medal has been earned thrice only by one person – Ilya Mechnikov, Nobel Laureate in 1908.

Discontinued after World War I, the decoration made its second appearance in 1976 under the name of Karl Ernst von Baer Memorial Medal. It was established by the Academy of Sciences of that time Estonian SSR in the series of events to mark the 100th anniversary of von Baer's birth. The idea behind the reward was slightly different than on the earlier occasion. It was not confined to pure biology any more – recognition was given on a broader basis for outstanding achievements in natural sciences and nature conservation as well as notable contributions to exploring the scientific legacy of Baer himself, historical studies in natural sciences, but also for communicating natural sciences to the public. Medals were granted by the Estonian Academy of Sciences. From the total of 150 medals, 22 were bestowed on Members of the Academy – the resultant ratio 1 : 7 is perfectly agreeable as it indicates that the Academy is not to blame for major abuse of the award. The range of awardees was considerably wide: among others was, for instance, that time First Secretary of the Estonian Communist Party Rakvere District Committee. I prefer to leave the name unmentioned, in fact, a really great person. Likewise, First Deputy Chairman of the Executive Committee of Tartu City Council of People's Deputies as well as a large number of foreigners. The medal was finally conferred on the 200th birth anniversary of K.E. von Baer in 1992. On this occasion, the list of recipients reveals familiar names like Loit Reintam and Richard Villems. The following brief comments are going to dwell a little longer on one of them at the least.

The Academy determined to revive the Karl Ernst von Baer medal in 2006. According to the current statutes, the medal is granted as the highest award of the Academy with frequency of no more than once every four years to an Estonian scientist in recognition of distinguished achievement in any branch of life and earth science. A significant aspect regarding the Academy's schedule of activities in the next year is the requirement that the awardee gives a speech

at the General Assembly meeting or a public academic lecture within the next year after conferral of the award. I seriously doubt that the recipients themselves have carefully read through the statutes. They might have forgotten this detail, but it will be their problem, not the Academy's. The Academy is determined to relish this lecture, they are going to deliver. This medal has been granted twice before: in 2007 to Loit Reintam, *Professor Emeritus* of the Estonian University of Life Sciences and Member of the Academy in soil science; in 2011 to Ülo Mander, Professor of Physical Geography and Landscape Ecology at the University of Tartu.

At this point, I would like to refer to Section 30 of the Board Meeting Minutes No.8 of November 3, 2015 about granting of the Karl Ernst von Baer Memorial Medal. It says, "After discussing the position on the potential nominee for the Karl Ernst von Baer Memorial Medal presented by the Division of Biology, Geology and Chemistry, the Board of the Estonian Academy of Sciences resolves to bestow the aforementioned medal for distinguished scientific contribution to developing the Estonian School of Molecular Biology and for achievements in the area of population genetics to Member of the Academy Richard Villems." In view of the fact that Richard Villems is receiving the Baer Medal already for the second time, we have good reasons to say that following in the footsteps of Ilya Mechnikov, he is just one step away from the Nobel Prize.

MEDAL ACCEPTANCE SPEECH

Richard Villems

I am very touched and delighted to receive this award. I would like to take a cursory look at the history of my contacts with Karl Ernst von Baer. The very first connection between us emerged somewhere during my first year at the university or maybe in the first term of the second year, when we were given lectures on histology and while our that time professor was explaining to us the formation of the spinal cord in the embryonic stage by making use of a blackboard cleaning cloth and a piece of chalk. It was Kalju Pöldvere, who was one of the most brilliant lecturers at the time of my studies. The next occasion would be a definitely personal and close one. Although I cannot recall the exact date, I am positive that it happened in 1968, either during the final days of June or at the beginning of July. The sun was just starting to rise as we were coming from our medical faculty graduation party in a very cheerful mood. The Faculty of Medicine follows a well-established tradition of washing the head of von Baer with champagne once every year, because all the year long it has been attracting the ones who reside on the Dome Hill and are able to fly, leaving behind their physical traces. Due to having some mountaineering experience, I gained the great privilege of actually climbing to the top of the head and scrub it clean. It was a truly confidential hands-on contact with Baer. Afterwards, I used to pass by Baer on my way home in the evenings during time. Jaan Einasto

found me an office room on the first floor of the Struve's House and going home down the slope of Musumägi (Kissing Hill) I frequently moved past Baer and thought about Baer. Presently, over the last 20 years, I have been urged to educate him a little, since the evolution I am teaching, is 'evo-devo'. Baer is probably the one and only man of science related to Estonia, whose name has been retained in all recently published general textbooks on evolution. What am I teaching them? My primary focus is teaching recapitulation. I shall refrain from clarifying, although I'd rather do it, with pleasure. Baer is the history of science, but at the same time he is one of those exceptionally few people whose great discoveries, although dating back close to 200 years, are still steadily taught nowadays as they are plainly ingenious.

STUDENT RESEARCH PAPER PRIZES

The Academy received 199 works to the 2015 Student Research Paper Contest. The papers were examined by the contest jury including Jaan Aarik (Chair), and Georg Liidja (Vice Chair), Mati Karelson, Andres Metspalu, Lauri Mälksoo, Enn Tõugu, Jaan Undusk, Gennadi Vainikko, Urmas Varblane (members) and Tõnu-Andrus Tannberg (external expert). The panel decided to grant 12 prizes (á 400 Euro) to the following papers:

Timo Aava (University of Tartu) MA thesis MIHKEL MARTNA BETWEEN NATIONALISM AND INTERNATIONALISM: ADAPTION SOCIALIST POLITICAL THOUGHT IN ESTONIA AT THE END OF THE 19TH AND AT THE BEGINNING OF 20TH CENTURY;

Mari-Liis Altosaar (University of Tartu) MA thesis THE EFFECT OF FOREIGN WORK EXPERIENCE ON YOUNG RETURN MIGRANTS' DESIRED WAGES IN THE BALTIC STATES;

Jüri Bakhoff (Estonian National Defence College) graduate paper THE EFFECTS OF THE ATOMIC LAYER DEPOSITION ULTRATHIN FILM ON CLEANING GUNPARTS USING THE EXAMPLE OF MG3 BARREL BUSHING;

Michael Florea (Imperial College London) BSc thesis MICROBIAL SYNTHESIS OF PATTERNED AND FUNCTIONALISED BIOMATERIALS BY GENETIC ENGINEERING OF A NEW KOMAGATAEIBACTER STRAIN PROFICIENT IN CELLULOSE PRODUCTION;

Anti Ingel (University of Tartu) BSc thesis CONTROL A ROBOT VIA VEP USING EMOTIV EPOC;

Riin Kersalu (Estonian Academy of Arts) MA thesis EMBASSY OF NATURE IN THE CITY. TALLINN ZOO *BOREALIUM*;

Ivan Lavrentjev (Tallinn University) BA thesis THE 1993 NARVA REFERENDUM ON AUTONOMY: THE ORGANISATION AND THE FAILURE;

Piia Liigand (University of Tartu) MSc thesis EXPANDING THE ELECTROSPRAY IONISATION EFFICIENCY SCALE IN POSITIVE AND NEGATIVE MODE ESI;

Piret Mägi (Tallinn University of Technology) article RECYCLING OF PA-12 IN ADDITIVE MANUFACTURING AND THE IMPROVEMENT OF ITS MECHANICAL PROPERTIES;

Kaspar Märten (University of Tartu) MSc thesis ACCURATE GENOMIC PREDICTION OF HERITABLE TRAITS;

Keiu Paapsi (University of Tartu) MSc thesis THE QUALITY OF CHILDHOOD TUMOR DATA IN THE ESTONIAN CANCER REGISTRY;

Karin Zereen (Estonian University of Life Sciences) MSc thesis AUTHENTICATION OF ORGANICALLY GROWN TOMATOES (*SOLANUM LYCOPERSICUM L.*) USING MULTI-ELEMENT AND STABLE ISOTOPE ANALYSIS.

ESTONIAN ACADEMY OF SCIENCES FOUNDATION

The intent of the Estonian Academy of Sciences Foundation (set up with the Estonian National Culture Foundation in 2006) is to support research efforts of young Estonian scientists holding a doctorate. A special scholarship named after Tiit Talpsep has been granted since 2009 with the aim of forwarding the studies of graduate students in the field of molecular microbiology and virology.

Scholarships are awarded by the Board of Trustees comprising Members of the Academy Mart Ustav, Leo Mõtus, Jaan Ross and Peeter Saari.

2015 scholarships were conferred as follows:

Priit Vahter (University of Tartu, Senior Research Fellow in Innovation Economics), Young Scientist Scholarship (2,225 EUR);

Sirle Saul (University of Tartu), Tiit Talpsep Graduate Student Scholarship (1,000 EUR).

ESTONIAN SCIENCE COMMUNICATION AWARD

The Estonian Science Communication Award is an annual state award that has been granted since 2006 for science communication activities aimed at Estonian audience. Funded by the Ministry of Education and Research, prizes are jointly awarded by the ministry, the Estonian Academy of Sciences and the Estonian Research Council. The competition was held in 2015 for the tenth year.

The Appraisal Panel chaired by a Member of the Academy Enn Tõugu reached a decision not to award this year's motivation prizes in the categories POPULARISING SCIENCE AND TECHNOLOGY THROUGH AUDIOVISUAL AND ELECTRONIC MEDIA and POPULARISING SCIENCE AND TECHNOLOGY THROUGH THE WRITTEN WORD. The unawarded prize money was reallocated to additional motivation prizes in the categories: ACTIONS/SERIES OF ACTIONS FOR COMMUNICATION OF SCIENCE AND TECHNOLOGY and BEST INNOVATIVE ACTION POPULARISING SCIENCE AND TECHNOLOGY.

Monetary prizes were awarded in six categories:

Tiiu Sild Memorial Lifetime Achievement Award for long-time systematic communication of science and technology

Mare Ruusalepp, long-time popularisation of astronomy in Estonia;

In the category SCIENCE AND TECHNOLOGY COMMUNICATION VIA AUDIOVISUAL AND ELECTRONIC MEDIA

- Grand Prize: Broad-based and professional covering of science topics and researchers' achievements and presenting them to the public, ERR Novaator, responsible editor Marju Himma-Kadakas;

In the category SCIENCE AND TECHNOLOGY COMMUNICATION VIA PRINTED MEDIA

- Grand Prize: 50 years dedicated to popularising science, focused on presenting researchers and bridging the gap between science and the humanities, science magazine *Horisont* (Horizon), Indrek Rohtmets, editor-in-chief of the magazine and board member of the publisher NGO *Loodusajakiri*, Kärt Jänes-Kapp (posthumously), long-time editor of the magazine, plus its editor-in-chief and managing editor;

In the category ACTIVITIES/SERIES OF ACTIVITIES COMMUNICATING SCIENCE AND TECHNOLOGY

- Grand Prize: Thoughtfully prepared and far-reaching communication of the results from the European Social Survey, project EUROPEAN SOCIAL SURVEY IN ESTONIA, project manager Mare Ainsaar;
- Motivation Prize: presenting and communicating robotics and other engineering specialties to young people in workshops run by Tallinn University of Technology Robotics Club, NGO TUT Robotics Club, board member Sigrid Münter;

- Motivation Prize: Activities performed within the frame of a project for communicating science, integrating science in the humanities and presenting cultural heritage in broader sense, technical investigation and conservation project *RODE ALTAR LÄHIVAATES* (RODE ALTARPIECE IN CLOSE-UP) of the Niguliste Museum (branch of the Art Museum of Estonia), project coordinator Hilkka Hiip;

In the category BEST RESEARCHER, JOURNALIST, TEACHER COMMUNICATING SCIENCE AND TECHNOLOGY

- Grand Prize: Ave Vitsut (teacher at Viljandi Gymnasium) – for organising the First Festival for Science Theatres of Estonian Schools and for spreading scientific worldview among students as well as their teachers;
- Motivation Prize: Ylle Rajasaar (producer) – long-time popularising of environmental and science issues, plus notable contribution to developing the science programme *RAKETT 69* (ROCKET 69) for young people;

In the category BEST NEW SCIENCE AND TECHNOLOGY COMMUNICATION INITIATIVE

- Grand Prize: science competition *TEADUSLAHING* (SCIENCE BATTLE) targeted at young people – for initiating and arranging the competition, project coordinator Kristi Parro;
- Motivation Prize: series of events *GARAGE48 HARDWARE & ARTS* – for organising events that have encouraged cooperation and application of new technologies in areas and among target groups that had been nothing but scarcely addressed thus far, organisers Alvo Aabloo, Anu Piirisild, Indrek Rebane, Priit Salumaa;
- Motivation Prize: NGO *Taibukate Teaduskool* (SCIENCE SCHOOL FOR THE SMART) – advancing competencies of students in science and technology and popularising these areas among young people in Viljandi County, CEO Lilian Tambek.

The total amount of the competition's prize money in 2015 was 21,500 EUR. The Lifetime Achievement Award was worth 6,500 EUR and accompanied by Stanislav Netchvolodov's brass tabletop sculpture Mobius strip. The winners in every other category were granted: Grand Prize – 2,200 EUR and Motivation Prize – 800 EUR. All prize recipients are entitled to use the Nationally Recognised Science Communicator logo image.

Results of the competition were announced and prizes were handed over during the collaboration conference *MIDA ÜKS EI VÕI, SEDA ÜHEKSA VÕIVAD* (WHAT IS BEYOND THE REACH OF ONE, IS EASILY ACHIEVABLE FOR NINE) held in the Glass Hall of Tallinn Song Festival Grounds on November 19.

PUBLICATIONS OF THE ACADEMY

Books published by the Academy in 2015:

- ESTONIAN ACADEMY OF SCIENCES YEAR BOOK XX (47) in Estonian and English.
- *EESTI VABARIIGI PREEMIA 2015* (AWARDS OF THE REPUBLIC OF ESTONIA) – compiled articles presenting recipients of the Science, Culture and Sports Awards and the F.J.Wiedemann Language Prize through brief biographical sketches and reflections of their major achievements – brought together into one book.

Electronic versions of all the publications are available at www.akadeemia.ee.

INTERNATIONAL SCIENTIFIC RELATIONS

The Estonian Academy of Sciences represents Estonia in several INTERNATIONAL SCIENTIFIC ORGANISATIONS bringing together science community on cross-specialty issues at the level of top researchers and science policy makers.

The European Academies' Science Advisory Council (EASAC; www.easac.eu) unites the national science academies of the EU member states, enabling their collaboration in building science into EU policy. The Estonian Academy of Sciences has nominated Secretary General Margus Lopp to EASAC Council. EASAC's work on independent science-based advice for policy-makers is performed within three programmes: Biosciences, Energy and Environment. Each of them is run by a Steering Panel. Chairman of the Academy Committee on Marine Sciences, President of the Academy Tarmo Soomere is a member of the Environment Steering Panel. He is also the contact person between the Panel and the European Marine Board contributing towards harmonisation of their activities and exchange of information between them. Enn Lust represents the Academy in the Energy Steering Panel.

Expert groups formed pursuant to proposals by the academies analyse the topics (incl. EU document drafts) that have been selected by the panels. The resulting reports forecast trends and potential implications of these trends on the society, aiming to incline policy-makers towards evidence-based decisions. A recent example of such a report addressing key questions and challenges regarding a specific discipline, is MARINE SUSTAINABILITY IN AN AGE OF CHANGING OCEANS AND SEAS prepared by EASAC in collaboration with the Joint Research Centre of the European Commission in Ispra, Italy and EMB experts. The report singles out as the greatest priority the requirement to translate the existing knowledge on the functioning of marine ecosystems from theory to practice and to integrate that knowledge into the policy making process. Tarmo Soomere was among co-authors of the report. Full text is available at www.easac.eu/fileadmin/PDF_s/reports_statements/MarSus_Web_file_final.pdf.

To advance national interests and objectives, more Estonian experts should participate in the working groups. Regrettably the Academy cannot afford to subsidise such assignments.

The European Federation of Academies of Sciences and Humanities (ALL European Academies, ALLEA; www.allea.org) brings together scientific academies from more than 40 European countries (Estonian Academy of Sciences is a founding member from 1994). ALLEA focuses on key issues

in science strategy and policy (incl. research career path, integrity of science and different autonomy facets of research institutions, copyright, open access to research data and digitisation problems, science education, etc.). ALLEA's policy work is assisted by several Permanent Working Groups and *ad hoc* Task Forces. Raivo Uiibo is a Member in ALLEA Permanent Working Group on Science and Ethics.

EASAC and ALLEA together with their partner organisations (*Academia Europaea*, FEAM and EuroCASE) signed a Memorandum of Understanding to strengthen interacademy cooperation in Europe for providing independent, scientific evidence-based policy advice in numerous fields. The initial idea concerning collaboration was suggested by the former ALLEA President Jüri Engelbrecht.

The long transformation process of the European Science Foundation (ESF; www.esf.org) was completed by the end of 2015. The Academy had withdrawn from the ESF back in 2012. However, we continue as a member in two organisations that were formerly under the ESF umbrella, but fully independent now – European Marine Board (EMB; www.marineboard.eu) and European Polar Board (EPB; www.europeanpolarboard.org).

The Estonian Academy of Sciences had been invited to participate as a founding member in the establishment of the European Marine Board's legal entity as an international non-profit association in January 2016. EMB is an independent non-governmental advisory body whose primary mission is to advance cooperation in marine sciences across Europe and to bridge the gap between science and policy. EMB's principal partner and stakeholder in science policy is the European Commission. The priority goals include designing marine science-policy agenda by identifying new challenges and opportunities, consolidating efforts into collective actions and translating proactive competencies into practice in order to bring European marine research to the forefront of the marine science arena worldwide. EMB *provides a platform for its member organisations* (35 institutions from 18 countries) *to develop common priorities and shape science policy, both at national and EC level*. President of the Academy Tarmo Soomere is one of the eight EMB founding directors and continues as Vice-Chair.

Mandated by four Estonian institutions holding natural science collections (University of Tartu, Estonian University of Life Sciences, Tallinn University of Technology and Estonian Museum of Natural History), the Academy has entered the Consortium of European Taxonomic Facilities (CETAF; www.cetaf.org). Chairman of the Academy Committee on Phylogeny and Taxonomy Urmas Kõljalg is responsible for coordination of national activities.

The *Union Académique Internationale* (UAI; www.uai-iaa.org) unites academies engaged in the so-called soft sciences, mostly the humanities. In 2015

Member of the Academy Jaan Undusk engaged in the activities of the UAI at the request of the Academy.

The Academy also takes part in the work of several other worldwide scientific organisations, such as International Council for Science (ICSU; www.icsu.org), a global network of science academies IAP (www.interacademies.net), etc. Quite a few Members of the Academy belong to the membership of international science academies and participate in their work. For example, Jüri Engelbrecht sits on the Board of Trustees of the World Academy of Art and Science (WAAS). WAAS approaches relations and values that pertain the entire society as well as global (incl. societal) problems affecting the development of mankind.

The Academy continued supporting the contacts of the Estonian scientific community with international scientific unions, whose mission is to provide a forum, synergy, strategy and voice in their areas of knowledge. The Academy gives priority to ICSU member organisations. By means of a targeted allocation from the Ministry of Education and Research, the Academy organised payment of membership fees and supplied the Ministry with a review on the activities of respective national contact organisations (see the list in Appendix 1, p.204). Cooperation activities exercised under the auspices of scientific unions are intertwined with collaborative projects within EU FPs. The first-mentioned component quite frequently helps to create the environment and preconditions for constructive preparation of a collaborative research project. Vigorous activities of Estonian representatives in European and worldwide scientific organisations lead to greater visibility and effective image building. On the other hand, they secure the Estonian research community with a gateway to decision-making processes at the European level and, likewise, give them access to international discussion forums with scientific approaches to issues vital for Estonia.

The Estonian Academy of Sciences, similarly to multiple other European academies, supports and finances international mobility of researchers through a SCIENTIFIC EXCHANGE PROGRAMME. Bilateral cooperation agreements (full list of partners is presented in Appendix 2, p.207) serve as the formal basis for exchange of scientists. President Tarmo Soomere visited the Bulgarian Academy of Sciences in June. In frames of their meetings the Presidents of the Academies signed a new Annex to the cooperation agreement, specifying the forms and conditions of cooperation for the next period (2015-2017). Within the programme of the 14TH BALTIC CONFERENCE ON INTELLECTUAL COOPERATION held in Riga and Jelgava (Latvia) in April, the Presidents of the Estonian, Latvian and Lithuanian Academies of Sciences signed a new Annex (Protocol) to the trilateral cooperation agreement that set the administrative and financial terms of cooperation for years 2015-2017. The renewal process of cooperation agreements was started with the Polish and Hungarian Academies of Sciences.

To this end, a call for joint research projects was initiated for scientists from Estonia and the partner countries for years 2016-2018. Negotiations on the projects to be implemented under the cooperation agreements are in the final phase. For more detail, see www.akadeemia.ee/en/international/.

The activity of the scientific exchange programme is supervised by the Council for International Exchanges, comprising of representatives of the Academy Divisions and four major public universities – University of Tartu, Tallinn University of Technology, Estonian University of Life Sciences and Tallinn University. The Academy acts on the traditional cost-sharing principle (living expenses in the host country are covered by the receiving party) and gives preference over individual research to reciprocal visits within bilaterally accepted joint projects. As a rule, the scientists to be nominated to the host Academy for funding are selected by the sending Academy.

The quantitative dimension of the exchanges remained largely unchanged by comparison with the previous year. General figures are the following. Estonian scientists and scholars made 61 (2014 – 57) study and conference visits in 2015, using a total of 420 (412) days. The total sum expended to cover the living expenses of visiting researchers was 19,221 EUR. The number of hosted scientists and scholars was 51 (49); the visitors worked at Estonian universities and research institutions for 358 (313) days in total. The average daily expenses were 53.69 (2014 – 49.60) EUR. Larger Estonian universities (University of Tartu, Tallinn University of Technology) upheld their position as the most frequent users of the exchange scheme in both directions (outbound from Estonia – inbound to Estonia); their collective share constituted about 58% of the visits.

Although the list of cooperation agreements currently includes 32 partner organisations (as of January 1, 2016), the exchange programme was in fact employed with about a dozen partners; the largest volume of visits was reached with Hungarian, Polish, Bulgarian, Czech and Latvian partners. At this point we should take into account the fact that the opportunities for researchers to apply for travel grants have significantly multiplied (FPs, programmes co-financed by Structural Funds, national mobility grants, etc.) by now.

The Academy encourages direct contacts of young scientists with top actors in the world of science. For that purpose the Academy has signed a trilateral cooperation agreement with the Council for the Lindau Nobel Laureate Meetings and the Foundation Lindau NOBELPRIZEWINNERS MEETING. The mission of annual forums that are organised in the small town of Lindau (Germany) is to educate, inspire and connect. While it is undeniably a meeting place for young talents (numbering around 500) the same can be said of the older generation, the real elite of the science world – Nobel Laureates (about twenty every year). In 2015 the Academy nominated Olesja Bondarenko (PhD) of the National Institute

of Chemical Physics and Biophysics to the 65TH NOBEL LAUREATE LINDAU INTERDISCIPLINARY MEETING, assembling scientists across the fields of physics, chemistry and medicine/physiology. In the autumn of 2015 the Academy advertised a call for participation in the 66th Lindau Meeting in Physics (in 2016) and presented the best candidates for evaluation by the selection panel of the Lindau Meetings Council. The Inter-Academy Partnership (IAP) organised an interactive seminar for talented young scientists in the programme of the 7TH WORLD SCIENCE FORUM (WSF) ENABLING POWER OF SCIENCE, held at the initiative of the Hungarian Academy of Sciences in collaboration with several international organisations in Budapest. The Estonian Academy of Sciences nominated Heli Lukner, Senior Research Fellow at the University of Tartu to participate in that event.

Representatives of the Academy traditionally visited other academies, attended scientific events, delivered lectures at international scientific forums as invited speakers, met with delegations visiting the Estonian Academy of Sciences, etc. For greater detail see Chronicle (pp.7-15).

Estonia is a natural part of the European Research Area. Under these conditions it is reasonable to lay emphasis on COOPERATION WITH THE EUROPEAN UNION INSTITUTIONS and on active participation in EU initiatives, programmes and projects.

In October 2015 the governing body of the European Research Council, the ERC Scientific Council, met at a plenary session in Tallinn at the invitation of the Academy. Member of the Academy Mart Saarma is one of the ERC Vice-Presidents. ERC mainly provides competition-based funding for excellent frontier research and first-rate researchers, regardless of their area of study. Receiving an ERC grant (four Estonian scientists have earned it to date) is a highly prestigious acknowledgement for a researcher, as the selection process is highly competitive and based on scientific competence as the key criterion. The two-day programme included regular panel discussions, a regional seminar aimed at introducing potential applicants with ERC funding opportunities (held at the Academy House) and various events enabling the ERC Scientific Council members and Executive Agency officers to meet the high level public authorities, policy-makers and scientific community of Estonia.

The Academy was for the tenth year in succession involved as a partner in the pan-European project series RESEARCHERS' NIGHT co-financed under the EU's research framework programmes (currently Horizon 2020) aimed at bringing researchers closer to the general public and promoting scientific careers. The crowning moment in this year programme was the GALA EVENING of the so-called THREE-MINUTE LECTURE COMPETITION. For greater detail see p.54.

The European Union strives to provide researchers with advantageous career opportunities, including support services for those seeking to advance their

careers by moving to another country. Together with the Estonian Research Council as the national coordinator and other partners (Archimedes Foundation, University of Tartu, Tallinn University of Technology, University of Life Sciences, Tallinn University, Estonian Academy of Arts and Tartu Observatory), the Academy participates in the EURAXESS Services network. EURAXESS – Researchers in Motion is an initiative of the European Commission, founded to advise relocating researchers and their family members on administrative and practical issues. Service centres offer information on a broad range of queries, e.g. visas, residence and work permits, research vacancies, social insurance, availability of medical aid, daily life utilities, etc. The European Commission assembles the network members for European trainings and conferences, attended among others by the foreign relations staff of the Academy. For greater detail, visit euraxess.ee.

INAUGURATION OF PRESIDENT OF THE ACADEMY

On January 28, inauguration of the President of the Academy Tarmo Soomere was held. The date has an historical meaning – the Estonian Academy of Sciences was established by Decree of the State Protector of Estonia on January 28, 1938.

The inauguration ceremony was opened by the former President of the Academy Richard Villems. President of the Republic of Estonia Toomas Hendrik Ilves took the floor for a greeting and placed the presidential chain of office on the new President.

President of the Academy Tarmo Soomere gave an inaugural speech. Minister of Education and Research Jevgeni Ossinovski and Chairman of Association Universities Estonia Volli Kalm delivered talks. Member of Academy, composer Arvo Pärt presented his musical felicitations. At the ceremonial reception, the audience was addressed by Minister of Culture Urve Tiidus and Foreign Member of Academy Steven R. Bishop, Professor of University College London.



Handshake of President of the Republic Toomas Hendrik Ilves and President of the Academy Tarmo Soomere

NATIONAL AWARDS **TO MEMBERS OF THE ACADEMY**

NATIONAL SCIENCE PRIZES

Based on nominations from the National Science Prize Committee, the Government of the Republic of Estonia by Order No.71 of February 12, 2015 conferred

SCIENCE PRIZE FOR OUTSTANDING ACHIEVEMENTS IN RESEARCH AND DEVELOPMENT



Jüri Engelbrecht

“... I have been truly fortunate in my life. At that time Tallinn Polytechnical Institute, the Chair of Building Materials was a superbly combined entity. Under the leadership of H.Laul and V.Kulbach it guaranteed a highly favourable starting position. The scientific thought rooted in the Institute of Cybernetics at the time of N.Alumäe has persisted up to the present day. ... it has been my privilege to coordinate the activities of this Academy over a

decade and be a stakeholder in managing the Academy during the following decade. While holding the office of ALLEA President, I frequently had the pleasure of meeting the Presidents of various European Academies of Sciences and there is no need to clarify the extent of mental potential accumulated in the academies worldwide. All the factors added together have given me a heartening experience, although life was not always a bed of roses.”

EESTI VABARIIGI PREEMIAD (NATIONAL AWARDS OF THE REPUBLIC OF ESTONIA), 2015

SCIENCE PRIZE FOR
OUTSTANDING ACHIEVEMENTS IN RESEARCH AND
DEVELOPMENT



Anto Raukas

“... I am convinced that the things that are yet undone have much greater significance than those already accomplished. It is of special importance with regard to lifetime achievement awards – I am pretty sure that every one of the laureates has got some needful engagements waiting to be finished. In the same way, now that I have myself received the award, it is obviously too early as a large part of all my intentions has not been fulfilled thus far ...”

EESTI VABARIIGI PREEMIAD (NATIONAL AWARDS OF THE REPUBLIC OF ESTONIA), 2015

ANNUAL AWARD
in exact sciences



Tarmo Uustalu
for series of studies
MATHEMATICAL STRUCTURES IN FUNCTIONAL PROGRAMMING.

**ESTONIAN STATE
DECORATIONS
TO MEMBERS OF THE
ACADEMY**

President of the Republic of Estonia
by Resolution No.576 of February 4, 2015
awarded

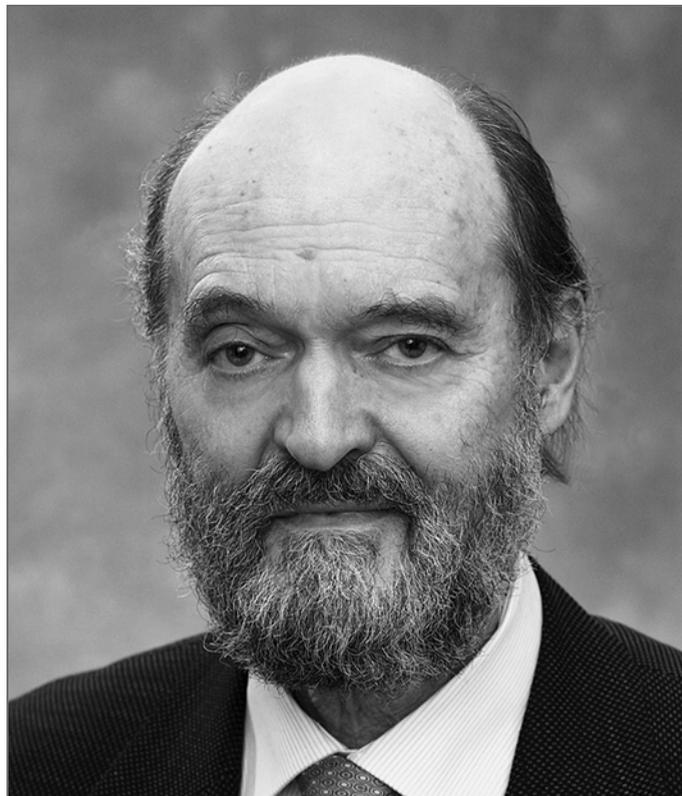
the Order of the White Star, 3rd class



Karl Pajusalu

ANNIVERSARIES

80



Arvo Pärt

Arvo Pärt was born on September 11, 1935 in Paide. He graduated from Rakvere Secondary School No.1 in 1954 and proceeded to study composition at Tallinn Music High School where his studies were interrupted by mandatory military service. In 1957 Arvo Pärt entered Tallinn State Conservatory to continue his musical studies in Heino Eller's composition class that were completed in 1963.

From 1958 to 1967 Arvo Pärt worked as a sound engineer at Estonian Radio. After that he took the self-employed road as a freelance composer. His early modernist compositions belong to this period. A lot of them can be viewed as brilliant experiments or testing the boundaries. However, regardless of the chosen styles or techniques, Pärt's early oeuvre is characterised by a punctual and powerful concept of dramaturgy, concentrated musical material and

elaborated form – elements that may well be regarded principal pillars of his musical thinking. Interestingly, Pärt was one of the most productive and highly valued composers for film in Estonia throughout the 1960s and 1970s.

The years from 1968 to 1976 witnessed a growing inner anxiety and crisis of the composer. He gave up all styles, techniques and means of expression used before and withdrew. In his new quest for self expression he turned even more intensively towards the early music and became absorbed studying Gregorian chant, the Notre Dame School and Renaissance polyphony. In 1976 he emerged with a new and highly original musical language which he called *tintinnabuli* (from *tintinnabulum* – Latin for ‘little bell’). Pärt has now been composing in his *tintinnabuli*-style for almost 40 years.

In 1980 Arvo Pärt with his family emigrated to Vienna and a year later they moved on to get settled in Berlin. He has continued composing since then without any longer breaks. Vocal compositions, often based on liturgical texts or other Christian prayers, comprise a large part of his oeuvre. It was also in Germany, where his lasting collaboration with the renowned ECM label, began. In 1984 his debut album was released under the ECM New Series title which brought Pärt to the world. His music was soon included in the programmes of many renowned festivals, orchestras and ensembles as well as television and radio broadcasts.

After Estonia regained its independence in 1991, the connections between Arvo Pärt and Estonia as well as its music scene were restored. During the last decade, he has rearranged approximately 50 of his earlier works and composed about 25 new pieces. Arvo Pärt has lived permanently in Estonia since 2010. The same year, on the initiative of Arvo and Nora Pärt, the Arvo Pärt Centre was established in Laulasmaa. In collaboration with the composer himself and his family, the APC aims to create and maintain the personal archive of the composer.

Several music academies and universities have conferred their honorary doctorate or honorary membership on Arvo Pärt. Albums with Arvo Pärt’s music have received a Grammy Award twice (2007, 2014) out of thirteen nominations. He has been recognised with multiple awards and distinctions, among others the Praemium Imperiale art prize by the Imperial family of Japan (2014). Arvo Pärt was elected a Member of the Estonian Academy of Sciences in 2011.

Arvo Pärt’s *oeuvre* has essentially broadened our perception of tonal and modal music in its widest sense. Broad audiences regardless of nationality, cultural background or age are touched and impressed by the timeless beauty, insightful eloquence and clarity conveyed in his music.



Anto Raukas

Anto Raukas was born on February 17, 1935 in Tartu to a school teacher's family. In 1953 he graduated from Hugo Treffner Gymnasium where he had created a regular sporting habit that helped him to achieve outstanding performance in several branches of athletics. Due to his wide range of interests he had considerable difficulty determining his subsequent educational path. Eventually he chose to study geology at the University of Tartu and completed the programme in 1958. In 1962 he defended his Candidate of Sciences (PhD) dissertation in Geology on the topic LITHOLOGY AND MINERALOGY OF BASAL MORAINES IN ESTONIAN SSR. In 1973 he earned his Doctor of Sciences degree in Geology and Mineralogy at the Estonian Academy of Sciences with a dissertation FORMATION OF GLACIOGENIC DEPOSITS AND LANDFORMS OF THE ESTONIAN SSR. Anto Raukas was elected a Member of the Estonian Academy of Sciences in 1977 and he was granted Professorship in 1980.

Since graduation from the University Anto Raukas has been associated with the Institute of Geology where he has held various positions, including long-

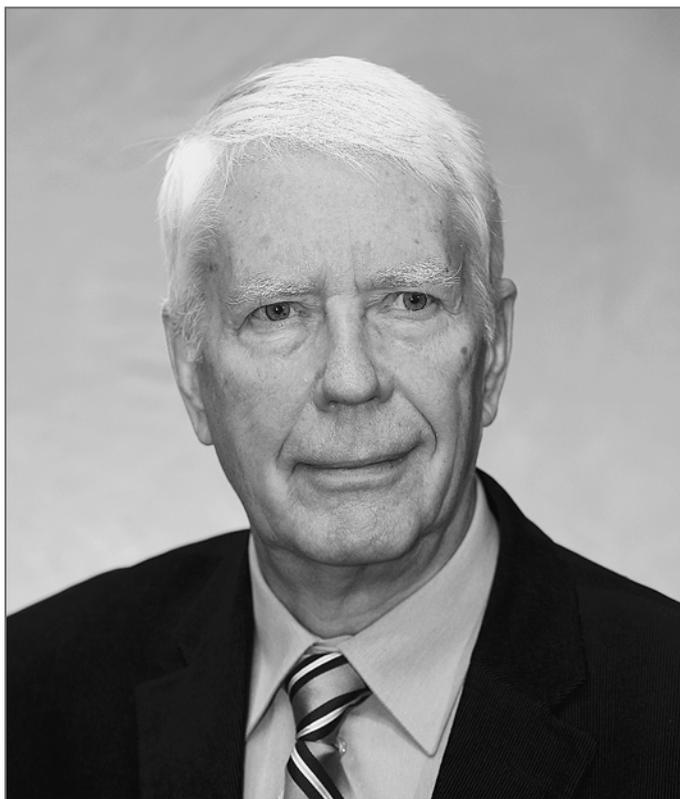
time Head of the Quaternary Geology Department (1965-2005), Director (1999-2001), Leading Research Associate (since 2008). During 1993-2009 he was also Professor at the Marine Academy. Currently, he works as part-time Senior Research Fellow at Tallinn University Institute of Ecology (School of Natural Sciences and Health). Anto Raukas is the author of 34 and editor of more than 120 books. He has published over 500 scientific articles, about 800 short articles, more than 200 meeting abstracts and over 800 popular science articles, essays, reviews, critics, etc. in press. His publications have appeared in about 30 countries. 15 PhD and 5 DSc dissertations have been defended under his supervision.

In the years of 1977-1989 Anto Raukas was a member of the Presidium of the Estonian Academy of Sciences, in 1982-1989 he was Academician-Secretary (Head) of the Academy's Division of Chemical, Geological and Biological Sciences. He has been Scientific Adviser to the Government of Estonia and Head of the Joint Jury for the Baltic Assembly Prizes. He is a regular or honorary member of various scientific organisations, sits on the editorial boards of several scholarly publications and takes part in the work of advisory councils and committees at a national and international level.

Anto Raukas has achieved influential outcomes in various areas of geological stud, incl. stratigraphy, lithology, mineralogy and Quaternary paleogeography, environmental geology and meteoritics. He has given special consideration to issues relating to the evolution of Quaternary sediments and landforms in glacial regions of Northern Europe, development of the Baltic Sea, geology of great lakes, meteorites, rational use and conservation of natural resources and protection of the environment in Estonia. He has participated in multiple scientific expeditions, among others the first Estonian young scientists' complex expedition to Kamchatka (1960) and the expedition to the Svalbard archipelago organised by the USSR Academy of Sciences Institute of Geography (1977), questions relating to building a nuclear station. He is involved in disputes related to global climate warming and he is an expected speaker in mass media.

His research contributions have been recognised with the National Science Prize on four occasions: annual awards in geo- and biosciences (1991, 1996, 2003) and the Outstanding Lifetime Achievement Award in research and development (2015). He has received the Karl Ernst von Baer Prize, Artur Luht Memorial Prize, Eerik Kumari Nature Conservation Prize, etc. He was awarded the Order of the White Star, 3rd class in 1998. He has also been named an Honorary Citizen of Tallinn and elected among 100 great Estonians of the 20th century.

The enviable vivacity characterising Anto Raukas in all his activities possibly stems from practising athletics and mountaineering that have been his favourite pastimes for long. His colleagues describe him as a cheerful, diplomatic and forthcoming person.



Enn Tõugu

Enn Tõugu was born on May 20, 1935 in Tallinn to a lawyer's family. The entire family was deported to Russia in 1941. His parents died there before the end of the war and in 1946 he was the only one to return home. In 1953 Enn Tõugu graduated from Tallinn Secondary School No. 20 and proceeded to study mechanical engineering at Tallinn University of Technology and completed the programme in 1958. While still in his undergraduate years, Enn Tõugu had got employed by Tallinn Excavator Plant, where he acquired a good engineer's practice while designing the very first Estonian excavator. His curiosity for computer science, a specialty undergoing a rapid evolutionary change in the 1960s, motivated him to embark on further study and professional qualifications at Leningrad Polytechnic Institute. Back in Tallinn, Enn Tõugu began working at the Electrical Engineering Institute. He was involved in elaboration of the original minicomputer STEM. In 1965 Enn Tõugu defended his Candidate of Sciences (PhD) thesis CALCULATING TECHNOLOGICAL PARAMETERS ON COMPUTERS at the Academy of Sciences of the Belarussian SSR and in 1973 his

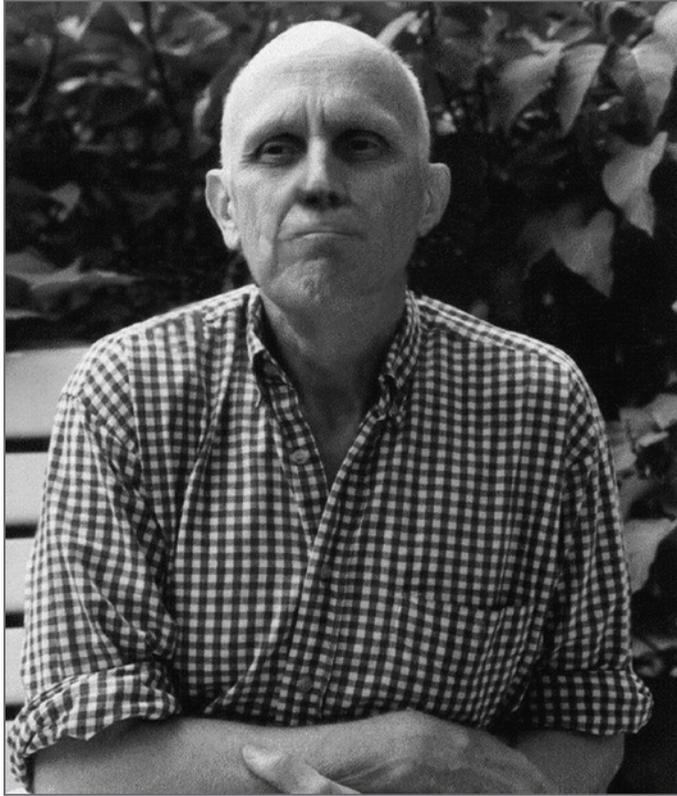
Doctoral thesis APPLICATION OF COMPUTATIONAL MODELS IN CAD SOFTWARE at Leningrad Electrical Engineering Institute.

Since 1976 Enn Tõugu has been associated with the Institute of Cybernetics, working as Head of Department and Senior Research Scientist. His main areas of research used to be automatic synthesis of programs, declarative languages and artificial intellect. Presently he works at the same institute as Leading Research Scientist, handling reliable software and human language technology based projects.

In 1981 Enn Tõugu was elected Member of the Estonian Academy of Sciences in informatics. In 1985-1991 he was Academician-Secretary of the Division of Informatics and Engineering of the Academy. In 1992-2000 Enn Tõugu was Professor in Software Engineering of the Royal Institute of Technology in Sweden, in 2000-2007 Professor of the Estonian Business School and in 2008-2010 Researcher-Counsellor of the Cooperative NATO Cyber Defence Centre of Excellence.

A groundbreaker of Estonian computer science, Enn Tõugu has worked as a faculty member at Tallinn University of Technology for decades, has also been a scientific supervisor at the Institute of Cybernetics, and every so often just a good counsel in expertise. His students can be encountered across the entire world and a great number of PhD and MSc dissertations have been defended under his supervision. Enn Tõugu has published six monographs and over two hundred scientific articles. Enn Tõugu's research outcomes have twice been recognised with the National Science Prize (1967, 1987). In 2001 he was granted the Order of the White Star, 3rd class.

Sailing has been among Enn Tõugu's favourite activities for a very long time – he has participated in yacht races, worked as a coach and a referee. He likewise enjoys practising other sports – tennis, downhill and cross-country skiing in particular.



Jaak Peetre

Jaak Peetre was born on July 29, 1935 in Tallinn to a family of attorney-at-law. His childhood and adolescent years were spent in Pärnu. In 1944, caught in the turmoil of World War II, the family expatriated to Sweden, where he continued his education at Lund Allhelgona (All Saints) School. Jaak Peetre's passion and talent for mathematics had become apparent while still in high school and in 1954 he proceeded to study mathematics at Lund University, already at school. By 1959 he had already completed his undergraduate and graduate studies with a PhD thesis in the area of partial differential equations. He graduated from the in 1956, in 1958 he defended his degree of PhLic and In the same year the university appointed him as a docent in mathematics. In the years 1960-1962 he worked as a visiting fellow at the universities of New York and Maryland. In 1963 Jaak Peetre was granted Professorship at Lund University (one among three mathematicians in Sweden to become a professor under 30 years of age). Having moved as a visiting fellow to Madrid University in 1988, he continued his academic career as Professor in Mathematics at Stockholm University

during 1988-1992. Subsequently, Jaak Peetre returned to Lund University and worked as Professor until 2000, when he became *Emeritus*.

The research directions explored by Jaak Peetre have involved multiple domains of mathematics, including ordinary and partial differential equations, operators' interpolation spaces, singular integrals and Besov spaces, differential geometry, Clifford analysis, Fock space and Hankel operators, Fourier' and harmonic analysis. Together with French mathematicians Bernhard Malgrange and Louis Lions he laid the foundation for the contemporary interpolation theory. At the beginning of the 1990s his research interests mainly focused on multi-linear forms, particularly trilinear forms. With regard to the amount of published his more than 230 published scientific works Jaak Peetre is the most prolific mathematician of Estonian nationality. Under his supervision, 8 doctoral and 8 licentiate theses have been completed. He is a Member of the Royal Swedish Academy of Sciences and an Honorary Member of the Swedish Mathematical Society (in 1984-1987 President). He also belongs to editorial boards of several international scientific journals.

It is hard to overestimate the influence Jaak Peetre has had on the advancement of mathematics in Estonia. The Estonian Mathematical Society is among collective founding members of the European Mathematical Society largely thanks to his initiative. His frequent visits to Estonia ordinarily entailed conversations with colleagues and a lot of lecturing and mentoring he has long been a member of the editorial board of the Proceedings of the Estonian Academy of Sciences. Physics. Mathematics (currently titled Proceedings of the Estonian Academy of Sciences), etc.

Since 1994 he is an Honorary Member of the Estonian Mathematical Society. In 2001 Jaak Peetre was granted the Order of the White Star, 3rd class. In 2008 he was elected a Foreign Member of the Estonian Academy of Sciences.

On top of having full command over Estonian, Swedish, English, French and German, Jaak Peetre is pretty fluent in Spanish, Latin, Finnish and Russian. He is known to have run 19 marathons and, last but not least, has gained a reputation among colleagues for being an excellent baker and gardener.



Ilmar Koppel

Ilmar Koppel was born on January 16, 1940 in Võru. His childhood years were spent in Puurmani, a small town in Jõgeva County. In 1958 he got his high school diploma among the first graduating class of Puurmani Secondary School and proceeded to study chemistry at the University of Tartu. After completing his undergraduate studies in organic chemistry in 1963, he took a postgraduate programme at the same university (1963-1967) and earned his Candidate of Sciences (PhD) degree in 1969 with a dissertation on the topic SOLVENT'S (REACTION MEDIA) IMPACT ON SN1 TYPE KINETICS AND MECHANISM OF SOLVOLYSIS REACTIONS. Ilmar Koppel attained his Doctor of Sciences degree in Chemistry from N.N.Semenov Institute of Chemical Physics of the USSR Academy of Sciences (Moscow) in 1986. His doctoral thesis combined the results from multiple experimental and theoretical studies on measurements of gas and liquid phase acid-base equilibria and photoelectron spectra with further interpretations using up-to-date quantum chemistry methods. Ilmar Koppel was

granted professorship in 1990 and the Estonian Academy of Sciences elected him a Member in 1993.

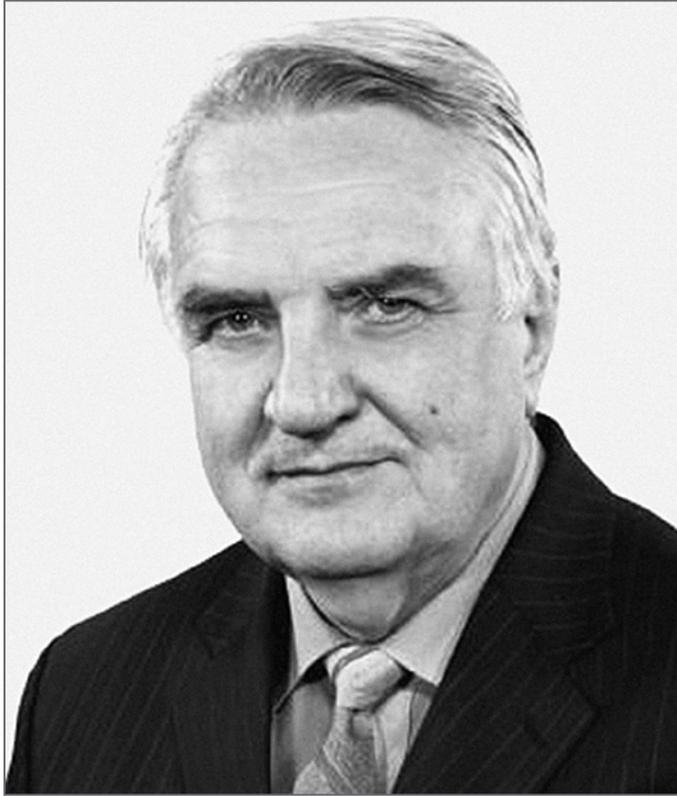
The academic career of Ilmar Koppel at the University of Tartu started right upon his graduation. Over half a century he has held positions of ascending responsibility: Assistant, Junior and Senior Research Fellow at the Chair of Organic Chemistry, Head of the Laboratory of Chemical Kinetics and Catalysis, Head of the Department of Analytical Chemistry, Professor and Head of the Chair of Analytical Chemistry, Director of the Institute of Chemical Physics, Research Director of the Institute of Chemistry. From 2005 to 2008 Ilmar Koppel worked at the university as Academy Research Professor. Since 2008 he has been Lead Research Fellow in Physical and Analytical Chemistry.

The key topics addressed by Ilmar Koppel include acid-base equilibria in gas phase and non-aqueous solvents; superacidity and superbasicity in gas phase in combination with the design, measurements and applications of new superacids and superbases; *ab initio* and semiempirical quantum-chemical (DFT) calculations; solvent effects on chemical reactions and physico-chemical parameters; photoelectron spectra of organic compounds; S_N1 reaction mechanisms; substituent and salinity effects on chemical reactions. The primary focus of his studies has been on themes falling on the borderline between chemistry and physics that leverage synergies from interdisciplinary experimental and theoretical research methods.

A renowned expert among his colleagues worldwide, Ilmar Koppel has served on steering committees of numerous international conferences, has been Estonian representative to international organisations and principal investigator/coordinator for research projects at both international and national levels. His role at the Estonian Academy of Sciences has been similarly influential – a Member of the Board and Head of the Division of Biology, Geology and Chemistry for two consecutive terms (from 2004 to 2014). His publications comprise five monographs and around 300 articles in international peer-reviewed journal, while he is ranked one of the most highly cited Estonian researchers.

Ilmar Koppel has twice been acknowledged with the National Science Prize – an annual award in chemistry and molecular biology as head of a team (1998) and an Outstanding Lifetime Achievements Award in research and development (2005). In 2006 he was presented with the Order of the White Star, 3rd class and in 2010 with the W.Ostwald medal by the Estonian Academy of Sciences.

The activities that Ilmar Koppel has enjoyed most include alpine climbing and mountaineering. He is known to have a real soft spot for volcanoes. Nowadays, he has taken to reading historical documentary fiction.



Rein Küttner

Rein Küttner was born on November 25, 1940 in Tallinn. He began his education at his neighbourhood 7-year school in Nõmme District, where he developed an interest in mathematics, physics and technology. He continued his studies at Tallinn Polytechnic School majoring in electric equipment for industrial enterprises and installations. As a next step, he proceeded to Tallinn University of Technology completing his studies in 1965 with a Diploma in mechanical engineering. While still studying at the university, Rein Küttner had started to work at the Chair of Machine Building Technology as Head of Laboratory and Engineer. After graduation he remained at the Chair in the position of Assistant. He defended his dissertation for the Candidate of Sciences (PhD) degree in Engineering at Leningrad Institute of Fine Mechanics and Optics in 1971 on the topic TECHNIQUES FOR OPTIMISATION OF CUTTING DATA. The Estonian Academy of Sciences elected him to its membership in 1997.

The career path of Rein Küttner was associated with the Chair of Machine Building Technology at TUT from 1970 to 1991 in several positions of increasing responsibility: Assistant, Senior Lecturer, Associate Professor, Head of Chair and Academic Supervisor at the Computer Aided Design Laboratory. Thereafter he was Professor at the Department of Mechanical Engineering and concurrently Vice-Rector for Research of TUT (1991-2001), Head of the Department of Mechanical Engineering (2001-2004) and Professor of Production Technology (2004-2010). Since 2004 he has been *Professor Emeritus* at TUT.

Core topics studied by Rein Küttner can be divided into two larger periods: until 1971 he was chiefly focused on modelling and optimisation of technology processes in mechanical engineering, afterwards on elaboration of software for computer aided design and development of specialised software tools. His research projects are incorporating multiple fields of knowledge – from engineering to computer science and high tech IT solutions. A strong and internationally known school of computer aided design in mechanical engineering has been formed in Estonia largely thanks to his personal involvement and guidance.

Rein Küttner has published over 130 research articles and one monographic work. He has maintained long-standing collaborative links with a great number of partners abroad, incl. universities of technology in Dresden, Stockholm, Darmstadt, Budapest, Helsinki and elsewhere as well as other institutions (New York Queens College, Kiel Institute of World Economics, Trondheim University, etc.). His multifold organisational activities range from participation in steering and programme committees of international conferences to sitting on the boards of several professional associations and scholarly societies. Among other responsibilities he has been Head of the Division of Informatics and Engineering at the Estonian Academy of Sciences (1999-2009).

The American Society of Manufacturing Engineers (SME) recognised Rein Küttner with its Letter of Appreciation in 1979. He has also received a Letter of Appreciation from the Presidium of All-Union Scientific-Technical Unions twice (1986, 1990) and from the Presidium of the Supreme Soviet of the ESSR (1986), the Science Prize of Tallinn House of Scientists (1985), the honorary title of Merited Engineer (1987) and the Medal of the Estonian Academy of Sciences (2000). In 2003 he was acknowledged with the Order of the White Star, 4th class.

Rein Küttner has interests across a wide cultural spectrum. Travelling and fancy gardening have been among his best loved leisure activities for a very long time.



Jüri Martin

Jüri Martin was born on September 29, 1940 in Tallinn to a family of actors. He graduated from Tallinn Secondary School No. 21 in 1959 and from the Faculty of Mathematics and Natural Sciences at the University of Tartu in 1964, majoring in biology. His post-graduate studies at the Institute of Ecology of Plants and Animals of the USSR Academy of Sciences (Ural Branch) were completed in 1968 by defending a dissertation on the topic HABITAT DYNAMICS OF MOSSES ON GLACIAL MORAINES IN THE POLAR URALS for a Candidate of Sciences (PhD) degree in Biology. He took his Doctor of Sciences degree in Biology at the same institute in 1988 with a dissertation titled BIOGEOCHEMICAL ROLES OF MOSS SPECIES AND HABITATS IN EXTREME ENVIRONMENTAL CONDITIONS. In 1990 he was elected a Member of the Estonian Academy of Sciences in the area of ecology.

The professional career of Jüri Martin at Tallinn Botanic Garden started as Senior Researcher in 1969. His further positions included Scientific Secretary

(1969-1975), Deputy Director for Science (1975-1978), Director (1978-1988) and Head of the Laboratory of Bioindication (1988-1991). After that time he was employed as Director of the International Plant and Pollution Research Laboratory (1991-1994) and Director of the International Centre for Environmental Biology (1994-2000). In 1997 he became Rector of Euroacademy and continues in office to this day. Currently, he is additionally working as Professor (since 2008).

The major themes studied by Jüri Martin have been concerned with general ecology, biogeochemistry, ecology of mosses, preservation of the environment and nature. He has explored the habitat dynamics in polar regions, anthropotolerance of ecosystems, landscapes and microclimate. His principal research interests include the effects of airborne pollutants on plants (especially on forests) and biogeochemical monitoring – bioaccumulation of sulfur, heavy metals and radionuclides relating to Estonia, the Arctic, industrial regions in the Urals, regions of volcanic activity in Eurasia and national parks of the USA. Jüri Martin has participated, either for research purposes or owing to his passion for travel, in numerous expeditions to the Caucasus, the Polar Urals, Western and Southern Siberia, the Far East, Antarctica, Alaska, the Kola Peninsula, Greece, Kenya, Madagascar, India, Pennsylvania, Great Smoky Mountains National Park in the USA, etc. Thanks to well-established collaboration with his American colleagues Jüri Martin has had an opportunity to work as Visiting Research Fellow at a good few of universities in the United States.

Jüri Martin is a member of the Estonian Polar Research Committee, Coordinator of the Baltic project on Forest Monitoring in the United States, Central and Eastern Europe, member in the Forum for Monitoring the World's Forests and an editorial board member of several scholarly journals. Twelve dissertations for the Candidate of Sciences degree and one for the PhD degree have been defended under his supervision.

The scientific contributions of Jüri Martin have been recognised with the Karl Ernst von Baer Medal (1986), UNESCO's Man and the Biosphere Programme (MAB) Medal (1988), Estonian Honorary Nature Conservation Badge (1990), Henry Ford European Conservation Award (1998), International Socrates Award (2005), Queen Victoria Commemorative Medal (2009), Leibniz Medal (2012).

Hiking, mountaineering and skiing have been Jüri Martin's favourite occupations ever since he was a schoolboy. Later on he has come to enjoy just being out in nature, while in like manner he also finds great pleasure from reading fiction, visiting the theatre and concerts.

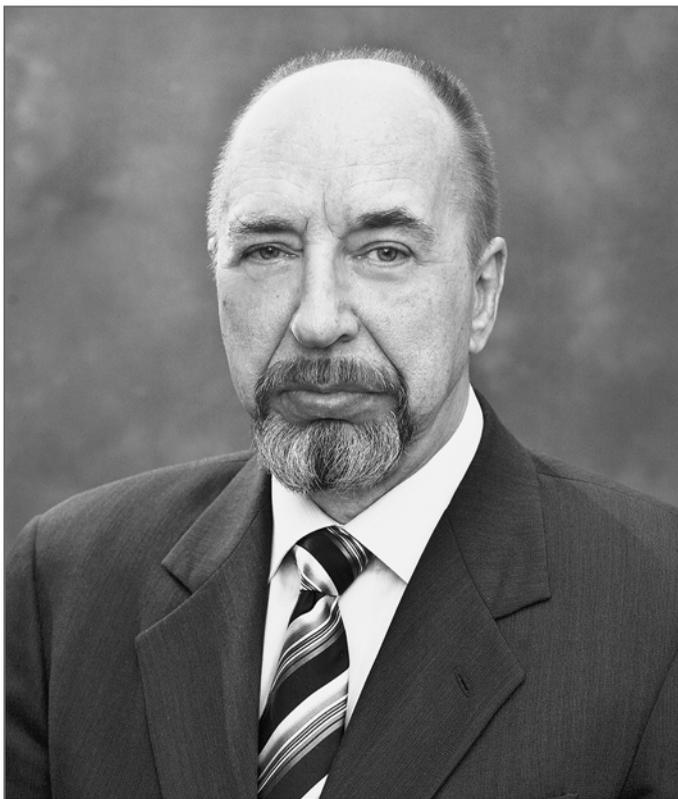


Enn Mellikov

Enn Mellikov was born on April 1, 1945 in Pärnu – a Southern Estonian town where his family had long established roots. It was also the town of his childhood and high school years. While working as a shepherd was his favourite summer activity as a young boy, at a later age he preferred spending time with books or on a sports ground. In 1963 Enn Mellikov graduated from Pärnu Secondary School No. 4 and proceeded to Tallinn University of Technology. He undertook a newly initiated programme in technology of specialised materials for electronics that he completed in 1968. After graduation Enn Mellikov proceeded to work at the university, where his first employment was with the Chair of Physical Chemistry. His research themes were involved in the chemistry and technology of radiation-sensitive materials. Both of his postgraduate dissertations followed from the outcomes of those studies. He defended his Candidate of Chemical Sciences (PhD) thesis on the topic PHYSICOCHEMICAL STUDIES ON THE RECRYSTALLISATION PROCESS OF CADMIUM SULFIDE POWDERS at Sverdlovsk State University in 1977 and his Doctor of Sciences thesis on the topic OPTOELECTRONIC DEVICES ON THE BASIS OF A^3B^6 MATERIALS at the Institute of Inorganic Chemistry, Ural Branch, USSR Academy of Sciences in 1988. He

became one of the youngest Doctors of Sciences in Estonia of that time. Enn Mellikov has continued his career path at Tallinn University of Technology through several positions: Head, Laboratory of Optoelectronic Materials (1987-1992), Acting Professor and Head, Chair of Semiconductor Materials Engineering (1992-1997), Head, Centre of Competence in Materials Science (2001-2003), Director, Department of Materials Science (2003-2014). Since 1997 he has been working at the Chair of Semiconductor Materials Engineering as Professor and Head of Chair. The Estonian Academy of Sciences elected Enn Mellikov to its membership in 2003. The research themes addressed by Professor Mellikov are invariably associated with materials science. His studies targeting the design and development of novel materials for solar energy transformation into electrical energy, have had a pioneering and boosting role across the entire globally influential sphere of renewable energy and have laid the foundations to a corresponding school in Estonia. The top-notch lab headed by Enn Mellikov is the only one of its kind throughout the world that studies powdered materials as components of solar panels converting sunlight into electricity. The original methods worked out by his team and their possible further application for manufacturing devices has led to major enhancements in comparison to the inefficient and expensive technologies that had been used up to that time. Their innovative solutions are covered by more than 60 patents. His achievements include the founding of spin-off companies from Tallinn University of Technology – *Crystalsol OÜ* in Estonia and *Crystalsol GmbH* in Austria – that are focused on developing solar panels of a radically new type targeted at low production cost. Enn Mellikov is heading the Centre of Excellence in Solar Energy for Nordic Countries that started operating in 2007. Enn Mellikov is renowned among colleagues at home and abroad for his pioneering concepts and solutions, whereas his role in administrating research and educating the following generations of young scientists is equal in importance. He has taken part in the work of several decision making bodies and programme committees of international conferences, represented Estonia in international organisations, worked as Principal Investigator and Steering Committee Member on multiple international and national R&D projects. His past responsibilities include: membership in the Board of the Estonian Academy of Sciences, Council of the Estonian Science Foundation, Evaluation Committee of the Estonian Research Council and National Science Prize Committee. About a dozen MSc and Phd dissertations have been defended under the supervision of Enn Mellikov.

He has been acknowledged with the National Science Prize thrice: annual award in chemistry as a member of research team (1985), annual award in natural sciences and engineering as head of research team (1997) and Outstanding Lifetime Achievement Award in research and development (2013). In 2006 he was presented with the Order of the White Star, 4th class. Enn Mellikov is convinced about the brilliant future of solar energy and according to him the production of electricity will be dominated by solar panels some twenty years from now.



Peeter Saari

Peeter Saari was born on June 2, 1945 in Tallinn to a teacher's family. His enthusiasm towards engineering and natural sciences was largely encouraged by his father. In 1963 he graduated from Tallinn Secondary School No. 21, where he had developed a keen interest in physics. Hence, he entered the Department of Physics at the University of Tartu. His studies were completed in 1968 with a diploma in theoretical physics. In 1972 he defended his Candidate of SCIENCES (PhD) DISSERTATION ON THE TOPIC HOT LUMINESCENCE AND RELAXATION PROCESSES IN IMPURITY CENTRES and in 1980 his Doctor of Sciences (physics and mathematics) dissertation on the topic HOT LUMINESCENCE AND RELAXATION PROCESSES IN CRYSTALS. Peeter Saari was elected a member of the Estonian Academy of Sciences in 1986 and was awarded the title of Professor in 1994.

The research interests of Professor Saari lie in borderland areas integrating optical spectroscopy and physical/wave optics with solid state physics, chemical physics and mathematical physics. He has worked in five different (sub)fields of

contemporary optics: hot luminescence and classification of the secondary light emission of solids; peculiarities of spectra of impurities in frozen paraffines (the Shpolski effect); shaping and characterisation of ultrashort light pulses; generalised holography by spectral hole-burning media; so-called propagation-invariant nondiffracting localised ultrashort light pulses.

Peeter Saari has held several organisational and administrative positions in the structure of the Estonian R&D system. He has sat on the Presidium and the Board of the Estonian Academy of Sciences, headed the Academy's Division of Astronomy and Physics. His other responsibilities have been associated with the Estonian Science Foundation as the first Chairman of the Council (1990-1993), Estonian Union of Scientists as longtime Member of the Council, Estonian Physical Society as Member of the Board (1989-2009), Estonian Research Council as Chairman of the Working Group for preparation of the Estonian Research Infrastructures Roadmap (2009-2010), etc. Currently, he is a Member of the Estonian President's Academic Advisory Board and the University of Tartu Contribution to Estonian National Identity Award Panel, Chairman of the Estonian Committee at the International Commission for Optics (ICO), as well as OSA (The Optical Society) Senior Member.

In 2000 Peeter Saari was among laureates of the National Science Prize – he received the annual award in exact sciences for a series of studies NON-DIFFUSIBLE LIGHT WAVES. In 2002 the President of Estonia honoured him with the Order of the White Star, 3rd class. In 2011 he was awarded with a Special Recognition Diploma by the World Cultural Council and the Denisjuk medal by the Rozhdensvensky Optical Society (ROS). In 2014 he was named an Honorary Citizen of Tartu.

The future of the Estonian language is an issue that has long been close to Peeter Saari's heart, and all the more so considering the ongoing globalisation processes in education. On the other hand, a thought of about a thousand enthusiastic students who have received something worthwhile from his lectures at the university, will definitely put a smile on his face.



Peeter Tulviste

Peeter Tulviste was born on October 28, 1945 in Tallinn to the family of a military serviceman. His childhood home was in Järve – a subdistrict with abundant greenery affording a close to perfect environment for a lively child. He attended Nõmme Gymnasium, a school known to every way encourage young people in following their inner drive for achievement and performance. After graduating from secondary school in 1964, Peeter Tulviste was set to study history at the University of Tartu. Thanks to an unexpected opportunity, he enrolled in Moscow State University for studying psychology on one of the so-called republic destined places. He was fortunate to study cultural psychology from an outstanding pioneer of neuropsychology Alexander Luria, who has had great influence on the formation of his later research interests. After graduation in 1969, Peeter Tulviste undertook postgraduate studies at the same university and gained his Candidate of Sciences (PhD) degree in psychology in 1975 with a dissertation SOCIOHISTORICAL EVOLUTION OF COGNITIVE PROCESSES BASED ON EXPERIMENTAL AND PSYCHOLOGICAL STUDIES CONDUCTED ABROAD. In

1987 he likewise gained his Doctor of Sciences degree in psychology at Moscow State University with a dissertation under the title CULTUROHISTORICAL DEVELOPMENT OF VERBAL THINKING.

In 1994 the Estonian Academy of Sciences elected Peeter Tulviste to its membership in the area of the humanities and social sciences. The academic career of Peeter Tulviste has been associated with the University of Tartu since 1974 when he got employed as Lecturer at the Chair of Logic and Psychology (1974-1975). He continued at the same chair as Senior Lecturer (1975-1978) and Associate Professor (1978-1988). His further affiliation has been with the Chair of Psychology in the position of Professor. Since 2015 Peeter Tulviste has been *Professor Emeritus*. His principal lecture courses have covered topics relative to the psychology of thinking and speaking, cultural psychology and the history of psychology. Between 1992 and 1993 he shortly held the office of Vice-Rector for Research, followed by a five-year term as Rector from 1993 to 1998.

Peeter Tulviste entered into public policy making at the local level by becoming Chairman of Tartu City Council (1999-2002). He continued as a member of the 10th and 11th *Riigikogu* (Parliament) within the period from 2003 to 2011. Currently, Peeter Tulviste is a member of Tartu City Council.

The research interests of Peeter Tulviste focus on the relationship between thinking and culture. He has done a thorough analysis of foregoing conceptions about the role of culture in the evolution of thinking, considering both historical and individual aspects. While approaching and furthering these conceptions he has made every effort to examine them from the perspective of the humanities and refrain from offering explanations according to the principles observed in natural or exact sciences.

Peeter Tulviste is a member of the European Academy of Sciences and Arts; New York Academy of Sciences; Russian Academy of Educational and Social Sciences; a corresponding member of the Finnish Literature Society. He sits on the International Advisory Boards of the University of Greifswald and the University of Helsinki Aleksanteri Institute, belongs to the Board of Elders of the Estonian Defence League, Academic Panel of THE TEA ENCYCLOPEDIA, Advisory Board of the Ilmamaa Publishers, Editorial Boards of the journals *Akadeemia*, and Journal of Russian and East European Psychology (Routledge). At the Estonian Academy of Sciences, Peeter Tulviste has been Vice-President (1994-2004) and Head of the Division of Humanities and Social Sciences for two non-consecutive terms (1994-1999, 2004-2009).

The contributions of Peeter Tulviste have been recognised with the Swedish Royal Order of the Polar Star, 1st class (1995), the Order of the National Coat of Arms, 4th class (1998) and 3rd class (2006), the White Cross of the Estonian Defence League. He has received the Coat of Arms Badge from Pärnu County,

the Badge of Merit from the Estonian Defence League's Tartu malev (regional unit) and the Raefond scholarship from the University of Tartu Foundation. This year he was presented with the title of Honorary Citizen of Tartu.

Above all other genres, Professor Tulviste enjoys reading recollections and surreal poetry. He has translated from German and Russian to Estonian several books, including both belles lettres and works by philosophers (Schweitzer, Kon, etc.). He is also greatly attracted to collecting jokes and has by now published a handful of booklets based on his humour collections.

Anniversaries in 2015:

80th birthday

Arvo Pärt

Anto Raukas

Enn Tõugu

Jaak Peetre

75th birthday

Ilmar Koppel

Rein Küttner

Jüri Martin

70th birthday

Enn Mellikov

Peeter Saari

Peeter Tulviste

60th birthday

Steven Bishop

45th birthday

Ülo Niinemets

40th birthday

Lauri Mälksoo

MEMBERS OF THE ACADEMY

As of March 2016¹

Jaan AARIK, born 1.01.1951, elected 2013, exact sciences. University of Tartu 1974. Professor of Solid State Technology (2009), Head of Laboratory of Thin-Film Technology, Institute of Physics, University of Tartu (2008); Ravila 14c, 50411 Tartu ESTONIA, Tel: +372 737 4674, Fax: +372 738 3033, jaan.aarik@ut.ee. HOME ADDRESS Mõisavahe 60-41, 50707 Tartu ESTONIA, Tel: +372 5690 3295. Divorced, daughter and son.

Olav AARNA, born 4.11.1942, elected 1990, informatics. Tallinn University of Technology 1965. Vice Rector for Research and Development, Estonian Business School (2014); Lauteri 3, 10114 Tallinn ESTONIA, Tel: +372 501 1897, olav.aarna@ebs.ee. HOME ADDRESS Nooruse 1-45, 76901 Tabasalu, Harku vald, Harju maakond ESTONIA, Tel: +372 603 2060. Cohabitant, three sons and daughter.

Jaak AAVIKSOO, born 11.01.1954, elected 1994, exact sciences. University of Tartu 1976. Rector, Tallinn University of Technology (2015); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2003, Fax: +372 620 2020, jaak.aaviksoo@ttu.ee. HOME ADDRESS Weizenbergi 4-12, 10150 Tallinn ESTONIA. Widower, two sons and daughter.

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

Jüri ALLIK, born 3.03.1949, elected 2010, psychology. University of Tartu 1973. Professor of Experimental Psychology, Head, Institute of Psychology, University of Tartu (2002); Näituse 2, 50409 Tartu ESTONIA, Tel: +372 737 5905, Fax: +372 737 6152, juri.allik@ut.ee. HOME ADDRESS Palu tee 20A, 61505 Tartu ESTONIA, Tel: +372 744 2119. Married, three children.

Toomas ASSER, born 14.07.1954, elected 2011, neurosurgery. University of Tartu 1979. Professor of Neurosurgery, University of Tartu (1995); L.Puusepa 8, 51014 Tartu ESTONIA, Tel: +372 731 8500, toomas.asser@kliinikum.ee. HOME ADDRESS Kastani 30a, 50409 Tartu ESTONIA. Married, two sons and daughter.

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

¹ Research institutions and universities are referred to by their current names.

Jaan EINASTO, born 23.02.1929, elected 1981, astrophysics. University of Tartu 1952. Senior Researcher, Department of Cosmology, Tartu Observatory (2004); Observatooriumi 1, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 696 2538, Fax: +372 696 2555, jaan.einasto@to.ee. HOME ADDRESS Tiigi 6-3, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0151. Widower, son and two daughters.

Jüri ENGELBRECHT, born 1.08.1939, elected 1990, mechanics. Tallinn University of Technology 1962. Lead. Research Fellow, Laboratory of Non-linear Dynamics, Institute of Cybernetics, TUT (2008); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4160, Fax: +372 620 4151, je@ioc.ee. HOME ADDRESS Trummi 34J, 12617 Tallinn ESTONIA, Tel: +372 672 6045. Married, son and daughter.

Ene ERGMA, born 29.02.1944, elected 1997, exact sciences. Moscow University 1969. Professor emeritus, University of Tartu (2015), ergmaene@gmail.com. HOME ADDRESS Aleksandri 35-14, 51004 Tartu ESTONIA, Tel: +372 738 1874. Single.

Arvi FREIBERG, born 28.06.1948, elected 2009, exact sciences. Tallinn University of Technology 1971. Professor of Biophysics and Plant Physiology, University of Tartu (2003); Ravila 14c, 50411 Tartu ESTONIA, Tel: +372 5645 3175, arvi.freiberg@ut.ee. HOME ADDRESS Aardla 154-5, 50415 Tartu ESTONIA, Tel: +372 5645 3175. Married, daughter and son.

Vladimir HIZNJAKOV, born 25.05.1938, elected 1977, physics. University of Tartu 1960. Senior Researcher, Institute of Physics at University of Tartu (2004); Ravila 14c, 50411 Tartu ESTONIA, Tel: +372 737 4759, Fax: +372 738 3033, hizh@fi.tartu.ee. HOME ADDRESS Aardla 154-6, 50415 Tartu ESTONIA, Tel: +372 747 5290. Married, son and two daughters.

Ülo JAAKSOO, born 16.04.1939, elected 1986, informatics. Tallinn University of Technology 1962. Chairman of Supervisory Board, Cybernetica AS (2013); Mäealuse 2/1, 12618 Tallinn ESTONIA, Tel: +372 639 7991, Fax: +372 639 7992, ulo.jaaksoo@cyber.ee. HOME ADDRESS Mägra 6, 10917 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); Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5246, Fax: +372 737 5247, jaak.jarv@ut.ee. HOME ADDRESS E. Wiiralti 1, 51011 Tartu ESTONIA. Married, son and two daughters.

Ain-Elmar KAASIK, born 2.08.1934, elected 1993, neurology. University of Tartu 1959. Professor emeritus, University of Tartu (1999). HOME ADDRESS Supluse pst. 5-1, 11911 Tallinn ESTONIA, Tel: +372 742 5426, ain-elmar.kaasik@kliinikum.ee. Widower, son.

Dimitri KALJO, born 12.10.1928, elected 1983, geology. University of Tartu 1953. Senior Researcher, Institute of Geology, TUT (2008); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 5648 5523, Fax: +372 620 3011, dimitri.kaljo@gi.ee. HOME ADDRESS Raja 7A-6, 12616 Tallinn ESTONIA, Tel: +372 672 6551, adkaljo@gmail.ee. Married, son and daughter.

Mart KALM, born 3.09.1961, elected 2010, art history. University of Tartu 1984. Vice President, Estonian Academy of Sciences (2014); Estonia pst. 7, 10143 Tallinn ESTONIA, Tel: +372 626 7302, Fax +372 626 7350, mart.kalm@akadeemia.ee. HOME ADDRESS Ravi 19-13, 10138 Tallinn ESTONIA, Tel: +372 644 0846. Married, son and daughter.

Mati KARELSON, born 27.12.1948, elected 2007, natural sciences and medicine. University of Tartu 1972. Professor of Molecular Technology, University of Tartu (2005); Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5255, Fax: +372 737 5264, mati.karelson@ut.ee, HOME ADDRESS Mõisatamme 27, Vahi, 60534 Tartu maakond ESTONIA, Tel: +372 734 8399. Married, two sons.

Ilmar KOPPEL, born 16.01.1940, elected 1993, natural sciences (physical chemistry). University of Tartu 1963. Lead. Researcher, Ass. Director for Research, Institute of Chemistry, UT (2008); Ravila 14a, 50411, Tartu ESTONIA, Tel: +372 737 5263, Fax: +372 737 5264, ilmar@chem.ut.ee. HOME ADDRESS Kaunase pst 16-10, 50704 Tartu ESTONIA, Tel: +372 748 4351. Married, son.

Arvo KRIKMANN, born 21.07.1939, elected 1997, humanities. University of Tartu 1962. HOME ADDRESS Kastani 59-2, 50410 Tartu ESTONIA, Tel: +372 742 0079, krikud@hot.ee. Married, three sons.

Lembit KRUMM, born 20.07.1928, elected 1987, power engineering. Tallinn University of Technology 1952. HOME ADDRESS Trummi 4-19, 12616 Tallinn ESTONIA, Tel: +372 672 6513, +372 564 4706, lembitkrumm@gmail.com. Married, two sons and two daughters.

Valdek KULBACH, born 6.04.1927, elected 1986, mechanics. Tallinn University of Technology 1951. Professor emeritus, Tallinn University of Technology (1998); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2408, Fax: +372 620 2405, valdek.kulbach@ttu.ee. HOME ADDRESS Rõõmu 14-9, 10921 Tallinn ESTONIA, Tel: +372 677 8207, valdek.kulbach@gmail.com. Married, two daughters.

Urmās KÕLJALG, born 24.02.1961, elected 2011, biosystematics and ecology. University of Tartu 1988. Professor of Mycology (2001), Director of Natural History Museum and Botanical Garden (2014), UT; Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 6235, Fax: +372 737 6222, urmas.koljalg@ut.ee. HOME ADDRESS Elva 6, 50404 Tartu ESTONIA. Married, son and three daughters.

Arno KÕORNA, born 2.02.1926, elected 1972, economics. University of Tartu 1955. Professor emeritus, Euroacademy (2005); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel/Fax: +372 650 5120. HOME ADDRESS A.Kapi 9-22, 10136 Tallinn ESTONIA, Tel: +372 662 0628, arno.koorna@mail.ee. Widower, son and daughter.

Jakob KÜBARSEPP, born 9.02.1947, elected 2011, materials engineering. Tallinn University of Technology 1970. Vice Rector for Academic Affairs, Tallinn University of Technology (2013); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2006, Fax: +372 620 2020, jakob.kubarsepp@ttu.ee. HOME ADDRESS Rännaku pst 56, 10921 Tallinn ESTONIA, Tel: +372 672 2281. Married, four daughters.

Rein KÜTTNER, born 25.11.1940, elected 1997, technical sciences. Tallinn University of Technology 1965. Professor emeritus, University of Tartu (2010). HOME ADDRESS Mooni 107-58, 13424 Tallinn ESTONIA, Tel: +372 652 5503, rein.kyttner@ttu.ee. Married, son.

Hans KÜÜTS, born 20.12.1932, elected 1994, agricultural sciences. Estonian University of Life Sciences 1956. Senior Researcher, Jõgeva Plant Breeding Institute (1999); Aamisepa 1, 48309 Jõgeva alevik, Jõgeva maakond ESTONIA, Tel: +372 776 6901, Fax: +372 776 6902, ylle.tamm@etki.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. Senior Researcher of Plant Physiology, University of Tartu (2014); Nooruse 1, 50411 Tartu ESTONIA, Tel: +372 736 6021, agu.laisk@ut.ee. HOME ADDRESS Haagejärve 2, 61401 Tähtvere vald, Tartu maakond ESTONIA, Tel: +372 749 3228. Married, three sons.

Valter LANG, born 26.01.1958, elected 2010, historical sciences. University of Tartu 1981. Professor of Archaeology, University of Tartu (1999); Ülikooli 18, 50090 Tartu ESTONIA, Tel: +372 737 5652, Fax: +372 737 5345, valter.lang@ut.ee. HOME ADDRESS Kuu 12A-2, 50114 Tartu ESTONIA, Tel: +372 529 1843. Married, son and daughter.

Ülo LEPIK, born 11.07.1921, elected 1993, mechanics. University of Tartu 1948. Professor emeritus, University of Tartu (1996); J.Liivi 2-426, 50409 Tartu ESTONIA, ulo.lepik@ut.ee. HOME ADDRESS Lunini 3, 50406 Tartu ESTONIA, Tel: +372 738 0023. Married, two sons and 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, georg.liidja@kbfi.ee. HOME ADDRESS K.Kärberi 41-43, 13919 Tallinn, ESTONIA, Tel: +372 635 5878. Married, daughter.

Ülo LILLE, born 16.09.1931, elected 1983, biotechnology. Tallinn University of Technology 1955. Senior Researcher, Institute of Chemistry, Tallinn University of Technology (1997); Akadeemia tee 15, 12618 Tallinn ESTONIA, Tel: +372 620 4383, Fax: +372 620 2828, lille@chemnet.ee. HOME ADDRESS Trummi 32P, 12617 Tallinn ESTONIA, Tel: +372 672 6032. Married, two daughters.

Margus LOPP, born 11.09.1949, elected 2011, chemistry. University of Tartu 1973. Secretary General, Estonian Academy of Sciences (2014); Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 5810, margus.lopp@akadeemia.ee. HOME ADDRESS Trummi 32S, 12617 Tallinn ESTONIA, Tel: +372 672 6034. Married, son and two daughters.

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, ulo.lumiste@ut.ee. HOME ADDRESS Turu 19-28, 51004 Tartu ESTONIA, Tel: +372 734 4280, +372 515 1664. Married, two sons.

Enn LUST, born 22.10.1956, elected 2010, energy technology. University of Tartu 1980. Professor of Physical Chemistry (1997), Director, Institute of Chemistry (2008), University of Tartu; Ravila 14a, 50411 Tartu ESTONIA, Tel: +372 737 5165, Fax: +372 737 5264, enn.lust@ut.ee. HOME ADDRESS Leesika 8, 50304 Tartu ESTONIA. Married, two daughters and son.

Tšeslav LUŠTŠIK, born 15.02.1928, elected 1964, solid state physics. St. Petersburg State University 1951. Consultant, University of Tartu (2014); Ravila 14c, 50411 Tartu ESTONIA, Tel: +372 737 4784, Fax: +372 738 3033, luch@fi.tartu.ee. HOME ADDRESS Aardla 130-7, 50415 Tartu ESTONIA, Tel: +372 747 6608. Married, son.

Udo MARGNA, born 18.11.1934, elected 1987, plant physiology. University of Tartu 1957. Extraord. Lecturer, Pharmacy Department, Tallinn Health Care College (2008); Kännu 67, 13418 Tallinn ESTONIA, Tel: +372 671 1725, udo.margna@ttk.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, Euroacademy (1997); Mustamäe tee 4, 10621 Tallinn ESTONIA, Tel: +372 611 5804, Fax: +372 611 5811, jmartin@euroakadeemia.ee. HOME ADDRESS Liiva tee 2, Rohuneeme, Viimsi vald, 74012 Harju maakond ESTONIA, Tel: +372 503 1794. Married, three sons and daughter.

Enn MELLIKOV, born 1.04.1945, elected 2003, technology of materials. Tallinn University of Technology 1968. Professor emeritus (2016), Tallinn University of Technology; Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2798, enn.mellikov@ttu.ee. HOME ADDRESS Teaduse 10-15, Saku 75501 Harju maakond ESTONIA, Tel: +372 604 1076. Married, two sons.

Andres METSPALU, born 11.03.1951, elected 2010, biotechnology. University of Tartu 1976. Professor of Biotechnology, University of Tartu (1992), Director, Estonian Genome Center (2008); Riia 23b, 51010 Tartu ESTONIA, Tel: +372 737 5066, Fax: +372 744 0221, andres.metspalu@ut.ee. HOME ADDRESS Kalevi 65, 50103 Tartu ESTONIA, Tel: +372 734 3256. Married, four sons.

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Lauri MÄLKSOO, born 28.01.1975, elected 2013, law. University of Tartu 1998. Professor of International Law (2009), Head of Institute of Public Law, University of Tartu (2014); Näituse 20, 50409 Tartu ESTONIA, Tel: +372 737 6042, lauri.malksoo@ut.ee. Married, son.

Ülo NIINEMETS, born 19.03.1970, elected 2013, natural sciences. University of Tartu 1992. Professor of Plant Physiology, Estonian University of Life Sciences (2009); Kreutzwaldi 1, 51014 Tartu ESTONIA, Tel: +372 731 3140, Fax: +372 731 3738, ylo.niinemets@emu.ee. HOME ADDRESS Pallase 6, 51011 Tartu ESTONIA, Tel: +372 5345 7189. Married, 3 daughters.

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Eve OJA, born 10.10.1948, elected 2010, mathematics. University of Tartu 1972. Professor of Functional Analysis, University of Tartu (1992); J.Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 6407, Fax: +372 737 5863, eve.oja@ut.ee. HOME ADDRESS Ropka 19-25, 50111 Tartu ESTONIA, Tel: +372 747 0795. Married, son.

Arvo OTS, born 26.06.1931, elected 1983, power engineering. Tallinn University of Technology 1955. Extraord. Senior Researcher, Tallinn University of Technology (2003); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 3904, aots@ttu.ee. HOME ADDRESS Metsa 62B, 11620 Tallinn ESTONIA, Tel: +372 657 6034, +372 501 2217. Married, son and daughter.

Karl PAJUSALU, born 20.06.1963, elected 2011, linguistics. University of Tartu 1986. Professor of Estonian Dialectology and History of the Estonian Language, University of Tartu (2000); Jakobi 2-425, 51014 Tartu ESTONIA, Tel: +372 737 6124, karl.pajusalu@ut.ee. HOME ADDRESS Nooruse 54, 50411 Tartu ESTONIA, Tel: +372 526 7733. Married, two sons and daughter.

Arvo PÄRT, born 11.09.1935, elected 2011, music. Estonian Academy of Music and Theatre 1963. Freelance composer; International Arvo Pärt Centre, Aliina, Laulasmaa 76702 Keila vald, Harju maakond ESTONIA, Tel: +372 604 0470, larefa@paert.com. Married, two sons and two daughters.

Martti RAIDAL, born 26.02.1968, elected 2011, exact sciences. University of Helsinki 1995. Research Professor, National Institute of Chemical Physics and Biophysics (2012), Professor of High Energy Physics, University of Tartu (2012); Rävälä 10, 10143 Tallinn ESTONIA, Tel: +372 645 4711, Fax: +372 644 0640, martti.raidal@cern.ch. HOME ADDRESS Vene 10-3A, 10123 Tallinn ESTONIA. Married, two sons.

Anto RAUKAS, born 17.02.1935, elected 1977, geology. University of Tartu 1958. Senior Researcher, School of Natural Sciences and Health, Tallinn University (2015); Uus Sadama 5, 10120 Tallinn ESTONIA, Tel: +372 619 9833, Fax: +372 619 9801, anto.raukas3@mail.ee. HOME ADDRESS Trummi 32N, 12617 Tallinn ESTONIA, Tel: +372 672 6031. Married, two daughters.

Jaan ROSS, born 5.04.1957, elected 2003, humanities. Estonian Academy of Music and Theatre 1980. Professor of Musicology Department, Estonian Academy of Music and Theatre (1995); Tatari 13, 10116 Tallinn ESTONIA, Tel: +372 522 6886, jaan.ross@gmail.com. HOME ADDRESS Koidu 122-61, 10139 Tallinn ESTONIA, Tel: +372 648 1544. Married, daughter.

Hando RUNNEL, born 24.11.1938, elected 2012, literature. Freelance writer (1971); katre@ilmamaa.ee. Married, five sons and daughter.

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

Enn SAAR, born 04.03.1944, elected 2010, astronomy. University of Tartu 1967. Lead. Researcher, Tartu Observatory (2012); Observatooriumi 1, Tõravere, 61602 Tartu maakond ESTONIA, Tel: +372 5344 0899, enn.saar@to.ee. HOME ADDRESS Tiigi 2-2, Tõravere, 61602 Tartu maakond ESTONIA, Tel: +372 741 0462. Widower, daughter.

Peeter SAARI, born 2.06.1945, elected 1986, physics. University of Tartu 1968. Professor of Wave Optics, University of Tartu (1997); Ravila 14c, 504011 Tartu ESTONIA, Tel: +372 737 4602, Fax: +372 738 3033, 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. Professor, Institute of Biotechnology, University of Helsinki (1990); P.O. Box 56, Viikinkaari 9, FI-00014, Helsinki, FINLAND,

Tel: +358 9 191 59378, Fax: +358 9 191 59366, mart.saarma@helsinki.fi.
HOME ADDRESS Kulosaaren puistotie 38A4, FI-00570 Helsinki, FINLAND, Tel:
+248 9 684 5721. Cohabitant, son and daughter.

Valdur SAKS, born 3.09.1943, elected 1993, biochemistry. Moscow State University 1967. Senior Research Fellow, National Institute of Chemical Physics and Biophysics (2015); Akadeemia tee 23, 12618 Tallinn ESTONIA, Tel: +372 639 8363, vsaks@ujf-grenoble.fr. HOME ADDRESS Rävåla pst 13-3, 10143 Tallinn ESTONIA, Tel: +372 644 8643. Married, daughter.

Arved-Ervin SAPAR, born 7.02.1933, elected 1990, astrophysics. University of Tartu 1957. HOME ADDRESS Tiigi 6-6, 61602 Tõravere, Tartu maakond ESTONIA, Tel: +372 741 0335, arved.sapar@to.ee. Married, son and daughter.

Karl SIILIVASK, born 20.01.1927, elected 1977, history. University of Tartu 1951. HOME ADDRESS Näituse 22-13, 50407 Tartu ESTONIA, Tel: +372 5802 7190. Married, son.

Tarmo SOOMERE, born 11.10.1957, elected 2007, informatics and engineering. Moscow State University 1980. President, Estonian Academy of Sciences; Kohtu 6, 10130 Tallinn ESTONIA, Tel: +372 644 2129, tarmo.soomere@akadeemia.ee. Professor of Coastal Engineering (2005), Lead. Research Scientist, Head, Wave Engineering Laboratory (2009), Institute of Cybernetics at Tallinn University of Technology; Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +382 620 4176, Fax: +372 620 4151, soomere@cs.ioc.ee. HOME ADDRESS Trummi 30g, 12617 Tallinn ESTONIA, Tel: +372 502 8921. Cohabitant, two sons.

Martin ZOBEL, born 25.02.1957, elected 2010, ecology. University of Tartu 1980. Professor of Plant Ecology, University of Tartu (1992); Lai 40, 51005 Tartu ESTONIA, Tel: +372 737 6223, Fax: +372 737 6222, martin.zobel@ut.ee. HOME ADDRESS Vikerkaare 36, 51006 Tartu ESTONIA. Cohabitant, son and three daughters.

Tõnu-Andrus TANNBERG, born 22.09.1961, elected 2012, history. University of Tartu 1986. Professor of Estonian Recent History, University of Tartu (2013); Lossi 3, 51003 Tartu ESTONIA, Tel: +372 737 5650, Fax: +372 737 5345, tonu-andrus.tannberg@ut.ee. HOME ADDRESS Pikk 90-9, 50606 Tartu ESTONIA, Tel: +372 748 1288. Married, son and two daughters.

Hans-Voldemar TRASS, born 2.05.1928, elected 1975, botany and ecology. University of Tartu 1952. Professor emeritus, University of Tartu (1994); Lai 38, 51005 Tartu ESTONIA, Tel/Fax: +372 737 6222. HOME ADDRESS Riia 13-39, 51010 Tartu ESTONIA, Tel: +372 742 0481, +372 529 6835, hans.trass@mail.ee. Married, son and daughter.

Peeter TULVISTE, born 28.10.1945, elected 1994, humanities and social sciences. Moscow State University 1969. Professor emeritus, Consultant, University of Tartu (2015); Näituse 2, 50409 Tartu ESTONIA, Tel: +372 503 3659, Fax: +372 737 6152, peeter.tulviste@ut.ee. HOME ADDRESS Sihi 25, 50411 Tartu ESTONIA, Tel: +372 730 4706. Married, son and daughter.

Enn TÕUGU, born 20.05.1935, elected 1981, informatics. Tallinn University of Technology 1958. Consultant, Institute of Cybernetics at Tallinn University of Technology (2005); Akadeemia tee 21, 12618 Tallinn ESTONIA, Tel: +372 620 4212, tyugu@ieee.org. HOME ADDRESS Lossi 18/Soone 3-18, 12616 Tallinn ESTONIA, Tel: +372 672 6526. Married, son and two daughters.

Raimund-Johannes UBAR, born 16.12.1941, elected 1993, computer science. Tallinn University of Technology 1966. Professor of Computer Engineering and Diagnostics, Tallinn University of Technology (2005), Akadeemia tee 15a, 12618 Tallinn ESTONIA, Tel: +372 620 2252, Fax: +372 620 2253, raiub@pld.ttu.ee. HOME ADDRESS Õismäe tee 45-77, 13514 Tallinn ESTONIA, Tel: +372 657 4732. Married, daughter.

Raivo UIBO, born 21.12.1948, elected 2003, medicine. University of Tartu 1973. Professor of Immunology, University of Tartu (1992); Ravila 19, 51014 Tartu ESTONIA, Tel: +372 737 4231, Fax: +372 737 4232, raivo.uibo@ut.ee. HOME ADDRESS Taara pst 28, 51006 Tartu ESTONIA, Tel: +372 742 1150. Married, two daughters.

Jaan UNDUSK, born 14.11.1958, elected 2007, humanities. University of Tartu 1982. Director, Under and Tuglas Literature Centre, Estonian Academy of Sciences (2000); Roosikrantsi 6, 10119 Tallinn ESTONIA, Tel: +372 644 3147, jaan@utkk.ee. HOME ADDRESS Lätte 5-10, 10116 Tallinn ESTONIA, Tel: +372 644 7565. Married, three daughters and son.

Mart USTAV, born 16.07.1949, elected 2001, biomedicine. University of Tartu 1972. Director (2012), Professor of Biomedical Technology (2007), Institute of Technology, UT; Nooruse 1, 50411 Tartu ESTONIA, Tel: +372 737 5047, mart.ustav@ut.ee. HOME ADDRESS Jaama 58A, 50604 Tartu ESTONIA, Tel: +372 740 3312. Married, son and three daughters.

Tarmo UUSTALU, born 19.01.1969, elected 2010, computer science. Tallinn University of Technology 1992. Researcher, Institute of Cybernetics, Tallinn University of Technology (2009); Akadeemia tee 21b, 12618 Tallinn ESTONIA, Tel: +372 620 4250, Fax: +372 620 4151, tarmo@cs.ioc.ee. HOME ADDRESS Kalda 60a-5, 10922 Tallinn ESTONIA, Tel: +372 672 1215. Married, son and two daughters.

Gennadi VAINIKKO, born 31.05.1938, elected 1986, mathematics. University of Tartu 1961. Professor emeritus, University of Tartu (2006); J.Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 5490, gennadi.vainikko@ut.ee. HOME

ADDRESS Kivi 23-19, 51009 Tartu ESTONIA, Tel: +372 510 7101. Widower, two sons and daughter.

Urmas VARBLANE, born 20.07.1961, elected 2009, economics. University of Tartu 1984. Professor of International Business and Innovation, University of Tartu (2001); Narva mnt 4, 51009 Tartu ESTONIA, Tel: +372 737 6361, Fax: +372 737 6327, urmas.varblane@ut.ee. HOME ADDRESS A. Starkopfi 11-6, 51011 Tartu ESTONIA, Tel: +372 733 1006. Married, son and two daughters.

Eero VASAR, born 17.09.1954, elected 2010, medical science. University of Tartu 1979. Head of Department of Physiology (1991), Professor of Physiology, University of Tartu (1992); Ravila 19, 50411 Tartu ESTONIA, Tel: +372 737 4331, Fax: +372 737 4332, eero.vasar@ut.ee. HOME ADDRESS Hurda 27, 51005 Tartu ESTONIA. Married, four sons.

Mihkel VEIDERMA, born 27.12.1929, elected 1975, inorganic chemistry. Tallinn University of Technology 1953. Professor emeritus, Tallinn University of Technology (1997). HOME ADDRESS Jääraku 54, 12015 Tallinn ESTONIA, Tel: +372 623 8757, mihkel.veiderma@akadeemia.ee. Widower, two daughters.

Richard VILLEMS, born 28.11.1944, elected 1987, biophysics. University of Tartu 1968. Lead. Researcher, Estonian Biocentre (2014); Riia 23b, 51010 Tartu ESTONIA, Tel: +372 737 5064, rvillems@ebc.ee. HOME ADDRESS Pallase pst. 126-3, 51013 Tartu ESTONIA. Married, son and daughter.

Jaak VILO, born 14.11.1966, elected 2012, informatics. University of Tartu 1991. Professor of Bioinformatics, University of Tartu (2007); J.Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 5483, Fax: +372 737 5468, jaak.vilo@ut.ee. HOME ADDRESS Kalevi 4-26, 50409 Tartu ESTONIA. Married, son and two daughters.

Haldur ÕIM, born 22.01.1942, elected 1994, humanities and social sciences. University of Tartu 1965. Professor emeritus, Extraord. Senior Researcher, University of Tartu (2007); J.Liivi 2, 50409 Tartu ESTONIA, Tel: +372 737 6143, Tel/Fax: +372 737 5224, haldur.oim@ut.ee. HOME ADDRESS Hiie 12, 51006 Tartu ESTONIA, Tel: +372 742 2272. Married, son and two daughters.

Andres ÕPIK, born 4.05.1947, elected 2013, engineering. Tallinn University of Technology 1970. Member of Governors Board (2015), Professor of Physical Chemistry, Tallinn University of Technology (1992); Ehitajate tee 5, 19086 Tallinn ESTONIA, Tel: +372 620 2802, andres.opik@ttu.ee. HOME ADDRESS Trummi 21-8, 12617 Tallinn ESTONIA, Tel: +372 511 6538. Married, 2 daughters.

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Steven Richard BISHOP (UK), born 18.10.1955, elected 2012, nonlinear dynamics. Professor of Nonlinear Dynamics, University College London (1984). Gower Street, London WC1E 6BT, UNITED KINGDOM, Tel: +44 207 679 3082, s.bishop@ucl.ac.uk.

Jonathan (John) R. ELLIS (United Kingdom), born 1.07.1946, elected 2015, theoretical physics. Professor of Theoretical Physics, King's College London (2010); Dept. of Physics, King's College London, Strand, London WC2R 2LS, UNITED KINGDOM, Tel: +41 22 76 74142, John.Ellis@cern.ch. HOME ADDRESS 5 Chemin du Ruisseau, Tannay, 1295 Switzerland, Tel: +41 22 77 64858. Married, son and daughter.

Richard R. ERNST (Switzerland), born 14.08.1933, elected 2002, physical chemistry. Professor emeritus, Swiss Federal Institute of Technology, Zürich (1998). Laboratory of Physical Chemistry, ETH-Hönggerberg HCI, CH-8093 Zürich, Switzerland, Tel: +41 44 632 4368, Fax: +41 44 632 1257, ernst@nmr.phys.chem.ethz.ch. HOME ADDRESS Kurlistrasse 24, CH-8404 Winterthur, SWITZERLAND, Tel: +41 52 242 7807. Married, son and two daughters.

Cornelius Theodor HASSELBLATT (Netherlands), born 17.08.1960, elected 2015, literature and culture. Freelance scholar of Finno-Ugric languages and culture (2015). HOME ADDRESS Boslaan 7a, 9801 HD Zuidhorn, NETHERLANDS, cornelius@hasselblatt.com. Married.

Carl-Olof JACOBSON (Sweden), born 24.04.1929, elected 1995, developmental biology. Professor emeritus, Uppsala University (1994). HOME ADDRESS Norra Rudbecksgatan 13, SE-75236 Uppsala, SWEDEN, Tel: +46 18 501 123, carl-olof.jacobson@ebc.uu.se. Married, two sons and daughter.

Antero JAHKOLA (Finland), born 05.02.1931, elected 1998, energy research. Professor emeritus, Helsinki University of Technology (1994). HOME ADDRESS Hiisikuja 4 D 24, FI-00730 Helsinki, FINLAND, Tel: +358 9 724 9144; +358 400 102302, antero.jahkola@elisanet.fi. Married, son and daughter.

Charles Gabriel KURLAND (USA/Sweden), born 14.01.1936, elected 1991, biochemistry. Professor emeritus, Uppsala University (2001). HOME ADDRESS Munkarpsväg 21, SE-24332 Höör, SWEDEN, Tel: +46 41 322 856, kurland@tele2.se. Married, three daughters.

Jaan LAANE (USA), born 20.06.1942, elected 1995, chemical physics. Professor, Texas A&M University (1976); Department of Chemistry, College Station, TX 77843-3255, USA, Tel: +1 979 845 3352, Fax: +1 979 845 3154, laane@mail.chem.tamu.edu. HOME ADDRESS 1906 Comal Circle, College Station, TX 77840, USA, Tel: +1 979 693 5171. Married, two daughters.

Ülo LANGEL (Sweden/Estonia), born 2.03.1951, elected 2015, neurochemistry. Professor of Neurochemistry and Molecular Neurobiology, Stockholm University (2001), Professor of Biotechnology, University of Tartu (2007); Dept. Neurochemistry, Stockholm University, S.Arreniusv. 16B, room C466, S-106 91 Stockholm, SWEDEN, Tel: +46 8161 793, Fax: +46 8161 371, ulo@neurochem.su.se. HOME ADDRESS Tegnér lunden 4, S-11359 Stockholm, Sweden, Tel: +46 707 905 284. Married, son.

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ESTONIAN ACADEMY PUBLISHERS

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Estonian Academy Publishers continued in 2015 regularly issuing seven scientific journals that are peer-reviewed and indexed and abstracted in international review publications and databases. All journals have an international editorial board. In the Estonian Research Information System ETIS administered by the Estonian Research Council, all journals have been placed in category 1.1.

As compared to the previous year, the number of journals dropped by one item, because at the end of 2014 the Board of the Estonian Academy of Sciences made the decision to close the journal *Estonian Journal of Ecology* and merge the respective articles in two journals: the *Proceedings of the Estonian Academy of Sciences* and *Estonian Journal of Earth Sciences*. The Publishers' mission has been to maintain a high standard as regards the contents of journals, their typographic performance, their timely release both electronically and in hard copy.

In 2015 the journals were issued in the following volume:

Title	Number of issues per year	Total volume in pages	Format of journal
<i>Acta Historica Tallinnensia</i>	1	124	168×240
<i>Estonian Journal of Archaeology</i>	2	172	168×240
<i>Estonian Journal of Earth Sciences</i>	4	316	210×285
<i>Linguistica Uralica</i>	4	320	168×260
<i>Oil Shale</i>	4	392	168×255
<i>Proceedings of the Estonian Academy of Sciences</i>	7	584	210×285
<i>Trames</i>	4	402	168×240
Total	26	2,310	

Information on journals and full texts of articles published in all journals since 2006 are freely available on the Publishers' website www.kirj.ee. Full texts

are distributed also by well-known electronic publishers and portals: EBSCO, C.E.E.O.L., The Gale Group Inc., ProQuest LLC, H.W.Wilson (merged with EBSCO), Digital Publication with the Leading Asian Distributor (Airiti Inc.) and Join CNKI Scholar (China). For the above portals the Publishers produce and transmit the following electronic versions of articles: PDF files, two kinds of SGML files, three types of XML files and a special file for the online library C.E.E.O.L.

Texts of articles issued earlier in our journals have been digitised and uploaded to Google Drive. Respective links have been placed on the Publishers' website.

The Academic Library of Tallinn University has digitised the publications of the Estonian Academy of Sciences in the period 1945-1991 and plans to make them accessible in the intranet of the Library. The academic community would much prefer having them publicly available, but there is a predicament about the copyright, regrettably. The copyright is held by the publishing house *Perioodika* that had been exclusively authorised to issue periodicals during the time. *Perioodika* has gone out of business, without a legitimate successor existing.

All scientific articles of the journals have been supplied with the DOI indexes (Digital Object Identifiers). CrossRef statistics shows that the rate of search for articles by DOI has been increasing steadily, in some months it tops 2,000 cases. Such availability of full texts in multiple places increases the readership and citation.

All seven journals issued by the Publishers have been included in Elsevier BV Bibliographic Database (SCOPUS®) that is used in many countries as the benchmark of research efficiency.

Six journals are reflected in the database of Thomson Reuters Web of Science® Core Collection:

Acta Historica Tallinnensia

Estonian Journal of Archaeology

Estonian Journal of Earth Sciences

Proceedings of the Estonian Academy of Sciences

Oil Shale (listed also in Current Contents®)

Trames. A Journal of the Humanities and Social Sciences.

Three journals are in the database ERIH:

Acta Historica Tallinnensia

Estonian Journal of Archaeology

Linguistica Uralica

In 2015 as usual several special issues of journals were released, fewer than in the previous years, however bulkier. It is an universally recognised way to publish materials of international conferences, providing an opportunity to document, in a compact format, the results of research related to Estonia.

The following special issues were published:

1. Estonian Journal of Earth Sciences 64/1: Special Issue: IGCP 591: The Early to Middle Palaeozoic Revolution. Guest editors Kathleen Histon and Živilė Žigaitė.
2. Proceedings of the Estonian Academy of Sciences 64/1S: Special issue on polymer science. Guest editor Andres Öpik.
3. Proceedings of the Estonian Academy of Sciences 64/3: Special issue on complexity of nonlinear waves. Guest editors Andrus Salupere and Gérard A. Maugin.
4. Proceedings of the Estonian Academy of Sciences 64/3S: Special issue on complexity of nonlinear waves. Guest editors Andrus Salupere and Gérard A. Maugin.
5. Proceedings of the Estonian Academy of Sciences 64/4S: Selected papers of the 9th International DAAAM Baltic Conference 'Industrial Engineering'. Guest editor Tauno Otto.

In 2015, in total 205 pieces of writing were released in 26 issues of seven journals, of them 184 scientific articles and 21 short communications. All journals in hard copy appeared under schedule. The electronic version appeared on average one month prior to the date set for the hard copy, actually meaning pre-posting of the electronic version.

The number of authors totalled 410, of whom 156 were Estonian authors and 254 foreign authors. The majority of articles appeared in English, except the journal *Linguistica Uralica*, featuring also articles in Russian and German, and *Acta Historica Tallinnensia* in Estonian with comprehensive summaries in English and one article in English.

Two publications appeared as commissioned:

Elu raamatute keskel. Endel Annus 100 [A Life among Books: Endel Annus 100]. Editor-in-Chief Anne Valmas. Format 168 x 240, volume 160 pp., hard cover.

Emakeele Seltsi aastaraamat 60 [The Yearbook of the Estonian Mother Tongue Society 60]. Editor-in-Chief Mati Ereht. Format 143 x 215, volume 312 pp., hard cover. (Full text of the book is also available on the Publishers' website.)

In view of the means available and circumstances prevailing in 2015, the year can be considered satisfactory. Limited resources and detection of new qualified staff members (English editors for science text and layout editors proficient in TeX/LaTeX software) are still two main challenges.

UNDER AND TUGLAS LITERATURE CENTRE OF THE ESTONIAN ACADEMY OF SCIENCES

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

Personnel: 15, including 11 researchers

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Under and Tuglas Literature Centre of the Estonian Academy of Sciences is an institution of research and development. Its mission is to study Estonian literature and the local written culture in general, both in historical and theoretical perspectives, within the context of historically multilingual Baltic space as well as world literature. It promotes literary and cultural thought in line with contemporary trends in textual research (discourse analysis, rhetorico-narratological models of culture, postcolonial theory and the theory of cultural transfer, treatment of 'entwined histories', memory and gender studies). Under scrutiny beside fiction and theatrical texts are various historiographical, philosophical, publicist and scientific modes of self-expression in Estonian and German, insofar as they have played a decisive role in the Baltic literary space, as well as relevant texts of European history of ideas, which have influenced the course of thinking both in the universal embrace and in the Baltic. In this context, the history of certain basic concepts and models of thought of the whole of Europe is considered (tradition of antithetic thinking, the concept of infinity, decadence, soliloquy-style of writing, grotesque).

In the process of its development activities, the Literature Centre publishes original researches and source materials of Estonian written culture, maintains the library and art collection of historical value, organises conferences, exhibitions and cultural events of general importance (the ceremony of Friedebert Tuglas prize for the best Estonian short story, annual prizes of the literary magazine *Looming*, events of the Scientists' House, etc.). The Museum Department of the Literature Centre in Nõmme administers the legacy of the writer F. Tuglas

and other collections (incl. the Tuglases' literary and art collection, and the library and art collection of Artur Adson and Marie Under, which arrived in Estonia in 1996, the art collection of the Estonian Cultural Foundation in the USA, Paul Reets' literary and art collection), as well as the house and garden of dendrological value attached to it; it carries out lecture-excursions and serves individual researchers and visitors.

The major areas of research of the Literature Centre are:

- Estonian literature and culture in the 20th C. (including the works of F.Tuglas, M.Under and A.Adson),
- Older Estonian and Baltic German written culture in the 13th-19th C., German legacy in the development of modern Estonian culture,
- Mechanisms of cultural identity (autogenesis, cultural transfer, entwined histories),
- Baltic literary space and Estonian–Latvian–Finnish literary relations,
- Rhetorical and discursive models for description of European and Estonian culture,
- Drama and theatre research.

Since 2014 the Literature Centre has been fulfilling the institutional research topic ENTWINED LITERATURES: DISCURSIVE HISTORY OF LITERARY CULTURE IN ESTONIA (2014-2019, project leader J.Undusk). The emergence and development of literary culture on the Estonian territory is seen as an entwined process (*histoire croisée*), reflecting intertwined relationships between manifold ethnic, colonial, cultural, etc. impulses, involving criss-cross patterns, resistances, and inertias. The character of investigation is predominantly discourse-based and follows the lines of important 'territories of speech' (history, religion, environment, intimacy, etc.) apparent in multilingual society. A comprehensive rewriting of the literary history of Estonia in the 13th-19th CC. is aimed at, while integrating into it the rich German component. Modernity is examined in tension with national strivings as a time of diverse emancipations; attention is paid both to the social figures (decadent, upstart, artist) as well as the figures of thought (autonomy, time, infinity). In the post-Soviet period, the 'multidirectionality' of memory culture is exemplified by fiction, film and theatre.

Since 2014, the Museum Department of the Literature Centre has carried out the research project of the national programme THE ESTONIAN LANGUAGE AND CULTURAL MEMORY II titled INTELLECTUAL HERITAGE OF FRIEDEBERT TUGLAS, MARIE UNDER AND ARTUR ADSON IN THE SPATIAL-TEMPORAL CONTEXT (2014-2018, project leader Elle-Mari Talivee). The goal is to mediate the legacy of Tuglas, Under and Adson through preparation and publication of academic editions, by organising art exhibitions, conferences, seminars, cultural events and through museum-pedagogic work. A major goal of the project is completion of the series of F.Tuglas COLLECTED WORKS, edited textual-critically

and supplemented with scholarly forewords and commentaries. In 2015, the SCIENTIFIC COLLECTIONS (CULTURAL HISTORY COLLECTIONS) OF THE UNDER AND TUGLAS LITERATURE CENTRE of the Museum Department were supplied with funds as before, to maintain their scientific-cultural value, to guarantee their organisation, and creation of user-friendly environment in the database MuIS.

Research team of the Estonian Science Foundation's grant HISTORY OF BALTIC FOOD CULTURE: PRODUCTION, CONSUMPTION AND CULTURE IN THE LIGHT OF ENVIRONMENTAL HISTORY (2012-2015) concerned with the history of regional food culture in cross-national perspective and headed by senior researcher of Literature Centre, Professor of Tallinn University Ulrike Plath completed successfully its work at Literature Centre. Innovative dimension of U.Plath's grant in treatment of the Baltic history consisted in trimming the history of environment with the food culture. Involved in the work of the grant team were also researchers from Tallinn University, University of Tartu and Estonian Literary Museum. In 2015, Journal of Baltic Studies released the special issue FOOD CULTURE IN THE BALTIC STATES edited by U.Plath and environmental scientist Diana Mincyte and finalising the work of the research team. The collection comprises 8 articles by researchers from Estonia, the USA, Denmark, Germany and elsewhere. U.Plath was also one of the compilers and main authors of the special issue on environmental history of the magazine *Horisont* (no. 5) (jointly with researchers from Tallinn University, the University of Tartu and Estonian National Museum). Presentation of the special issue was held on September 24 at Institute of History of Tallinn University.

Finnish Literary Society released in 2015 in the series *Studia Fennica Historica* the collective monograph NOVELS, HISTORIES, NOVEL NATIONS. HISTORICAL FICTION AND CULTURAL MEMORY IN FINLAND AND ESTONIA finalising the joint historical novel research project HISTORICAL NOVEL AS MEDIA OF THE CULTURAL HISTORY (project supervisor from Estonia senior researcher Eneken Laanes) of the Literature Centre and the Finnish Centre of Excellence in Historical Studies. Editors of the work are E.Laanes, member of faculty of Tallinn University Linda Kaljundi and project supervisor of the Finnish Literary Society Ilona Pikkanen. The book contains introductory articles from editors of the collection, foreword by Professor of Utrecht University Ann Rigney and 11 contributions by Estonian and Finnish researchers (incl. by researchers of Literature Centre E.Laanes, Aare Pilv and J.Undusk).

In 2015, Brill Publishers released a collective monograph EAST AND CENTRAL EUROPEAN HISTORY WRITING IN EXILE 1939-1989 (ed. by M.Zadencka, A.Plakans and A.Lawaty) finalising the work by the exile historical writings research team headed by Professor of Stockholm University Maria Zadencka, containing 20 articles by Swedish, USA, German, Ukrainian, Belarus, Polish,

Latvian and Estonian researchers, all focussing on East and Central European historical writings in exile during and after the WWII. Estonia was represented in the research team by J.Undusk, who authored two contributions in the volume.

In 2015, the first volume of the bulky omnibus work THE ESTONIAN WORD THEATRE 1965-1985 appeared, with editor-in-chief and one of the authors being researcher of the Literature Centre Piret Kruuspere. The book contains overviews of different manifestations of theatrical process within two decades and 17 portraits of stage-directors by a dozen authors. That handbook breaking new ground was completed as the outcome of long cooperation of the Literature Centre with State Arts School of Estonian Academy of Music and Theatre and Estonian Theatre Union (sitting on the editorial board were also head of the research team Lea Tormis, Luule Epner, Mari Tuuling and Eva-Liisa Linder). The book was presented at Estonian Theatre Union on February 17, 2016, with all parties in attendance.

In 2015, the Literature Centre organised several international conferences.

September 24-26 – VIII INTERNATIONAL SYMPOSIUM OF BALTIC GERMAN LITERARY CULTURE KONTINENT HERDER: EMPATHIE, SYMPATHIE UND ANTIPATHIE IN POETIK UND POLITIK in Tartu organised with Institute of Cultural Sciences and Arts of the University of Tartu, Institute of Political Science, Institute of Philosophy and Semiotics of the University of Tartu and Estonian Goethe-Society, attended with papers by 21 scientists from Germany, Austria, Switzerland, the USA, France, Finland, Sweden, Latvia and Estonia. Promoter from the Literature Centre of that event dedicated to ideas permeating J.G.Herder's works and their cultural impact in the Baltic States and elsewhere was J.Undusk, paper was delivered also by senior researcher Martin Klöker.

March 13-15 – CONFERENCE PSYCHOANALYSIS AND SCIENCE of the scientific network of psychoanalysis of Summer School of Nordic countries, held in cooperation with Institute of the Humanities of Tallinn University and moderated by E.Laanes, with British and Estonian researchers delivering three public lectures in Tallinn University.

May 13-15 – Spring Doctor School on the topic ANIMALS IN TRANSDISCIPLINARY ENVIRONMENTAL HISTORY in Läänemaa in the Altmõisa guest house initiated by U.Plath and organised in cooperation with Environmental History Centre, Institute of History of Tallinn University, the University of Tartu, Rachel Carson Centre (München), Cultural Sciences and Arts Doctor School and European Environmental History Society. Supervisors of the course were internationally recognised scientists from Australia, Japan, Czechia, Germany, Sweden and Estonia; papers were delivered by 6 researchers and 14 degree students from Estonia, Hungary, Germany, the USA, and Great Britain.

July 3 – U.Plath organised, at the CONFERENCE OF EUROPEAN SOCIETY FOR ENVIRONMENTAL HISTORY (ESEH) in Versailles the panel WEREWOLVES, SODOMY, AND BREAST FEEDING: TRANS-SPECIES RELATIONS AS SOCIAL PROBLEMS IN PRE-MODERN TIMES.

October 20 – The third seminar from the series CHILD IN LITERATURE held in Tallinn in cooperation with Estonian Children Literature Centre, with sub-topic THE MATTERS FROWNED UPON AND ENCOURAGED IN THE CHILDREN LITERATURE (main promoter E.-M.Talivee). It focussed on censorship and taboos in the contemporary children literature. Thematic papers were delivered by 8 researchers of children literature from Estonia, Latvia and Russia.

There were speakers from several foreign countries also at the joint seminar of the Literature Centre and Institute of the Estonian Language and Culture of Tallinn University THE WWI IN ESTONIAN CULTURE, held on April 8-9, analysing the reflections and impacts of WWI in different media of the cultural memory, incl. literature, visual culture and music, both synchronically and retrospectively. The seminar, with Jüri Kivimäe of Toronto University delivering a key paper, moderated from Literature Centre by Mirjam Hinrikus, brought together 15 researchers of different cultural areas (Literature Centre also represented by senior researcher Õne Kepp and J.Undusk, who was unable to speak in person however submitted his text to be included in the volume of conference).

December 3 – THE CONFERENCE ENTWINED LITERATURE: CULTURAL, NATIONAL AND GENRE CROSSINGS IN HISTORY OF ESTONIAN LITERARY CULTURE held in Tallinn testing the current situation of the institutional research topic fulfilled by the Literature Centre, with main moderator and editor of the volume of abstracts being Rein Undusk. The conference focussed on research of literature as textual reality entwining different discourses, and analysed the relation of Baltic German literary culture with Estonian literature, formation of national and modernist discourse in Estonia, open and hidden entwining in literary legacy of the Soviet period, entwining between different types of art and literary genres in Estonian history of culture. Besides researchers of Literature Centre (M.Hinrikus, P.Kruuspere, E.Laanes, A.Pilv, U.Plath, J.Undusk, R.Undusk) the conference was attended by researchers from Tallinn University and the University of Tartu.

June 11 – Museum of Literature Centre together with Environmental History Centre and NGO Kehra Railway Station held a GARDEN CONFERENCE ... GREEN BEATIFIC AND BLISSFUL HOPES: GARDEN AND NATURE IN THE ESTONIAN LITERATURE, with 17 researchers deliberating about the role in history of Estonian literature of garden and nature. Beside the moderator of the event E.-M.Talivee, speaking among researchers of Literature Centre were P.Kruuspere, A.Pilv and U.Plath, as well as Cornelius Hasselblatt (Groningen), elected Foreign Member of Estonian Academy of Sciences at the end 2015.

June 12 – a FIELD TRIP to Kehra was organised, with the author Tõnu Õnnepalu and Õ.Kepp deliberating at length on vital issues.

Ongoing in 2015 were regular working seminars of researchers of Literature Centre in the Roosikrantsi house and elsewhere. R.Undusk held a seminar DESCARTES, SPINOZA, LEIBNIZ: INSIGHTS INTO THE 17TH C. METAPHYSICS SEEN FROM STANDPOINT OF INFINITY (19.03). M. Klöker spoke in Tallinn City Archives on the topic EINER REVALER LIEBE AUF DER SPUR. WERKSTATTBERICHT ZUR ERFORSCHUNG DES BRIEFWECHSELS VON CASPAR MEYER UND KATHARINA VON DER HOYEN (REVAL CA. 1637-1653) (22.09). A.Pilv delivered a paper RELATIONS OF ART WITH TRUTH (30.09). Ulrike Plath's seminar was titled *HEIMAT*. BALTIC GERMAN CONCEPTUALIZATION OF HOME IN THE 19TH C. AND THE 20TH C. (16.10). P.Kruuspere spoke on the topic HISTORY AND HISTORIOGRAPHY OF THEATRE AFTER THE EXAMPLE OF ESTONIAN THEATRICAL LITERATURE (22.10). E. Laanes delivered the paper RAIMOND KAUGVER'S CAMP EXPERIENCE IN LETTERS AND LITERATURE (26.11). The outgoing seminar for 2015 on the topic A. H. TAMMSAARE'S RELATIONS WITH FRIEDRICH NIETZSCHE was moderated by M.Hinrikus (30.11).

Highlight among the popularising events were the speech by J.Undusk at Estonian National Library on MOTHER TONGUE DAY (13.03), paper by E.-M. Talivee DISGRACE AND HONOUR FROM TAMMSAARE'S AND VILDE'S VIEWPOINTS at literature seminar of Estonian National Library HONOUR AND DISGRACE IN ESTONIAN LITERATURE (30.10) and participation of A.Pilv at the meeting of minds LITERATURE AND IDENTITY, organised by the Darmstadt-based Academy of the German Language and Literature (Narva, 5.10).

In 2015, researchers of the Literature Centre delivered 47 scientific papers, of which 17 at international scientific events, incl. the following conferences: DER GOTTORFER HOFGELEHRTE ADAM OLEARIUS – NEUGIER ALS METHODE? in Schleswig in Germany (M.Klöker), annual conference of American Association for Comparative Literary Studies in Washington (E.Laanes), conference of European Network for Comparative Literary Studies (REELC/ENCLS) LONGING AND BELONGING in Dublin and Galway (E.Laanes), ETHICS OF STORYTELLING: HISTORICAL IMAGINATION IN CONTEMPORARY LITERATURE, MEDIA AND VISUAL ARTS in Turku (E.Laanes), THE 8TH EUROPEAN SOCIETY FOR ENVIRONMENTAL HISTORY BIENNIAL CONFERENCE in Versailles (U.Plath), LITERARY SECOND CITIES in Turku (E.-M.Talivee), LINGUISTICS AND LITERARY ANALYSIS: POSSIBLE BORDERS AND INTERSECTIONS in Lausanne (J.Undusk), KOTZEBUE-GESPRÄCH IV in Tallinn (J.Undusk), XI INTERNATIONALES HAMANN-KOLLOQUIUM: NATUR UND GESCHICHTE in Wuppertal (J.Undusk), BETWEEN TRUTH AND POWER. THE ROLE OF AUTHORS IN BUILDING AND CHANGING EUROPE in Riga (J.Undusk). E.Laanes delivered four lectures at Florence University on Estonian literature and memory culture.

In 2015 researchers of Literature Centre authored 22 scientific articles in foreign languages and 22 in Estonian. They published 15 research reviews and other short pieces of writing, and 15 scientific abstracts.

Researchers of Under and Tuglas Literature Centre are involved in co-operation with Estonian universities in supervising and reviewing BA, MA and PhD theses and delivering courses of lectures (E.Laanes, M.Hinrikus, U.Plath, P.Kruuspere). Research fellows participate in the work of academic council of Academic Library of Tallinn University and in completion of the collections of the Library as well as these of the Estonian National Library, and they also participate in academic council of Estonian Literary Museum. J.Undusk is member of Cultural Fund of President of the Republic of Estonia (since 2008), member of Prize Panel of National Science Prizes (since 2011), member of National Student Research Paper Prize Panel (since 2011), Chairman of Board of F.Tuglas COLLECTED WORKS (since 2010). The Literature Centre also participates in the work of several panels on fiction (F.Tuglas short story prize, Jaan Kross literature prize) and other panels (Priit Põldroos Prize). Since November 2015 E.Laanes has been member of Literature Foundation of the Estonian Cultural Endowment. Senior researcher of Literature Centre U.Plath is head of Estonian Centre for Environmental History (KAJAK) and representative of the Baltic States in European Society for Environmental History.

THE MUSEUM DEPARTMENT continued public lectures and held literary events. On January 15 the researchers watched the Vallo Kepp's documentary film *LOYALTY TO BOOK. TIME OF ALEKSANDER SIBUL* (2014), prepared as commissioned by Tallinn Central Library in connection with the 130th anniversary of its head. On February 3 the traditional dialectal poetry morning dedicated to Artur Adson was held, with Tuuli Vallisoo speaking about the life of her mother Mari Vallisoo and analysing her poetry written in Kodavere dialect (promoter Õ.Kepp). On March 2, at Friedebert Tuglas' 129th anniversary, the Museum announced the nominees of Friedebert Tuglas short story prize. The panel, where the Literature Centre was represented by M.Hinrikus, decided to award prizes for novels published in 2014 to Mait Vaik and Mart Kivastik. On September 8 there was the seminar dedicated to Henrik Visnapuu's 125th anniversary, with the dramatist Loone Ots providing an overview of the writer's dramatic writings. The seminar was seconded by an exposition of photos on stage-performances of H.Visnapuu's spectacles and the performance of the first act of Visnapuu's parlour comedy *MADAME SOHK AND SONS* by an amateur troupe. On October 21 the Museum Department of Literature Centre held the reading camp for mother tongue teachers (main promoter E.-M.Talivee), with papers delivered, short stories by Tuglas read and Riho Unt's puppet film *MASTER* (2014) drawn on the novel by Tuglas *POPI AND HUUHU* (1914) projected. Teachers were presented the educational programmes offered by Museum Department.

Since spring 2015 the Museum Department has on display in the exposition hall the exhibition THE ART-TONGUE ESTONIA: REFLECTION OF NATURE IN THE UNDER AND TUGLAS PRIVATE ABODE, composed by art critic and historian of culture Jüri Hain. In 2015 there were also set up, for the time being the temporary book expositions to study-groups visiting the house.

In 2015, twenty works from art collections of Literature Centre were on display at exhibition of the Pärnu New Art Museum REPUBLIC OF ESTONIA 100. EXILE AND OCCUPATION ART (23.01-8.03), three works at Adamson-Eric Museum-promoted exhibition CONTEMPORARY WOMAN (10.04-28.06), five works at KUMU exhibition ANTS LAIKMAA. VIGALA AND CAPRI (11.09.2015-17.02.2016) and one work at exhibition HISTORY OF ESTONIAN GRAPHICS (30.01-26.04), three works at the Haus Galerii exhibition ILSE LEETARU 100 (27.10-1.12). For display at the Eduard Vilde museum exhibition THE FREEZING AUTHOR (08.04-13.09) there were contributed eight items and at Anton Hansen Tammsaare museum exhibition CATASTROPHES. VARES-BARBARUS AT TAMMSAARE'S (30.01.2015-31.03.2016) there were contributed seven books from poetry collection of Literature Centre.

The Museum Department of the Literature Centre composed, in cooperation with Association of Museums of Estonian Authors, the travelling exposition ART OF READING, DELIGHT OF LIVING, supervised by head of the A.H.Tammsaare museum Maarja Vaino and Berit Kaschan (photos from collection of Literature Centre). Travelling exposition of drawings by A.Adson, completed in 2014 (composed by Õ.Kepp, designed by Maarja Undusk), putting on display the copies from collections of Literature Centre (37 drawings) and Estonian Literary Museum, staged in 2015 in Tartu in Oskar Luts' museum (19.03-11.04) and in Tallinn in the A.H.Tammsaare museum (1.05-30.06).

In 2015, E.-M.Talivee and Õ.Kepp carried out in the Museum Department a series of lectures THE LIFE OF M.UNDER, A.ADSON AND THE TUGLASES AT NÕMME. THE LITERARY AND CULTURAL HISTORY BACKGROUND OF THE ERA. The lectures were visited by 144 people. Visitors of other events of the Museum numbered 394. In 2015 the archival holdings of Museum Department were used for research by 67 scientists: altogether 1061 archival holdings were handed into use. In 2015, the Museum Department had 688 visitors. In October and November 2015 Museum Department enabled practice for the third year student of the Institute of the Humanities of Tallinn University Kri Marie Vaik.

In 2015, total 1,054 archival holdings were entered into the digital database MuIS: 290 photos with digital images and description of all three stages (entered in December by K.M.Vaik, working as assistant), 49 items (18 with digital images), 493 works of art (all with digital images), 222 books (entered by Ilona Rosensvald). Archival holdings with digital images number 801. Digi-database numbers the total of 20,661 items. In 2015 the Museum

started digitalising of sound recordings from CD to external disc and digitised part of the photo collection, photo albums of F.Tuglas (total 1,939 photos). Digitised have been manuscripts, maps and books currently in use at Museum Department: manuscripts of F.Tuglas' CRITIQUE III and CRITIQUE IV; A.Grenzstein's HISTORICAL ALBUM with comments by F.Tuglas; maps, designs and property recordation documents related to home of M.Under and A.Adson dating from the 1930-ies; digitising of F.Tuglas' cuts has been started; digitised has been a rare piece of printed matter belonging to Paul Reets' collection: Endel Kõks, Arnold Sepp IT IS TO BE PUT UP WITH – THERE HE IS. In 2015 the Museum Department received as a gift 20 books. 58 works were bought to the manuscript library. The proceedings of the ceremony of 2015 of F.Tuglas short story prize were sound-recorded.

The volume 14/1 of F.Tuglas' COLLECTED WORKS, containing the research ADO GRENZSTEIN'S DEPARTURE was supplied by postscript by the historian Jaanus Arukaevu; the historian Anu Pallas will compose commentaries to the work. In 2016 the work will be released in print edited by E.-M.Talivee. Volume 14/2 of F.Tuglas' COLLECTED WORKS titled SELECTED SPEECHES has undergone the first round of editing (E.-M.Talivee and the probationer K.M.Vaik). Being edited is the 15th volume of F.Tuglas' COLLECTED WORKS SELECTION OF LETTERS. Composing and editing of the volume of articles by M.Under has been finalised, ongoing is writing the scientific commentaries. The book will appear in 2016 (compiler and editor Õ.Kepp). Finalised have been the preparatory works at Paul Reets' BOOK OF LIFE. The work will appear in 2016 (Janika Kronberg, J.Undusk, J.Hain).

The Estonian campaign for cleaning LET'S DO IT held in spring at the garden of the Museum Department (25.04) was attended by 31 people.

In 2014, the Literature Centre obtained a subsidy from the project of the Centre of Environmental Investments, with the help of which, under supervision of E.-M.Talivee, a standing exposition was opened in 2015 titled THE GARDEN OF THE ADSONS AND THE TUGLASES. The outcome of this project was a study trail in the garden of M.Under, A.Adson and the Tuglases. In connection with it a piece of printed matter appeared NATURE STUDY TRAIL IN THE AUTHORS' GARDEN (edited by E.-M.Talivee). It is to be used as an aid for carrying out educational programmes.

FINANCIAL ACTIVITIES

The budget of the Estonian Academy of Sciences for 2015
and its execution (EUR)

INCOME

ALLOCATIONS TO THE ACADEMY OF SCIENCES FROM THE STATE BUDGET	1,325,992
OTHER REVENUE	111,610
ALLOCATIONS TO UNDER AND TUGLAS LITERATURE CENTRE	302,785
TOTAL INCOME	1,740,387

EXPENDITURES

GENERAL BREAKDOWN

Main activities of the Academy (through Academy Office)	576,401
Estonian Academy Publishers	257,611
Fees of Members of Academy	293,090
Contracts of research professors	100 662
Prizes, grants and medals	7,418
Scientific and Learned Societies	67,400
Membership fees to international science organisations	41,900
National Science Prize Committee	26,000
Under and Tuglas Literature Centre	302,785
TOTAL EXPENDITURES	1,670,804

ASSOCIATED INSTITUTIONS

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

One form of cooperation between the Academy and the institutions associated with it is the reciprocal exchange of information. Surveys of the activities of the institutions associated with the Academy have been published in the Academy Year Book since 1998. Included reviews differ from one another by their structural composition, exposition and scope. They are practically pre-sented in the same form as submitted, with minor modifications, suggested by the editorial board and kindly accepted by respective institution.

In connection with structural changes in Tallinn University, the association agreements were terminated in 2015 with the Institute of Ecology at Tallinn University and the Institute for International and Social Studies at Tallinn University. The association agreement was made with the Art Museum of Estonia.

Reviews on the 2015 activities of the institutions associated with the Academy have been presented in the chronological order of their association date:

Tartu Observatory	125
Academic Library of Tallinn University	128
Institute of the Estonian Language	131
Estonian Literary Museum	136
Estonian National Museum	142
Estonian Crop Research Institute	146
Art Museum of Estonia	148

TARTU OBSERVATORY

Associated with
the Estonian Academy of Sciences
8.05.1998



Founded: 1808
Personnel: 90, of whom researchers 64
Address: Observatooriumi 1, 61602 Tõravere, the Tartu Country, ESTONIA,
info@to.ee
www.to.ee
Director: Anu Reinart, Tel: +372 696 2505, Fax +372 696 2555,
anu.reinart@to.ee

Since 1.09.2015 Estonia has been the European Space Agency (ESA) 21st member state, a token of vast recognition of the capacity of Estonian research and development and potential of the companies. In the accession process of Estonia to the European Space Agency, the delegation of negotiations comprised as representative of the observatory also its director. Researchers of the observatory were active and strong partners to the Estonian Space Office and in participating in ESA research missions, Earth monitoring programmes, launching cooperation with new companies and teaching young space specialists.

The achievements in popularising science have been particularly momentous this year.

The long and devoted career of Mare Ruusalepp brought her the Tiiu Sild Memorial Lifetime Achievement Award for popularising science. She has been talking about astronomy since 1992, presenting to over six thousand people in total last year. More than 2,600 pupils have participated in our active-learning programmes. During the FESTIVAL OF LIGHTS that was organised as part of the international YEAR OF LIGHT AND LIGHT TECHNOLOGY, around 1,700 guests visited our institute in one night. Ten times as many visitors got the chance to experience the public exhibition Living UNIVERSE, prepared by our researchers for the Tallinn Television Tower. Over many years our story was again made into a documentary film HOW TO BUILD A SPACECRAFT, an exciting story about our satellite and the life of the team in the run-up to the successful launch.

The year 2015 was extremely active in terms of scientific networking – we hosted 27 different events. Among them were traditional BILATERAL ESTONIAN–FINNISH RESEARCH MEETINGS, a SUMMER ACADEMY FOR STUDENTS, the big INTERNATIONAL IUFRO LANDSCAPE ECOLOGY CONFERENCE (iufrole2015.to.ee) with 191 researchers from 33 countries, two ESA seminars, and the celebrations

of the 150th anniversary of the start of regular metrological measurements in Estonia.

Our research results have kept on the level of the past year. There were published altogether 90 articles, among them 47 category 1.1. ones.

In 2015, the Tartu Observatory continued fulfilling one target-financed research topic and started two smaller ones besides continuing new institutional research subsidy:

- QUANTITATIVE REMOTE SENSING OF VEGETATION COVERS (principal investigator A.Kuusk)
- GALAXY EVOLUTION IN THE HIERARCHICAL UNIVERSE (principal investigator E.Saar; since 1.06.2015 G.Hütsi)
- VARIABILITY AND EVOLUTION OF MASSIVE STARS IN THE GAIA ERA (principal investigator I.Kolka)
- THE ROLE OF DARK MATTER FILAMENTS IN LARGE-SCALE STRUCTURE AND ASSEMBLY OF GALAXIES (principal investigator E. Tempel)

Ongoing was scientific cooperation with the Institute of Chemical and Biological Physics within framework of Centre of Excellence DARK MATTER IN (ASTRO) PARTICLE PHYSICS AND COSMOLOGY.

Continuing among personal research subsidies was one Estonian Science Foundation grant, added to the former two and one post-doctor subsidy was one personal research subsidy:

- Grant 9428: A.Tamm – THE RATIO OF GALACTIC DISCS AND SPHEROIDS IN THE UNIVERSE
- PUT232: J.Pisek – FOR EST UNDERSTORY STRUCTURE AND SEASONAL DYNAMICS BY MULTI-ANGLE REMOTE SENSING (EST SEEDS)
- PUT246: J.Nevalainen – WHERE HAVE HALF THE BARYONS GONE?
- PUT645: E.Jakobson – AEROSOLS AND GREENHOUSE GASES CONTRIBUTION TO THE CLIMATE CHANGE IN THE BALTIC SEA REGION AND IN THE ARCTIC
- PUTJD5: T.Tuvikene – AUTOMATED EXTRACTION OF STELLAR SPECTRA FROM DIGITISED PHOTOGRAPHIC PLATES: METHODS AND APPLICATION

Besides those we carried out 10 international cooperation projects, 4 projects for modernising research apparatus, participation in 5 environmental protection and technology R&D projects, 2 environmental education projects, and we fulfilled several smaller Estonian and international projects – the total 31 different titles (besides smaller one-off agreements), which together with the related overheads covered 86% of budget. The Observatory budget had 51% of government budgetary research funding, besides 19% of the ESF funds.

Although the ESTCube-1 mission ended, it was just the start to development of our satellite technology. In 2015 the first satellite programme student Andris Slavinskis defended his doctoral thesis ESTCUBE-1 ATTITUDE DETERMINATION, continuing today his work in observatory as a Head of the Space Technology Department. His thesis was about the creation of the system to locate the ESTCube-1 position, aimed at finding the bearings of the satellite at better precision than 2° , in order to make the satellite revolving at high velocity, to roll out the sail with centrifugal force and to observe that process; to electrically charge the solar-sail in synchrony with revolving of the satellite.

Applications of sensing the atmosphere were also handled in another doctoral thesis defended and supervised in the Observatory: ESTIMATING METHODS AND VARIABILITY OF ATMOSPHERIC HUMIDITY OVER THE BALTIC REGION AND THE ARCTIC by Hannes Keernik.

A thorough overview of activities of the Tartu Observatory was published in Tartu Observatory ANNUAL REPORT 2015 and also in the traditional OBSERVATORY CALENDAR 2016.

ACADEMIC LIBRARY OF TALLINN UNIVERSITY



Associated with the Estonian Academy of Sciences 17.06.1998

Founded 1946

Personnel: 112, of whom 2 researchers

Address: Rävälä pst 10, 15042 Tallinn, ESTONIA, tlulib@tlulib.ee
www.tlulib.ee

Director: Andres Kollist, Tel: +372 665 9401, Fax +372 665 9400,
andres.kollist@tlulib.ee

Number of registered users: 45,992

Number of copies in the circulating collection: 2,613,669

The great event of a year 2015 was the official opening of Library's digitisation centre. A number of thematic events focussing on old books were held, VIII DAY OF BIBLIOGRAPHY was organised, late night study room was opened, successful cooperation with Estonian and the foreign partners continued.

The digitisation centre of Academic Library was opened on September 25, the minister of education and research Jürgen Ligi and the rector of Tallinn University Tiit Land were invited to give a speech. The guests of the event were colleagues from libraries, university rectorate and directors of institutes, cultural figures, partners, etc. Developing and opening the digitisation centre was funded by European Regional Development Fund.

Under the aegis of the old book centre, the series of presentation days were continued. Within the series of lectures INTRODUCING THE BALTICA COLLECTIONS, the specialist of rare books Heli Vahing introduced books locating in Library's cultural collections that belonged to Russian Empire nobility and prominent public figures. Second important presentation was made by the senior bibliographer Katrin Kaugver who explained the importance of Enlightenment era philosopher Johann Caspar Lavater.

The second series of events of the old book centre RESEARCHER IN THE BALTICA READING ROOM turned out to be international occasion due to the baltica scholars. In March Peter O.Büttner introduced private and school education in the end of 18th century and beginning of 19th century Europe, and Michael Rocher gave two presentations about development of higher education in 18th century Tallinn. Historian Lauri Frei brought out the relationship of writer and pedagogue Friedrich Rambach with Tallinn; Irina Rudik ended a year explaining the image of corporations in publications in Russian during First World War.

On February 16 the traditional DAY OF BIBLIOGRAPHY (8th) was held, which was dedicated to the 100th birth anniversary of bibliographer Endel Annus. On behalf of the Library, paper was presented by the head of baltica and rare books conservation department Aija Sakova-Merivee. A book LIFE IN THE MIDDLE OF THE BOOKS: ENDEL ANNUS 100 was presented, among others the book was edited by Helje-Laine Kannik ja Anne Valmas (editor in chief). A poster exhibition ENDEL ANNUS 100 was composed.

In October, the exposition LAVATER'S BOOK OF FACES. AN ENLIGHTENMENT ERA GLANCE AT PEOPLE AND ART was opened at Mikkel museum (Art Museum of Estonia), the source material for designing the exhibition and composing the associate book was digitised in the Library. Also a book PHYSIOGNOMIC FRAGMENTS TO CONVEY THE KNOWLEDGE OF HUMAN NATURE AND PHILANTHROPY was completed in cooperation with the museum.

In 2015 SECOND BALTICA SCHOLARSHIP COMPETITION was announced, amongst others a cultural researcher Irina Rudik (PhD) was chosen. The research interest of the scholar was Russian student organisations in Estonia during first half of the 20th century and image of corporations in publications in Russian during First World War. Two previous scholars Dr. Peter O. Büttner and Michael Rocher were finishing their researches during first months of the year. The Baltica scholarship to international researchers is designed to attract those scientists doing research outside Estonia, to the cultural-historical Baltica collections.

The Library held score of tours for various target groups: students of Tallinn University, international students, lecturers, and experts in the profession. The Library hosted visitors from different foreign countries. There was ongoing cooperation with Tallinn German Gymnasium, Haabersti Russian Gymnasium, Tallinn English College, the University of Tartu and Tallinn University of Technology. New cooperation agreements were made with Gustav Adolf Grammar School and Rocca al Mare School.

The reading rooms of the Library and the open access literature are continually renewed and reorganised. In connection with structural reforms of Tallinn University the Sports Library and library of TLU pedagogical seminar were liquidated, their reading materials were merged to main collection. The location of medical literature was changed, newer publications of sports science were united with medical literature and to the III floor new medicine and sports sciences reading room was formed.

In September late night study room, that is opened Mon-Fri 10-23 and Sat-Sun 10-19, was launched. In December the NIGHT LIBRARY event was organised with University students union, Study Centre was opened until 23.00. The centre was visited by over 200 readers. The event was sponsored by cafe Oaas, Löfbergs and SAKU.

In 2015, Estonian Expatriate Literature Centre was allocated from Ministry of Education and Research Compatriots Programme 10,000 euros to the project PRESERVATION AND MAKING AVAILABLE OF CULTURAL HERITAGE OF ESTONIANS IN EXILE. The extra funds enabled the Library to recruit additional labour at input of data into personal databases and finish organising the collection of the off-prints of research works.

Developing the digitisation centre continued and work processes were improved. Digital library ETERA was made public in autumn, all digitised materials are made available through this environment. In average about 35,000 pages of material was digitised and made available during one week, in the end of the year total amount was 850,476 pages.

Academic Library is member of international organisations Bibliotheca Baltica (Association of Libraries of Baltic Countries), CERL (Consortium of European Research Libraries), EAHIL (European Association for Health Information and Libraries), ICOM (International Council of Museums), IFLA (International Federation of Library Associations), LIBER (Association of European Research Libraries), HIBOLIRE (Nordic-Baltic-Russian Network on the History of Books) and Nonprofit Organisation Consortium of Estonian Libraries ELNET.

INSTITUTE OF THE ESTONIAN LANGUAGE



Associated with
the Estonian Academy of Sciences
11.05.1999

Founded 1947

Personnel: 65, of whom 11 researchers

Lexicographers, terminologists and language planners 31

Address: Roosikrantsi 6, 10119 Tallinn, ESTONIA, eki@eki.ee
www.eki.ee

Director: Tõnu Tender, Tel: +372 617 7500, tonu.tender@eki.ee

Senior researcher, Academic Secretary: Hille Pajupuu, Tel: +372 617 7500,
hille.pajupuu@eki.ee

Institute of the Estonian Language has six departments:

- Department of History of the Estonian Language, Dialects and Finno-Ugric Languages, Head Tiina Laansalu
- Department of Language Technology, Head Tõnis Nurk
- Department of Language Planning, Head Peeter Päll
- Dictionary Department, Head Margit Langemets
- Terminology Department, Head Tiina Soon
- Personnel and Administration Department, Head Kai Oro

DEPARTMENT OF HISTORY OF THE ESTONIAN LANGUAGE, DIALECTS AND FINNO-UGRIC LANGUAGES

The Department is compiling and editing two large dictionaries: SCIENTIFIC ETYMOLOGICAL DICTIONARY and DICTIONARY OF ESTONIAN DIALECTS. Of the latter, three fascicles were completed ready for print: the 25th fascicle (*maagudama–mehiläne*), the 26th fascicle (*mehine–muska*) and the 27th fascicle (*muskama–mütsakas*, see www.eki.ee/dict/ems/). The Institute is a cooperation partner at creating regional dictionaries: there appeared the Hiiu dictionary (Paul Kokla, editor Meeli Sedrik, www.eki.ee/dict/hiiu/), being compiled are the Kihnu, Mulgi and Seto dictionaries. From among dictionaries of cognate people, completed was the Dictionary of the Udmurt Language containing 10 000 entry words (portaal.eki.ee/dict/eud/).

Underway was fulfilment of the personal research project CULTURAL SHIFT IN ESTONIAN AT 17TH/18TH C., project leader Dr. Kristiina Ross. A database has been created for linguistic analysis of church hymns and folk poem. Presently the church hymn corpus contains 54,186 and the folk song corpus 53,513 text words. Under supervision of K.Ross, the concordance of Estonian biblical

translation is being completed within the national programme THE ESTONIAN LANGUAGE AND CULTURAL MEMORY II. The same programme also supports compilation of the Grammar of Dialects, project leader Jüri Viikberg.

The Department administrates, organises and replenishes the archive of Estonian dialects and Finno-Ugric languages of the Institute of the Estonian Language EMSUKA (emsuka.eki.ee/).

There was held the traditional international autumn seminar on Finno-Ugric studies, considering the relations of Estonian dialects with intimate cognate languages.

DEPARTMENT OF LANGUAGE TECHNOLOGY

In 2015 the Department fulfilled the institutional research support project IUT35-1 SPEECH STYLES, SENTENCE PROSODY AND PHONOLOGICAL VARIATION: DESCRIPTION, THEORY AND MODELLING, topic leader Dr. Meelis Mihkla; investigators: Rene Altrov, Mari-Liis Kalvik, Hille Pajupuu, Liisi Piits, Heete Sahkai. Basing on outcome of the research done, the team released the special issues of the journal *Eesti and soome-ugri keeleteaduse ajakiri* (Journal of Estonian and Finno-Ugric Linguistics) titled *Kõneuurimise suundi* (Aspects of speech studies, 2015: 6(3), see jeful.ut.ee/index.php/JEFUL/). L.Piits defended her doctoral thesis COLLOCATIONS IN ESTONIAN OF THE MOST FREQUENT WORDS CHARACTERISING MAN at the University of Tartu.

Within the National Programme for Estonian Language Technology (2011-2017) there continued the projects:

- SPEECH SYNTHESIS IMPROVEMENTS AND EXTENSION OF APPLICATIONS (EKT84), project leader Indrek Kiissel;
- Joint project with Estonian National Library, Estonian Library of the Blind and Estonian Union of the Blind AUDIO BOOKS GENERATOR AND DIGAR AUDIO INTERFACE (EKT60), project leader Meelis Mihkla;
- TOOLS FOR LEXICAL RESOURCES (EKT61), project leader Ülle Viks.

Operating as consortium of three partners (University of Tartu, Institute of Cybernetics of Tallinn University of Technology, Institute of the Estonian Language) is the Centre of the Estonian Language Resources, aiming at making available to scientists however also to all those interested in the Estonian language the digital resources and technologies of Estonian (language software, dictionaries, text and speech corpuses, language databases). At the Institute that project is supervised by Tõnis Nurk (see keeleressursid.ee/et/eesti-keeleressursside-keskus/).

DEPARTMENT OF LANGUAGE PLANNING

The main work in 2015 was the STANDARD ESTONIAN DICTIONARY 2018 and compilation of the related handbook of orthology (to be completed in 2018, by the 100th anniversary of the Republic of Estonia). The LEXICON OF FOREIGN WORDS was made available in the web-format (www.eki.ee/dict/vsl/). There appeared the collection LANGUAGE ADVICE RECOMMENDS 5 and M.Raadik's ORTHOLOGY CRIB. Over telephone, language advice was provided to 5,376 referrals, supplied an answer was to 2,943 e-mails and mailed letters. Language advice database contains 159,234 entries, 7,540 entries are available to public (*Keelenõuvakk*). Language advice website released 25 short articles, see keeleabi.eki.ee/. The database of personal names provides guidelines to declining ca. 400 surnames (see keeleabi.eki.ee/isikunimed/).

The Department continued the events dedicated to CLEAR LANGUAGE PRINCIPLES; together with the Estonian representation of the European Commission it delivered the clear message prize, see selgesonum.ee. There was released the collection of articles CLEAR COMMUNICATION (Katrin Hallik, Katre Kasemets).

The Department completed editing of the manuscript of THE BOOK OF ESTONIAN PLACE NAMES (Marja Kallasmaa, Peeter Päll). The book tentatively of 1,000 pages will appear in the first half of 2016. Topical among the name related issues are the linguistic problems arisen at implementation of the (Personal) NAME ACT and PLACE NAME ACT (conformity of first names with the Act, organisation of place names). The database of normative place names KNAB was replenished with 2,759 new entries (see www.eki.ee/knab/knab.htm/). In cooperation with the Võru Institute, there was organised, as commissioned by Ministry of Internal Affairs, for use in national place names register, 4,571 names of springs, bridges and individual objects (Marit Alas, Tiina Laansalu, Peeter Päll).

DICTIONARY DEPARTMENT

The Department continued compilation and editing of dictionaries of common Estonian. In 2015 there appeared:

- LATVIAN–ESTONIAN DICTIONARY. *LATVIEŠU–IGAUNU VĀRDNĪCA*. The dictionary was realised by support of Estonian-Latvian programme DEVELOPMENT OF ESTONIAN–LATVIAN AND LATVIAN–ESTONIAN DICTIONARY, 2012-2015. Partners: Agency of the Latvian Language (*Latviešu valodas aģentūra* – LVA), Institute of the Estonian Language. Project leader Arvi Tavast. Compiled by Merle Madisson, Aive Mandel, Tauno Nõulik and Anita Tannenberg. Institute of the Estonian Language. Foundation of the Estonian Language, 2015.

- ESTONIAN-LITHUANIAN DICTIONARY (University of Vilnius, 2015). Dictionary bases on database of the Institute THE BASIC DICTIONARY OF ESTONIAN (2014). Dictionary was composed in 2013-2015 in the Institute dictionary system EELEX. Dictionary was presented in Tallinn in the Embassy of Lithuania (October 2015).

Ongoing is editing of the one-volume (EXPLANATORY) DICTIONARY OF ESTONIAN (to be completed in 2018), project leader Margit Langemets. Dictionary contains 80,000-100,000 entry words. The Dictionary is compiled basing the newest joint corpus EstonianNC (563,000,000 words) of Estonian making recourse to web-texts, by use of Sketch Engine software. Also underway is the COLLOCATION DICTIONARY OF ESTONIAN (to be completed in 2018), project leader Jelena Kallas, with the target group being learners of Estonian (both as mother tongue and the second or foreign language). The entry words number ca. 10,000.

The base of new words and meanings (in cooperation with lexicographers of Language Planning Department) is being replenished.

TERMINOLOGY DEPARTMENT

In 2015, the main directions of work of the Terminology Department comprised updating and streamlining of the terminology bases ESTERM, MILITERM and educational vocabulary, participation in the work of terminology commissions, counselling the terminology commissions and development of euro-terminology (EU term base IATE).

In the process of updating and streamlining of the ESTERM, over 4,468 entries were reviewed, the total number of ESTERM terms tops 50,000, see <http://termin.eki.ee/esterm/>.

MILITERM. Within the framework of the military and security & defence policy terminology project, 24 terminology commission meetings were held, considering 1,258 entries.

As the result of the work of terminology commission, the term base MILITERM is being replenished, see termin.eki.ee/militerm/. Within framework of the project, our experts participated also at the work meeting of the NATO Military Committee Terminology Board (MCTB) and at the terminology conference in Brussels, project leader Tiina Soon.

EDUCATIONAL VOCABULARY. In the process of the educational terminology project, 14 terminology commission meetings were held, discussing 870 entries, project leader Eva Tamm (see www.eki.ee/dict/haridus/).

Terminologists of the Department are involved in working group of aviation terminology, operating with support of Ministry of Economic Affairs and Communications; they also participate in working groups of terminology of

economic accounting of Ministry of Finance and terminology of archaeology of Institute of History and Archaeology of the University of Tartu. Besides that we counsel the working groups of terminology all over Estonia: advice has been provided to working groups of terminology in artificial neuron networks, musical therapy, economic accounting, and therapy dogs.

PERSONNEL AND ADMINISTRATION DEPARTMENT

In 2015, a new head was elected for the institution and several related changes within the organisation took place. To map the present situation and to lay down new benchmarks, a two-day field session of leadership of the Institute was held in Haapsalu.

Kai Oro participated at Institutional Human Resources Strategy Group of the European Commission, aimed at supporting the implementation of principles of THE EUROPEAN CHARTER FOR RESEARCHERS and THE CODE OF CONDUCT FOR THE RECRUITMENT OF RESEARCHERS IN RESEARCH INSTITUTIONS, to improve the conditions of work of the researchers. The Institute carried out an opinion poll among researchers, in order to map the present position of the organisation in view of principles of THE EUROPEAN CHARTER FOR RESEARCHERS.

The image and goodwill survey of the Institute was carried out (EMOR), the results of which were presented contrastively to the similar survey held in 2010. The results are an input at designing the further public relations drive.

Within framework of the EU funded project IMPROVING AND DEVELOPMENT OF CONDITIONS OF PRESERVATION OF SCIENTIFIC ARCHIVES AND COLLECTIONS OF THE INSTITUTE OF THE ESTONIAN LANGUAGE AND CONDITIONS OF SCIENTIFIC USE OF ARCHIVE MATERIALS, the Institute acquired a new scanning system, database solution, new shelves in archives etc.

The Library of the Institute has been replenished with new books. The Institute continued systematisation of literature on history of the Estonian language, dialects and Finno-Ugric languages and their integration into database of literature of the Institute (Kai Raud), see eki.ee/biblio/index.cgi/.

Associated with the Estonian Academy of Sciences
11.05.1999

Founded in 1909 as the Archival Library of the Estonian National Museum
Personnel: 97, of whom researchers 36, librarians and bibliographers 14
Address: 42 Vanemuise St., 51003 Tartu, ESTONIA, kirmus@kirmus.ee
Director: Janika Kronberg (until 30.06.2015), Urmas Sutrop (as of 1.07.2015),
Tel: +372 520 7188, Urmas.Sutrop@kirmus.ee

In 2015, the structural units of the Estonian Literary Museum were the following:

- Archival Library with the Department of Bibliography, headed by Merike Kiipus
- Estonian Cultural History Archives, headed by Vilve Asmer
- Estonian Folklore Archives, headed by Risto Järv
- Department of Folkloristics, headed by Mare Kõiva

The first three departments administer the collections important in terms of cultural history, whereas the archival library has no independent research topic. Research in the remaining three units is carried out on the basis of funds from institutional subsidies.

PUBLICATIONS

In 2015, the Scholarly Press of the Estonian Literary Museum published 24 books and journal issues, 16 co-publications with other publishing houses and 15 e-publications. According to the Estonian Research Information System, 230 publications were related to the Literary Museum, of which 77 were research articles.

In 2015, the storage conditions of scientific collections at the Estonian Literary Museum were improved and the museum's digital preservation capabilities were enhanced.

The project for the modernisation of the equipment for the digitising centre (TAP 49-1) was completed; within the framework of the project a disc pack, servers and computers were obtained for the digitising centre and the furnishing of the photo studio was completed. The photo laboratory, digitising centre and conservation laboratory also procured new lab furniture.

Project TAP 49-2 for improving the storage conditions of scientific collections was also completed, resulting in renovations in the storage complex dating from the 1990s (building of a new repository for paintings, replacement of electrical wiring in repositories and exchange of filament bulbs for LED bulbs, improvement of ventilation system, procuring of a damping system).

ARCHIVAL LIBRARY WITH THE DEPARTMENT OF BIBLIOGRAPHY

The archival library continued work with the strategic preservation of national publications and scientific collections of old books, making them available to the general public. As of December 31, 2015, the number of publications in the collections of the archival library amounted to 1,076,397. Of these, the e-catalogue of Estonian libraries, ESTER, includes 689,537 copies (64%). In 2015, 17,829 publications were accessioned. In all, 31,670 copies were registered in the e-catalogue ESTER.

The scientific collections project, *EESTI KULTUURILOOLISE ARHIIVI JA VANARAAMATU KOGUD* (COLLECTIONS OF THE ESTONIAN CULTURAL HISTORY ARCHIVES AND OLD BOOKS), supported the registration of old books collection, maps collection, and memorial collections. As a result of the project, 280 old books were catalogued, classified, and key-worded in the e-catalogue ESTER and ca 6,000 publications were entered.

Work with the selected collections of Enn and Helga Nõu and the memorial collections of MATI UNT AND BETTI ALVER / MART LEPIK was continued. 1,800 copies were made available in the e-catalogue ESTER (mainly publications in Estonian and those with authors' inscriptions). E-processing was ongoing. The availability of ESTONIAN DIASPORA LITERATURE was enhanced, and 5,300 record series were entered into the database. Compilation of bibliographies was completed for the newspapers *Postimees* (year 1937) and *Sädemed* (year 1937). The compilation of bibliographies for the issues of the newspaper *Postimees* (year 1940) was started.

Digitising activities were successful. 4,751 pages (tif-files) of rare publications (single copies, fading texts, rarities of cultural history) were scanned. The tif-files of digitised books are archived in the file repository KIVIKE.

Several displays of publications were arranged, such as YEAR OF MUSIC: SELECTION OF MUSIC TEACHING LITERATURE IN THE COLLECTIONS OF THE ARCHIVAL LIBRARY, EASTER, MAY, MIDSUMMER DAY, SUMMERING, MUSHROOM GATHERING, NOVEMBER – COURTING MONTH. Among more important expositions, restorer Tiiu Lepasepp's personal exhibition PAPER, LEATHER, BINDING: WORKS FROM BOOK SANATORIUM deserves mentioning.

In 2015, the ESTONIAN CULTURAL HISTORY ARCHIVES (ECHA) continued the collection and work with archival materials. Several major manuscript archives from Estonia and abroad were accessioned, such as personal collections of Harri Asi, Leopold Hansen, Ülo Parbus, Abel and Silvia Nagelmaa, Harri Kiisa, Linda Poots and Viktor Masing, Mart Raud, Inno Salasoo, Hellar Grabbi, Salme Raatma-Rosenstein and Õie and Leo Utter, as well as archival materials of the literary magazine *Looming* and the Tallinn Club of Bibliophiles. By the support of the compatriots' programme, major collations were brought from

Sweden, where the archives of Harald Keiland, Liidia Tuulse, and the Estonian Culture Society in Sweden were handed over as a result of earlier agreements and negotiations. The ECHA also obtained numerous valuable single items, such as correspondence, manuscript newsletters, family chronicles, etc. The archives of Vello Ederma, Lea Tormis, Helga and Enn Nõu, and the Estonian Federation of the Blind were supplemented by new acquisitions, and the collection of biographies was supplemented by 38 new items.

The photographic collection was supplemented with materials obtained together with the materials for the abovementioned archives, with photos from the continuation project of photographing Estonian writers, and recording of numerous literary and cultural history events. The art collection was supplemented by the works of Viktor Jõgever, Vive Tolli, Pedro Krusten, etc., and the audio-visual collection obtained audio recordings and films of cultural-historic importance.

Photographer Alar Madisson arranged a travelling exhibition of 167 photos, under the heading *POOLTUND KIRJANIKUGA* (HALF AN HOUR WITH A WRITER), which displayed photos from the project of the archives concerned with photographing writers, titled *KIRJANIK JA TEMA KESKKOND* (WRITER AND THE ENVIRONMENT). In 2015 the exposition was displayed at the Estonian Embassy in Moscow and at the Russian Central Universal Scientific Library named after Nekrassov. The Literary Museum arranged displays, on the basis of the collections of the ECHA, to celebrate Eduard Vilde's 150th birth anniversary, and also on the occasion of the publication of a book titled, *MINU LAMP PÕLEB* (MY LAMP IS BURNING), dedicated to the correspondence between Betti Alver and Mart Lepik.

The ECHA continued with the IUT project *KIRJANDUSE FORMAALSED JA MITTE-FORMAALSED VÕRGUSTIKUD KULTUURILOO ALLIKATE PÕHJAL* (FORMAL AND INFORMAL LITERATURE NETWORKS BASED ON SOURCES OF CULTURAL HISTORY), supervised by Marin Laak. Leena Kurvet-Käosaar and Epp Annus achieved remarkable results in international cooperation; the latter compiled a special issue of the Journal of Baltic Studies, under the heading BETWEEN ARTS AND POLITICS: A POSTCOLONIAL VIEW ON BALTIC CULTURES OF THE SOVIET ERA. In collaboration with Australian scholar Paul Arthur, Leena Kurvet-Käosaar compiled a special issue of journal Life Writing, under the heading PRIVATE LIVES, INTIMATE READINGS. The ECHA also published a special issue of the journal *Ariadne Lõng* (Ariadne's Clew), dedicated to gender studies, and two issues of journal *Methis: Studia humaniora Estonica*. Leena Kurvet-Käosaar continued fruitful cooperation in the council of IABA Europe, the association of European auto/biographers, and collaboration with the newly established international ego-media research network was also successful. A special mention should be made of Epp Annus' extensive cooperation in the work of the international network POSTCOLONIAL INITIATIVE as well as the scholarly network of NORDIC SUMMER SCHOOLS.

A significant outcome of the ECHA research is text-critical publications of archival sources. Kristi Metste and Eve Annuk's several years' research resulted in a book *MINU LAMP PÕLEB* (MY LAMP IS BURNING), dedicated to the correspondence between Betti Alver and Mart Lepik; Rutt Hinrikus published in the Litteraria series a commented text-critical work under the heading *MARIE UNDERI PÄEVIKUD 1922-1957* (MARIE UNDER'S DIARIES 1922-1957). Preparations for a new text-critical publication about the correspondence of Johannes Semper and Johannes Barbarus are under way.

The ESTONIAN FOLKLORE ARCHIVES (EFA) continued, as the main activity, studying, collecting, preservation, and systematisation of folklore, as well as mediation of our voluminous folklore collections by means of research, source publications and digital archives to the general public of Estonia. It is paradoxical that there is no permanent financing for collection work or introducing folklore collections as Estonian cultural heritage, which are the main missions and statutory objectives of the EFA; on the other hand, people cannot be employed project-based, as this work requires dedication, good knowledge of collections and scientific competence. The development of digital archiving, which is inevitable nowadays, also requires specific knowledge and skills.

The scholarly work of the archives is framed by the institutional research funding (IUT) project, *FOLKLOOR KULTUURILISE KOMMUNIKATSIiooni PROTSESSIS: IDEOLOOGIAD JA KOGUKONNAD* (FOLKLORE IN THE PROCESS OF CULTURAL COMMUNICATION: IDEOLOGIES AND COMMUNITIES), which studies both the functioning processes of folklore and the formation and role of folklore collections in society, in the impact fields of different ideologies, throughout times (project manager Mari Sarv). In addition to scholarly articles, the researchers of the EFA published two monographs: Andreas Kalkun's *SETO LAUL EESTI FOLKLORISTIKA AJALOOS. LISANDUSI REPRESENTAASIOONILOOLE* (SETO SINGING CULTURE IN THE STUDIES OF ESTONIAN FOLKLORE: A SUPPLEMENT TO THE HISTORY OF REPRESENTATION), and a voluminous study *KIHNU TANTSUD* (DANCES FROM KIHNU ISLAND) from Ingrid Rüütel in collaboration with Sille Kapper (Tallinn University). Ingrid Rüütel received the Lifetime Achievement Award of the Cultural Endowment of Estonia for the preservation and development of Estonian folk culture.

In 2015, the researchers of the EFA also published several scholarly and popular source publications based on the materials of folklore collections: books, audiovisual materials, online publications and collections. Mall Hiimäe completed her commented publication, *VIRUMAA VANAD VAIMUJUTUD* (OLD GHOST STORIES FROM VIRUMAA), in collaboration with the Viru Institute, I. Rüütel published a book on the basis of materials she had collected herself, titled *SAAREMAA LAULE JA LUGUSID* (SONGS AND STORIES FROM SAAREMAA), and an audio-video publication *MUHU RAHVAMUUSIKAT, LAULUMÄNGE JA TANTSE* (FOLK

MUSIC, SONG PLAYS AND DANCES FROM MUHU); A.Kalkun compiled a book of stories by Seto narrator Feodor Vanahunt, *ILOSA' JA POGANA 'JUTU'* (in the series *Kirävara* published by the Seto Institute), and Anu Korb published a book *ROOSI SIBERI LOOD* (ROOSI'S STORIES FROM SIBERIA), dedicated to the Siberian folklore collector Rosalie Ottesson. The joint fairy tale project of the EFA and the Tartu University yielded a commented collection under the heading *USSI NAINI. MUINASJUTTE SOOVIDE TÄITUMISEST* (SNAKE'S WIFE: FAIRY-TALES ABOUT WISHES COME TRUE), and a web publication in collaboration with the NGO Väike Hellero, *VADJA JA ISURI RAHVALLAULUD* (VOTIC AND IZHORIAN FOLK SONGS) was compiled by Janika Oras and Kadi Sarv. Helen Kõmmus completed a book based on oral lore, written memories and archival documents about the rescuing of the crew of the Finnish schooner Gullkrona, *ELUTÖÖ ÜHE ÖÖGA* (LIFE WORK IN ONE NIGHT) (in collaboration with the Sõru Museum in Hiiumaa), and a family book *IUMA VÄGIMIHE LEIGRI SEIKLUSED* (ADVENTURES OF LEIGER, HERO OF HIIUMAA). In collaboration with the Department of Folklore of the University of Tartu and the Estonian National Museum, the international scholarly Journal of Ethnology and Folkloristics is being published.

The series of conferences on digital humanities, initiated by the EFA, resulted in an international conference in 2015, in collaboration with the Department of Folkloristics of the ELM (organised by M.Sarv and Liisi Laineste). International cooperation with the network of Nordic and Baltic folklore archives has gained impetus (initiators A.Goršič and R.Järv), as has work in the archives working group of the international professional organisation SIEF (secretary of the working group A.Goršič).

As a significant innovation in archival work, an environmental module was created at the digital file repository KIVIKE, which enables to assemble on one website archival materials related to one topic or region, and where the users can also contribute to deciphering and key-wording of manuscripts or sound recordings. Throughout 2015, the manuscript collection of the EFA increased considerably (6,795 pages, 117 record series), more than 10,000 photos were added to the series of digital photos, 285 sound record series (2,980 pieces) and 25 film record series were accessioned; the curators of material archiving are archivists Kadri Tamm and Olga Ivaškevitš.

DEPARTMENT OF FOLKLORISTICS continued basic studies of Estonian beliefs and religions (sacral places and objects, a new wave of pilgrimages, connections between health behaviour and magic, the role of mediums in society, manifestations of web religions, etc.). Source and method-critical approach of earlier treatments played an important role. Studies of narrative theory and figurative speech as well as interdisciplinary topics yielded good results (ethnobotanical studies, so-called ecological turn in society, visual and medical narratives, rumours, caricatures in 1930-1980), as did observation of

online manifestations in the globalising world (treatments from figurative speech to anger speech, humour and reflections of political events in the world media space).

A remarkable part of the work was connected with joint studies with foreign partners. Cooperation agreements were concluded with the Centre for Studies of Culture, Language and Literature at the National Academy of Sciences of Belarus (cooperation is supported by the Academy of Sciences in both countries, as well as the Estonian–Belorussian cooperation programme), and with the Udmurt Institute of History, Language and Literature. Estonian–Bulgarian and Estonian–Polish projects are also ongoing, dedicated to religious and humour studies respectively; in 2015 the Estonian–Finnish–Slovenian joint project on media publications ended. Jelena Popova and Galina Gluhhova from Udmurtia, Saša Babič from Slovenia, Liisa Granbom-Herrnänen from Finland, Ekaterina Anastasova, Mila Maeva and Svetoslava Toncheva from Bulgaria worked at the department as guest researchers.

Most important publications to be mentioned are Dagnosław Demski, Liisi Laineste and Kamila Baraniecka-Olszewska's book titled *WAR MATTERS. CONSTRUCTING IMAGES OF THE OTHER (1930S TO 1950S)*, *MAGIC IN RITUALS AND RITUALS IN MAGIC* in cooperation with the University of Innsbruck and the SIEF Ritual Year Working Group (compilers Tatiana Minniyakhmetova and Kamila Velkoborska); Anneli Baran compiled as the 9th issue of REETOR series *UURIMUSI TÄNAPÄEVASEST KUJUNDKEELEST* (*STUDIES OF MODERN FIGURATIVE LANGUAGE*).

Researchers organised international conferences and seminars in Estonia and abroad, and participated in big forums and working groups. The most novel results and objectives of the humanities were mediated by the 59TH *KREUTZWALD DAYS' CONFERENCE* organised by the Estonian Literary Museum and the Centre of Excellence in Estonian Studies on December 16 and 17, 2015, under the heading *DIALOGID – I. KOMMUNIKATSIOON, POLIITIKA, TEKSTILOOME* (*DIALOGUES – I. COMMUNICATION, POLITICS, TEXT CREATION*).

Fieldwork was carried out in Kosovo, Rumania, Ukraine, Bulgaria and Estonia (the Saaremaa Island).

The department's databases were developed intensively, and six new databases were opened (verse riddles, Estonian masking traditions, β -versions, pets, children's humour, horror stories), as well as several web-pages proceeding from research needs (Slovenian folkloristics and ethnology, Bulgarian masking traditions). The corpuses were supplemented by 15,000 new legend texts. Also, the digitisation of textbooks and treatments of the history of Estonian folkloristics as well as the scholarly materials by I. Paulson was completed, and a major portal of calendar folklore was being developed.

ESTONIAN NATIONAL MUSEUM



EESTI RAHVA
MUUSEUM

Associated with the Estonian Academy of Sciences
21.12.2006

Founded in 1909

Personnel: 109, of whom researchers 18

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Director: Tõnis Lukas, Tel: +372 735 0403

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In 2015 of the utmost importance for the Estonian National Museum was preparing of permanent and temporary exhibitions together with educational programs in the new building, among others completion of new expositions on Estonian cultural history and Finno-Ugric cultures.

The focus of activities of the Museum has broadened in embrace. When creating the permanent exhibition of Estonia, the folk-culture and ethnology centred approach to the 19th and 20th C. has been shifted to Estonian everyday life during the whole history of settlement from Middle Stone Age to the present time. Creation of permanent expositions bases on cooperation of many areas of research. Involved in preparing exhibitions have been researchers from the areas of humanities, social, natural and exact sciences of the University of Tartu, Department of Textile of the Tartu Art College, Estonian Native Crafts department of the Viljandi Culture Academy of the University of Tartu, Innovation and Entrepreneurship Centre of Tallinn University of Technology MEKTORY (Modern Estonian Knowledge Transfer Organisation for You), as well as from many institutes and museums like Estonian Centre for Environmental History of the Tallinn University, Institute of History and Centre of Medieval Studies of the Tallinn University, Estonian Literary Museum, the Institute of the Estonian Language and the National Institute for Health Development. A significant outlet for popularising science has been provided to linguists, archaeologists, environmental historians and folklorists. The Museum is turning into a centre for knowledge transfer, bringing together the entrepreneurial and creative economy sectors, besides cultural experts.

RESEARCH AND COLLECTION WORK

In 2015 the researchers of the Estonian National Museum participated in fulfilling three grant projects supervised by the University of Tartu, and in two international cooperation projects. The topics researched are information society, cultural shifts and ethnicity in the context of the Estonian people and Finno-Ugric nations. 2015 saw out the Estonian Science Foundation funded

research project ETHNICITY, NATION BUILDING AND NATIONALITIES POLICY IN SOVIET AND POST-SOVIET RUSSIA: THE FINNO-UGRIANS (ETF 9271, 2012-2015, jointly with the University of Tartu). At the end of year, the Golden Prize of the journal *Akadeemia* was awarded to article by Indrek Jääts ESTABLISHMENT OF KOMI NATIONAL TERRITORIAL AUTONOMY (*Akadeemia* 2015 no.1, pp.52-75; no.2, pp.314-342) released with support of the project. In international consortiums a number of H2020 applications and the programme HERA applications were prepared, which met with approval of reviewers in intense competition however nonetheless went without the funding agreement.

In 2015 researchers of the Museum authored 25 scientific articles (of them 3 in category 1.1). Jointly with Estonian Institute of Humanities of Tallinn University there was released the international peer-reviewed collection of scientific articles HOPELESS YOUTH!, analysing the contemporary urban youth cultures. 21 papers were delivered at international academic conferences and 5 papers in national conferences.

Researchers and curators of the Estonian National Museum are experts in the area, participating in international scientific cooperation projects and in advisory and consultation activities of applied research direction. During the year they delivered popular research presentations, public lectures and spoke up at various events. Cultural Heritage Study Centre organised almost 30 workshops and supervised the activity of the school of folk costumes. Besides practical instructions, 2015 witnessed also the release of the complemented issue of the book by Aino Voolmaa and Melanie Kaarma ESTONIAN FOLK COSTUMES I-III.

Lectures were delivered at the University of Tartu, Viljandi Culture Academy, Tartu Art College and other educational institutions. Researchers supervised and reviewed 15 bachelor, master and doctoral theses. In 2015 researchers and curators of the Estonian National Museum participated also in the activity of specialist organisations, councils and commissions.

Research in the direction of Estonian and Finno-Ugric ethnology is related also to replenishment of the museum collections. The collection activity focussed on collection of items and photos concerning modern everyday culture, with emphasis on consumption culture, information society, religious life and food culture. Growing attention at documenting the society has been directed at collection of audio and video materials and development of direction of visual anthropology. For instance, within research of the Soviet period there were carried out over 20 Estonian and Russian biographical interviews, changes in everyday life in Estonia in the second half of the 20th C. were scrutinised, tangible and photo material was collected. In the Finno-Ugric research direction the Museum was engaged with modern minority communities and basing on needs of permanent exhibitions, also with collection of handicraft and clothing. Fieldwork, involving audiovisual documentation, was carried out at the

Vepsian territories, monitoring contrastively also the results from the fieldwork carried out 50 years earlier at the same area. Basing on the collected material a documentary film, handling cultural shifts will be made. With the Estonian National Museum annual conference EXPEDITIONS TO THE EAST: RESEARCH TRIPS OF THE SCIENTISTS IN THE HUMANITIES OF THE ESTONIAN SSR TO THE COGNATE PEOPLES we continued the research direction into history of the humanities in the Estonian National Museum. Due to its topicality, the conference also became a nominee of Estonian annual museum awards.

MUSEUM ACTIVITY AND ORIENTATION TO THE PUBLIC

The construction of the new Museum building and preparations for its inauguration in September 2016 is on its home stretch. Completed have been the new Museum development plan and the administration structure, meeting the needs of the new building. Also launched has been presentation of the new building to associated groups and stakeholders, starting from participants at CONGRESS OF THE YOUTH ASSOCIATION OF FINNO-UGRIC PEOPLES MAFUN to foreign ambassadors residing in Estonia. In the third year of construction, the exhibition halls received also the first exhibit.

Many activities in the Museum have been suspended since summer 2015 for the moving period. Closed down have been the collections of the Museum, including artefacts, as well as specialist library and archives, being packed for moving. A major part of the collections of items and photos of the Museum are until opening in the new building usable in the web in Museums Information System MuIS (www.muis.ee). The doors were closed in the Estonian National Museum current exhibition house and permanent exhibition ESTONIA. LAND, PEOPLE, AND CULTURE, having formed the Estonian cultural picture over 20 years.

In full swing is the Educational Centre of the Estonian National Museum, completing pedagogical programmes for exhibition and leisure activities. In 2015, there were cooperation agreements made with gymnasiums of the city of Tartu for involving researchers in instruction. School of Guides started its activity, with over 150 people desirous of learning to become a guide of the Museum.

The Preservation and Conservation Department of the Museum celebrated its 50th anniversary. Besides preparation of items for exhibitions in the new building and vesting responsibility for preservation conditions in the new building, attention was paid at presenting special topics of conservation. The articles on the work of conservators, possibilities of preservation of materials and environmental impact were published. As novelty in Estonia, major attention is paid to preservation of plastic materials. Conservation department also organised a major anniversary conference, exhibition of the experimental

laboratory; conservators participated at the EUROPEAN RESEARCHERS' NIGHT and organised pedagogical programmes to schools.

Public had an opportunity to give a hand at replenishment of collections of the Estonian National Museum. The archives of correspondents of the Museum received over 200 contributions; an equal amount of photos was received in photo collections of the Museum through web-based collection environment *PILDIAIT*. The collections of the Museum received 8 mm films from 160 amateur film makers and film recordings of the Estonian Deaf Association. The collections of the Museum were replenished in 2015 with personal archives and libraries of ethnographers Ants Viires and Aleksei Peterson. In 2015, we organised the archives of Endel Tulving having been received a year earlier, to be opened for use in the new building.

Estonian National Museum supervises the joint project of museums for 100th anniversary of the Republic of Estonia, to study the social changes having occurred since the end of 1980s. Beside the joint exhibition to be completed in 2018 the Museum will coordinate during the project the collection of material in Estonian museums concerning recent history and modern period.

ESTONIAN CROP RESEARCH INSTITUTE

Associated with Estonian Academy of Sciences
23.09.2008



Established: 1920

Employees 147, research scientists 43

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Director: Mati Koppel, Tel: +372 776 6903, Fax +372 776 6902,
mati.koppel@etki.ee

Estonian Crop Research Institute is a state research and development institute in the area of governance of Estonian Ministry of Rural Affairs.

The Institute celebrated the 95th anniversary in 2015. Two scientific events were held to mark this historical milestone. The conference FROM SCIENCE TO CROP FARMERS – 95 YEARS OF RESEARCH ACTIVITIES IN PLANT PRODUCTION held in March 26, was directed to Estonian farmers. Seminar of Baltic plant breeders was held on July 7-8.

Researcher of Agrotechnology Department Liina Edesi defended successfully her PhD thesis THE EFFECT OF CULTIVATION METHODS ON SOIL MICROBIAL COMMUNITY COMPOSITION AND ACTIVITY at Estonian University of Life Sciences.

Institute has increased research activities connected with different aspects of organic production.

Successfully completed in 2015 was the ERA-Net Core Organic II project COORDINATING ORGANIC PLANT BREEDING ACTIVITIES FOR DIVERSITY (COBRA). Project COBRA aims to support and develop organic plant breeding and seed production with a focus on increasing the use and potential of plant material with high genetic diversity in cereals and grain legumes. The novel aspect of the project was testing of the population varieties obtained from composite crosses. Population breeding is a new approach to cope with changing growing conditions. It is assumed that heterogeneous population varieties have better adaptability than homogenous line varieties and provide more stable yield across different growing location and longer time period.

Another ERA-Net Core Organic plus project IMPROVING SOIL CONSERVATION AND RESOURCE USE IN ORGANIC CROPPING SYSTEMS FOR VEGETABLE PRODUCTION THROUGH INTRODUCTION AND MANAGEMENT OF AGRO-ECOLOGICAL SERVICE CROPS (SoilVeg) started in 2015. This research project aims at verifying the hypothesis that the use of the roller crimping technology for termination of agro-ecological service crops will maintain yield of the cash

crops and vegetable products quality, reduce soil disturbance and enhance soil quality, improve use of soil nutrients, and create a suppressive environment for pests, diseases and weeds.

Institute renewed agreement of academic cooperation with Liaoning Academy of Agricultural Sciences, China to widen international relations and research cooperation. The agreement includes exchange of germplasm to favor genetic progress on fodder crops, vegetables, potatoes and winter rye, collaborative research on no-till cultivation, integrated usage of agricultural wastes and cover crops as well mutual exchange of researchers to fulfill cooperation in breeding and cultivation technologies.

The scientific board of the institute approved the Development Plan for the years 2015-2022. Main areas of activities and direction of development for forthcoming years are settled in this strategic document. The main goal of the institute is to be an internationally recognised research center in areas of crop production and plant breeding what is characterised by strong research groups, high research activity, modern equipment and facilities.

President of Estonia awarded Head of the Jõgeva Seed Centre Gunnar Koll with the Order of the White Star. This high level national decoration acknowledges the work that has been done in development of seed production and dissemination of varieties.

ART MUSEUM OF ESTONIA



Associated with the Estonian Academy of Sciences
09.06.2015

Founded in 1919

Employees: 146

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kunstimuuseum.ekm.ee

Director General: Sirje Helme, Tel: +372 602 6001

The Art Museum of Estonia (EKM) collects, preserves, researches and introduces both Estonian and international artistic heritage and contemporary art to the public. Even though without research activity grasping the collections, archives and putting together exhibitions would be impossible, the Art Museum of Estonia does not have a specific job position for researchers. The entire research and scientific activity is based on other principles and does not duplicate the work of academic institutions.

The main principles of research in EKM:

- The fields of research pursued by the Art Museum of Estonia are based on the nature of the collections, with a scope of subjects ranging from medieval to contemporary art. More broadly, the fields of research are determined by the need to critically review writings on Estonian art history and ongoingly expand the contextualisation of Estonian art. The research fields are divided into seven subthemes, such as Estonian Modernist and *Avant-Garde* art after World War II; Ecclesiastical art from the Medieval and Early Modern Ages etc.
- Research projects are organised under corresponding research fields and are short-termed, usually 2-3 years, although depending on the subject and international collaboration they can also be longer. For example, *RODE ALTARPIECE IN CLOSE-UP* 2013-2016; *MICHEL SITOW. ESTONIAN PAINTER AT THE COURTS OF RENAISSANCE EUROPE* 2014-2018. Specific projects are usually associated with exhibitions, but not always (such as archive based research projects).
- Conferences and seminars are connected with research fields. Conferences may, but do not have to be connected with exhibitional activity. All conferences are international. A selection of the conference texts is published in the Proceedings of the Art Museum of Estonia bilingually.
- The Art Museum of Estonia cooperates with universities in research projects, through the degree studies of the employees, lecture courses held at universities and supervising the students' research projects, as well as museum internship and hosting joint conferences.

A 15-member Research Board has been formed in the Art Museum of Estonia that maintains an overview of the research done in the museum, it is able to evaluate it and make its own suggestions. Seminars and discussions connected with the study of the museum's history are held and current exhibitions are analysed. Texts that need peer-reviewing are also chosen by the Research Board from the publication plan.

The aim of the Research Board is to strategically give meaning to the content-related work of the museum and the research activity and to be a competent organ in evaluating scientific work.

Every year the journal Proceedings of the Art Museum of Estonia is published – a publication with an international editorial board and peer-reviewed bilingual articles. The editor-in-chief of the Proceedings is Merike Kurisoo.

EKM supports its workers' degree studies, enabling them to attend lectures and seminars during their working hours and the finalisation of the work has also been supported. Currently there are 5 people with a PhD working in EKM, 4 employees are in the middle of their studies. For all content-related workers a master's degree is required.

OF ACTIVITIES IN 2015

Two research projects with an international scope were completed:

- Exhibition project DÜSSELDORF-BALTICS (2014-2015), which dealt with the Estonian and Latvian artists belonging to the Düsseldorf School of painting.
- Exhibition project BETWEEN DRESDEN AND ST. PETERSBURG (2014-2016), which marked out the place of the artist twin brothers Gerhard and Karl von Kügelgen in the art landscape of the Baltics on the axis of Russia and Germany.

The project THE ARCHIVAL MATERIALS ON ESTONIAN ART IN TALLINN'S MUSEUMS, ARCHIVES AND LIBRARIES (2014-2015) ended, aiming to acquire an overview of the archival materials concerning artists, art researchers and art groupings found in the collections of the various memory institutions in Tallinn and Tartu.

Work with three ongoing projects was continued and three new projects were started.

CONFERENCES

In 2015 the international conference SHARED PRACTICES: THE INTERTWINEMENT OF THE ARTS IN THE CULTURE OF SOCIALIST EASTERN EUROPE (Kumu Art Museum in collaboration with the Estonian Academy of Arts) took place, during which 18 presentations were given by the representatives of Estonia, Latvia, USA, United Kingdom, Germany, Serbia, Hungary, Switzerland, Poland and Italy. Some of the presentations will be published in the Proceedings of the Art Museum of Estonia no.11 (2016).

The employees of the Art Museum of Estonia performed in various scientific conferences on 26 occasions throughout the year (Anu Allas, Anu Allikvee, Hilikka Hiiop, Liisa Kaljula, Juta Kivimäe, Tiina-Mall Kreem, Ülle Kruus, Merike Kurisoo, Mai Levin, Aleksandra Murre, Helena Risthein, Annika Räim, Tarmo Saaret, Elnara Taidre, Anne Untera, Helen Volber).

SEMINARS

In 2015 three seminars took place:

- YOUTH AND THE SOVIET TIMES – ART MUSEUM AS A MEDIATOR OF MEMORY (Kumu Art Museum in collaboration with Tallinn University).
- HISTORY AND VISUAL LITERACY: PICTURE AND HISTORY IN ESTONIA TODAY (Kadriorg Art Museum in collaboration with the Centre of Medieval Studies, Tallinn University).
- BEFORE KUMU AND BESIDE KUMU – seminar no.2 in preparation for the 100th anniversary of the Art Museum of Estonia.

Worthy of note is the training plan of the EKM's Kadriorg Art Museum, ART SPEAKS TO EVERYONE, intended for Estonian museum employees, which taught how to work with the disabled at exhibitions and create exhibitions that take their needs into consideration.

PUBLICATIONS

The publication of the peer-reviewed bilingual magazine Proceedings of the Art Museum of Estonia was continued, the 10th number appeared in print – a special number concerning historical picture: THE ARTIST AND CLIO. HISTORY AND ART IN THE 19TH CENTURY (editor Tiina-Mall Kreem).

Four art historical catalogues with articles were published according to plan:

- FOLDED WORLD. FANS FROM THE COLLECTIONS OF THE ART MUSEUM OF ESTONIA (editor Kersti Kuldna-Türkson);
- ART REVOLUTION 1966 (editor Anu Allas);
- ANTS LAIKMAA. VIGALA AND CAPRI (editor Liis Pählapuu);
- BETWEEN DRESDEN AND ST. PETERSBURG. ARTIST TWIN BROTHERS VON KÜGELGEN (editor Kadi Polli).

The annotated on-line catalogue of the Johannes Mikkel collection was completed.

Source publications:

- LAVATER'S BOOK OF FACES. AN ENLIGHTENMENT ERA GLANCE AT PEOPLE AND ART (editors Anu Allikvee and Tiina-Mall Kreem);
- A LIFE SACRIFICED TO ART: SALOME TREI (editors Anne Untera and Ulrike Jõemägi).

In total 20 articles, 9 books and 1 e-publication were published by the employees of the Art Museum of Estonia (authors: Anu Allas, Anu Allikvee, Hilikka Hiiop, Ulrika Jõemägi, Liisa Kaljula, Greta Koppel, Tiina-Mall Kreem, Kersti Kuldna-Türkson, Merike Kurisoo, Mai Levin, Aleksandra Murre, Alar Nurkse, Liis Pählapuu, Helena Risthein, Elnara Taidre, Anne Untera).

OTHER ACTIVITIES

Seven meetings of the Research Board took place; seven exhibition analyses were held, three of them including the participation of foreign experts.

AWARDS AND RECOGNITIONS

- The Estonian Research Council's yearly science communication award was gained by the EKM project *RODE ALTARPIECE IN CLOSE-UP* (Hilikka Hiiop, Tarmo Saaret, Merike Kurisoo).
- Lifetime Achievements Award of Cultural Endowment of Estonia, EKM curator Eha Komissarov.
- Yearly award of Cultural Endowment of Estonia for the courage to publicly protect the science of art from art dealership, curator Greta Koppel.
- The award for Best Science Events of the Estonian Annual Museum Awards by the Estonian Ministry of Culture was gained by the conference *SHARED PRACTICES: THE INTERTWINEMENT OF THE ARTS IN THE CULTURE OF SOCIALIST EASTERN EUROPE* (Anu Allas) held in the Kumu Art Museum of EKM. In the Best Scientific Publications category the series *PROCEEDINGS OF THE ART MUSEUM OF ESTONIA* was nominated (100 articles and 10 editions, editor-in-chief Merike Kurisoo); in the Best Exhibition category *SILENCE D'OR. ILMAR LAABAN AND EXPERIMENTS IN SOUND AND LANGUAGE* (Ragne Nukk) was nominated.

COLLECTIONS AND CONSERVATION

The goal of EKM is to keep all of its collections systemised, described and available to a wider audience through different mediums, as well as to ensure the preservation of the artworks. Therefore, the ongoing photographing and digitalising of collections took place. In the year 2015 the digitalisation project of the Eduard Wiiralt collection was also continued.

2,875 new works were added to the museum collections, 3,220 works were exhibited in temporary and permanent exhibitions of EKM, in addition 926 artworks were exhibited outside of EKM, and in foreign exhibitions 63 works belonging to the EKM collections. Adding to and organising the documental and scientific archives of EKM was in process. The library of EKM acquired 1,224 additional books, 1,443 books were entered into the database ESTER throughout the year.

The conservators of the Art Museum of Estonia work actively to preserve, restore and conserve the collections of EKM. For the exhibitions of 2015 a total of 170 works belonging to the collections of EKM were conserved, as well as the 21 works lent out to exhibitions in other museums and 19 works belonging to private collections. During the check-up of the permanent exhibition 9 artworks were restored and conserved. 86 artworks of EKM were restored for sending to exhibitions held by other museums and galleries. During the year, a total of 646 works were conserved for the EKM collections. The conservational work continued on the project *RODE ALTARPIECE IN CLOSE-UP*.

OPENNESS TO THE PUBLIC

One of the main goals of EKM is to organise and mediate visual art exhibitions of an internationally acceptable standard, introducing both Estonian artistic heritage as well as contemporary art as priorities. In the year 2015, 22 new exhibitions were opened in the branch museums of EKM, 10 of which were international and 12 exhibiting artistic heritage. Throughout the year, 6 permanent exhibitions stayed open and preliminary work was carried out for changing the permanent exhibition of Soviet art on the 4th floor of Kumu.

In the Kumu Art Museum 13 new exhibitions were opened:

- *METAMORPHOSES OF THE BLACK SQUARE. INTERPRETATIONS OF MALEVICH'S WORK IN ESTONIAN ART* (20.03.-9.08.2015) – this year the painting *Black Square* by Kazimir Malevich (1878-1935), an icon of 20th-century art, reached its 100th anniversary. We celebrated the centenary by recalling the historical events that led to the creation of this influential art work and by looking at the interpretations of *Black Square* in Estonian art. Curated by Elnara Taidre.
- *CONCORDIA KLAR AND PEETER ULAS* (13.08.2015-31.12.2015) – early visionary drawings by the printmaker couple Concordia Klar (1938-2004) and Peeter Ulas (1934-2008) predicted the growing interest in Surrealism in Estonian art from the 1960s to the 1980s. Curated by Anne Untera.
- *HISTORY OF ESTONIAN PRINTMAKING: 1860-1944* (30.01.-26.04.2015) – the exhibition served as an homage to the rich tradition of Estonian printmaking in the 1860s-1940s. The exposition consisted of the most remarkable works by the noteworthy masters of this period: Eugen Dücker, Kristjan Raud, Eduard Wiiralt, Aino Bach and many others. Curated by Mai Levin.
- *DEATH AND BEAUTY. THE CONTEMPORARY GOTHIC IN ART AND VISUAL CULTURE* (20.02.-10.05.2015) – the exhibition focused on macabre topics and their relations to the world of beauty and glamour in the art and visual culture in the 1990s. The main connecting thread is the body: how it can be manipulated and (ab)used in visual-cultural practices. Curated by Eha Komissarov and Kati Ilves.

- HILMA AF KLINT. A PIONEER OF ABSTRACTION (13.03.-7.06.2015) – the Swedish artist Hilma af Klint (1862-1944) was one of the most innovative artists of the early 20th century. Her mystical *oeuvre* opens doors to planes that are invisible to the eye. Her unique works of art were dedicated to future audiences and were kept a secret from the artist's contemporaries. An exhibition from the collections of the Moderna Museeti, curated by Iris Müller-Westermann.
- ART REVOLUTION 1966 (17.04.-16.08.2015) – in 1966, several groundbreaking exhibitions were organised in Tallinn and Tartu, where the works on display daringly distanced themselves from the canon of official Soviet art. This exhibition focused on the attempts of young artists to expand the borders of realism. Curated by Anu Allas.
- JAROMÍR FUNKE AND AVANT-GARDE PHOTOGRAPHY IN CZECHOSLOVAKIA 1900-1950 (15.05.-30.08.2015) – the group exhibition centered around the pioneer of Czech *avant-garde* photography, Jaromír Funke, who was an excellent example of a radical and constantly evolving artistic type. His *oeuvre* includes both Cubist experiments with form and 'emotional photography'. The exhibition was put together based on the conception by the curator Antonín Dufek in the gallery of Morava, Brno.
- HOME AND AWAY. RAYMOND PETTIBON: LIVING THE AMERICAN DREAM. MARKO MÄETAMM: FEEL AT HOME (29.05-13.09.2015) – the internationally renowned R.Pettibon (US) and M.Mäetamm (Estonia) forces the viewer to face the hard realities of life. Mäetamm does this through the kitchen and bedroom, while Pettibon (who also has Estonian roots) looks at the US and its relations to the rest of the world. Curated by Alistair Hicks (USA).
- THE FORCE OF NATURE. REALISM AND THE DÜSSELDORF SCHOOL OF PAINTING (3.07.-8.11.2015) – the exhibition was dedicated to the idea of closeness to reality, which was prevalent in the 19th century, with a focus on the *oeuvre* of influential Estonian artists who studied and worked at the Düsseldorf Art Academy: Eduard von Gebhardt, Eugen Dücker, Oskar Hoffmann, Paul Raud and others. Curated by Tiina Abel.
- SILENCE D'OR. ILMAR LAABAN AND EXPERIMENTS IN SOUND AND LANGUAGE (4.09.2015-3.01.2016) – Ilmar Laaban was known as a poet in Estonia. After emigrating to Sweden, he joined the experimental music group Fylkingen. Laaban wrote his first phonetic poem in 1967, at a time when experiments with sound and text had started to reverberate globally. Curated by Ragne Nukk.

- SAGA. ICELAND: ART AND NARRATIVE (9.10.2015-20.03.2016) – the exhibition consisted of some of the most significant works by different generations of Icelandic artists, who were seconded by international artists who have worked in Iceland, such as Cindy Sherman. Among others, the display included works of art by Björk, Olafur Eliasson and Erró. Curated by Norbert Weber (Germany).
- ANTS LAIKMAA. VIGALA AND CAPRI (11.09.2015-17.02.2016) – Ants Laikmaa (1866-1942) was one of the most colorful personalities in Estonian art history. From his multiple travels, he brought back a fresh look that supported his ambitious efforts aimed at enhancing cultural life in his homeland. Laikmaa's depictions of people and landscapes record experiences that were important to the artist. Curated by Liis Pählapuu.
- RYOJI IKEDA. SUPERSYMMETRY (11.12.2015-28.02.2016) – Ryoji Ikeda is a Japanese audio and visual artist whose substantial installation 'supersymmetry' uses mathematical algorithms to create spatial sensations. The work is a part of a larger series to be completed in 2014-2015. Curated by Kati Ilves.

In the Kadriorg Art Museum 3 new exhibitions were opened:

- TRUE ART OR A FAKE? (28.03.-4.10.2015) – the exhibition examined and analysed the concepts of original, copy, forgery, imitation, etc., attempting to explain the intricate relations between these notions, their origins and historical reception. The original of a work of art does not have to be unique, and a copy can be truly original. Curated by Greta Koppel.
- ART WORK IN CLOSE-UP (28.03.-4.10.2015) – based on selected examples, the exhibition Art Work in Close-up introduced the path undertaken by works of art before they arrive at a museum: restoration, technical examination, historical investigation and the determination of the context in which the work of art was created, which are all necessary to understand the work. Curated by Greta Koppel, Tiina-Mall Kreem and Aleksandra Murre.
- BETWEEN DRESDEN AND ST. PETERSBURG. ARTIST TWIN BROTHERS VON KÜGELGEN (24.10.2015-13.03.2016) – the exhibition brought to Estonia the oeuvre of two internationally renowned artists: Franz Gerhard (1772-1820) and Karl Ferdinand (1772-1832) von Kügelgen. From these names we mark the beginning of the history of professional artists in the Baltic countries, but the two men also played a significant role in the cultural history of Germany and Russia. Curated by Kadi Polli.

In the Mikkel Museum 3 new exhibitons were opened:

- THE ART OF COMEDY. THE THEATRE MONTH EXHIBITION ON COMMEDIA DELL'ARTE (14.03.-12.04.2015) – this exhibition, which was dedicated to the Theatre Month, brought to viewers Jacques Callot's (1592-1635) elaborate series of prints after the tradition of *commedia dell'arte*, and contemporary sculptures by Boriss Ivanov after the characters on the engravings. Curated by Kerttu Männiste.
- FOLDED WORLD. FANS FROM THE COLLECTIONS OF THE ART MUSEUM OF ESTONIA (25.04.-11.10.2015) – the historical 18th- to 20th-century fans reveal a whole miniature world, from social life and customs to mythology and politics. The display gave an overview of the diverse collection of fans and related works of art in the museum, providing a great introduction to the position this accessory has held in the history of art and fashion. Curated by Kersti Kuldna-Türkson.
- LAVATER'S BOOK OF FACES. AN ENLIGHTENMENT ERA GLANCE AT PEOPLE AND ART (24.10.2015-26.03.2016) – the exhibition looked at portraiture through the eyes of the Swiss-born Enlightenment-era physiognomist and genius Johann Caspar Lavater (1741-1801). We posed an intriguing question: do a person's facial features reveal his character and abilities? Curated by Tiina-Mall Kreem.

In the Adamson-Eric museum 3 new exhibitions were opened:

- A MODERN WOMAN (10.04.-28.06.2015) – the exhibition focused on the subject of the modern woman – the woman who primarily dedicates herself to professional self-fulfillment – in Estonian art at the end of the 19th century and in the first half of the 20th century. Curated by Kersti Koll.
- EFRAIM ALLSALU. THE JOY AND POETRY OF LIFE IN TOUGH TIMES (10.07.-25.10.2015) – Efraim Allsalu (1929-2006) established himself in the Estonian art scene of the 1960s and 70s with his abundant works of art and original means of expression. The exhibition displayed contemporary interpretations of the topic of labor, as well as portraits and still lifes. Curated by Ülle Kruus.
- TRACES OF THE GODS. PAINTINGS BY THE JAPANESE ARTIST TORII REI (6.11.2015-28.02.2016) – the artist Torii Rei (1952) employs classic Japanese painting techniques and his works of art deal with the rich mythological heritage of Japan. The background of nature worship allows us to draw several parallels between pre-Buddhist Japan and the distant past of Estonia. Curated by Kersti Koll.

In the Niguliste museum the ongoing exhibition RODE ALTARPIECE IN CLOSE-UP stayed open.

WORK WITH THE PUBLIC

Worthy of special recognition is the active work of the Kumu Art Museum's auditorium continued in cooperation with Estonian and international organisations. The programs of the auditorium are interdisciplinary and form an integrated part of the exhibition and research activity in Kumu. As a part of the series Kumu Documentary taking place throughout the year, 38 movies were shown during 34 screenings, and the silent movie concert HÄXAN was organised as the museum's own production. In June, the Kumu Art Movie Festival KUFF took place, where throughout the three following days and the opening night 14 movie screenings took place. In total 193 events were held in the Kumu auditorium in 2015, visited by 25,248 people.

EDUCATIONAL ACTIVITY

In each of the EKM branch museums there are public programs for different age and target groups and educational programs for students. Throughout the year, in the branch museums 1955 educational and public events took place, in which 46,181 people took part. In addition to the numerous programs for education and the public, various summer camps for kids were also held.

In the course of the year, 2,235 guided tours for adults were carried out, attended by 66,288 visitors, and 54 children's tours with 1,637 kids taking part. 546 other events (concerts, openings, receptions etc) took place, in which there were 63,482 participants.

On the September 21 the EKM's EDUCATION FAIR for educational workers was held in the Niguliste Museum. The branch museums of EKM organised introduction days and carried out further training programs for teachers and tour guides. The art studio belonging to the Kumu education centre was further developed, in which 439 art courses, studios and workshops took place with 3,812 attendants.

As a part of the project GUIDING CHILDREN TO ART 131 specifically prepared museum lessons were carried out for 2,882 children.

All branch museums put emphasis on working out and expanding programs for people with special needs.

Close collaboration with higher education schools also continues, 29 university students were on internship in the EKM museums. The exhibitions and events of EKM are communicated to the public in the Estonian, English and Finnish languages. In the year 2015 the branch museums of EKM were visited by a total of 325,908 people.

ASSOCIATED ORGANISATIONS

Organisations from outside the structure of the Academy, whose activities and objectives comply with the activities and objectives of the Academy, may associate with the Academy. Association is effected in the form of a bilateral agreement, specifying the purpose of association as well as the duties and commitments of both parties.

Reviews on the 2015 activities of the institutions associated with the Academy have been presented in the chronological order of their association date:

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ESTONIAN NATURALISTS' SOCIETY



Associated with
the Estonian Academy of Sciences
23.01.1998

Founded 1853

Membership: 769 active members, 15 honorary members, 631 trustees

Subunits: 22

Location: Struve 2, 51003 Tartu, ESTONIA

Address: PO 43, 50001 Tartu, ESTONIA, elus@elus.ee

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President: Oive Tinn, Tel: +372 734 1935, +372 5333 1556

Academic Secretary: Ivar Ojaste, Tel: +372 734 1935

Estonian Naturalists' Society has 22 subunits. Subunits that work as sections are as follows: the section of amateur meteorologists, of anthropology, of botany, of entomology, of forestry, of geology and of theoretical biology; the Commission of Lakes, the Estonian Malacological Society, the Estonian Mycological Society, the Estonian Teriological Society and the Jakob von Uexküll Centre. Commissions with special task focus on the history of natural sciences, the library, natural education, observation networks, the terms of ecology and plant names, and botanical rarities. In addition, the Society has assemblies of ecology, of honorary members and the round table of nature conservation.

In 2015 ten General Assemblies with scientific presentations were held:

- January 29 – Ivar Ojaste MIGRATION OF THE COMMON CRANES;
- February 27 – seminar BAER'S DAY, with papers delivered by Erki Tammiksaar BAER'S PEIPUS EXPEDITIONS AND THEIR IMPORTANCE IN STARTING ICHTHYOLOGICAL RESEARCH IN THE RUSSIAN EMPIRE and by Raik-Hiio Mikelsaar KARL ERNST VON BAER AT PIIBE AND IN KALININGRAD;
- March 26 – Toomas Kukk NEW ATLAS OF ESTONIAN FLORA;
- April 30 – Bellis Kullman LIFE IN THE REALM OF DIKARYA FROM THE FAMILY OF *BASIDIOMYCOTA* AND *ASOMYCOTA*, the reporting meeting 2014;
- May 28 – Tõnu Pani THE CHARM OF MINERALS;
- June 17 – Tõnu Talvi THE ROLE OF BIOLOGY STATIONS IN RESEARCH OF NATURE, LEARNING IT AND CONSERVATION;
- September 24 – Laurits Leedjärv WHY ARE STARS SO IMPORTANT?;
- October 29 – Kaarel Orviku GEORADAR IN SCIENCE AND PRACTICE;
- November 26 – Reedik Mägi SUPRA-GENOME RESEARCHES OF HUMAN GENOME;
- December 17 – Maarja Öpik PATTERNS OF PROLIFERATION OF *MYCORRHIZA* IN ESTONIA AND THE WORLD.

The 38TH NATURALIST'S DAY was held at the Raplamaa region in Kehtna on July 4-5 – Field trips took place to study plants, lichens, stem decay fungi, snails, butterflies and dragonflies. There were five scientific presentations on Raplamaa nature and history of nature protection. An excursion was organised in neighbourhood. In total 65 people participated at that event.

The activities of subunits of ENS during 2015 were the following:

SECTION OF GEOLOGY – the XI GEOLOGY AUTUMN SCHOOL on the topic 195 YEARS OF GEOLOGY IN ESTONIA in Tartu on October 16-18. It heard 23 scientific papers. The Society issued the collection *Schola Geologica XI* (152 pp.)

SECTION OF THEORETICAL BIOLOGY – the 41ST SPRING SCHOOL on the topic THEORY OF BOUNDARIES in Narva-Jõesuu on May 22-24. It heard 20 scientific papers. The Society issued the collection *Schola Biotheoretica XLI* THEORY OF BOUNDARIES (190 pp.).

In the SECTION OF BOTANY four meetings were held:

- February 18 – Ott Luuk and Marko Peterson TRAVEL TO THE POLAR URALS (41 participants);
- April 15 – Liina Saar LOSS OF HABITATS, THEIR DISINTEGRATION AND DROP IN QUALITY – LOSERS AND WINNERS? and Lauri Laanisto PATTERNS OF EXTINCTION OF COMMON PLANTS IN ESTONIA AND GREAT BRITAIN IN THE SECOND HALF OF THE 20TH C. (28 participants);
- November 20 – Toomas Kukk HERBARISATION AND HERBARIUM, who presented with Tiina Kaalep (OÜ Hea Lugu Publishers) the issue MANUAL OF HERBARIUM (40 participants);
- December 9 – Nele Ingerpuu and Kai Vellak NATURE AND PLANT CANOPY OF THE TULEMAA ISLES (38 participants).

May 30-31 – the annual gathering of friends of mosses, attended by 24 friends of mosses and visiting the Kihnu Island. 119 moss species were registered, of them 13 *Marchantiophyta* and 106 *Funaria hygrometrica*, and two varieties of *Funaria hygrometrica*. Basing on that inventory taking, the first list of the Kihnu mosses was compiled (see FRIEND OF MOSSES 18, pp.27-28).

To the website of nature observation database, there was prepared an information table on protected species and Red Book species. Mare Leis participated in the work on compiling and verification of the section 'moss species'. The table will become the helpmate to amateur nature watchers and those interested.

There was the contest of photos on mosses, with E.Johannes and A.Hendrikson winning. Their photos can be looked at in the last issue of FRIEND OF MOSSES.

The new issue of the internet journal FRIEND OF MOSSES, 18 was compiled (www.botany.ut.ee/bruulooogia/Samblasober18.pdf).

Further, members of the Section of botany gave a hand in field works for compiling the new atlas of plants, participated at field works in Svalbard

(Spitsbergen), at planned monitoring work, at research of the input of the development plan for adaptation to climate change in the domain of natural environment, at IUCN experts' training (certificate was granted to members of Section Karin Kaljund, Nele Ingerpuu, Ülle Reier and Kai Vellak), they were engaged in the activities of Estonian Seminatural Community Conservation Association (ESCCA) and the Orchid Protection Club.

The observers' network in the SECTION OF AMATEUR METEOROLOGISTS continued their work. Jõgeva weather hobby centre received data from 45 amateur points and 12 departmental automatic weather stations. 16 points among all amateur observation points measured precipitation only in the warm half of the year; part of the others did snow observations also in winter. The weather data (minimum and maximum air temperature, quantity of precipitation, snow thickness and extent of snow canopy in the area, atmospheric phenomena) were verified, recorded in the computer, compared and processed tentatively. Basing on the data collected, the important agro-meteorological indicators were derived, which were used to update the former time-series of observation points. The data were used combined with the data of observation network of the National Weather Service at composing the maps on distribution of precipitation, minimum air temperature, snow thickness and other meteorological indicators. Those maps are available in agro-meteorological reviews on Estonian Crop Research Institute website www.etki.ee. At the end of year the weather review together with drawings and data received from observation network on hazardous phenomena will be transferred to library of the Estonian Naturalists' Society. The observers were dispatched, at the end of year together with Christmas greetings and observation book the synopsis of the weather in 2015.

- January 28 – a meeting of anchors of the Section in Tartu in the house of the Society;
- March 23 – a meeting of anchors of the Section in Tallinn in Weather Service, discussing the plan of events and undertakings for 2015 and the summer gathering of amateur weather observers;
- September 2 – members of the Section discussed the problems related to moving of the archives of Jõgeva-based amateur weather observers' centre and agro-meteorological archives, because the house they used transferred into private ownership.

The Jõgeva amateur weather observers' centre is engaged in cooperation with NGO MIINUS 43,5, instrumental in holding traditional winter Icicle-Winter Festivals at Jõgeva. Besides entertainment and frolicking that event also offers knowledge in weather and climate.

Gathering of amateur meteorologists and thunder observers (72 people participated) took place at Jõgeva, in Basic School Hall on July 18. There was a conference at the gathering with 10 papers, followed by an excursion to take

a look at the Estonian Crop Research Institute experiments and exchange ideas in the amateur weather observers' centre. The participants visited the exposition 50 YEARS OF AGRO-METEOROLOGICAL OBSERVATIONS AT JÕGEVA AND THE WORK OF AMATEUR WEATHER OBSERVERS' NETWORK. The gathering of the amateur weather observers was nominated as one among ten keynote events held in Jõgeva in 2015.

ESTONIAN TERIOLOGICAL SOCIETY was actively connecting with Forest Department of the Environmental Board in connection with the plan to withdraw from nature the does *Cervus nippon* and *Dama dama*. Teriological Society presented its opinion, formed with involvement by Peep Männil, Tiit Randveer, Tiit Maran and Jaanus Remm (participating in the working group as external member was Karli Ligi) on January 13, 2015.

Annual meeting of the Teriological Society was held on March 31 in Tartu, in the Hall of the Estonian Naturalists' Society. The meeting discussed the organisation of work, the plan for the year and the activities. Topics: the Teriology Autumn School, atlas of distribution of mammals, statute and organisational structure.

The Teriology Autumn School on the topic NATURE'S AID IN CRISIS was held on September 18-20 at Särghaua, in the region of Pärnumaa. There were lectures, workshops, discussions, hikes in nature, altogether 27 items on agenda. The event was attended by over 60 school students, university students, researchers, huntsmen, environmental activists, officials and friends of nature. The event was reflected by lecture videos in websites of the autumn school (www.terio.ee and www.facebook.com/sygiskool) and two articles appeared in the magazine Estonian Hunter.

There was an active intercourse in the Teriological Society e-mail list, featuring over 100 members. The opinions most often ventilated were on foreign and alien species, endangered species and nature conservation, science news, treatment of animals and maintenance of populations.

The SECTION OF ANTHROPOLOGY organised the AULI DAY on October 22 jointly with the Physical Anthropology Centre of the University of Tartu where 4 scientific reports were presented, with 22 scientists attending

ESTONIAN MYCOLOGICAL SOCIETY completed on April 1 its website (mukoloogiau hing.ut.ee/avaleht). It organised two training courses on determination of mushroom species in Saaremaa and Muhumaa: the spring camp on May 7-10 and the autumn camp on September 24-27.

Annual meeting of the Mycological Society ACTIONES took place on December 12 in study halls of Natural Museum of the University of Tartu with 29 participants. The meeting heard 5 papers: Külli Kalamees MYCOLOGICAL SOCIETY ANNO 2015, Kessy Abarenkov AMATEUR SCIENCE ON PLUTOF PLATFORM, Jaanus Puttind and Andrean Razumovski GROWING CULTURAL MUSHROOMS, Eveli Otsing *TUBER RUFUM*, *T. MACULATUM*, *T. PUBERULUM*,

T. RAPAEODORUM AND *T. FOETIDUM* AND THEIR DISTRIBUTION IN ESTONIA and Kadri Runnel WHETHER AND WHICH PORE FUNGI (STEM DECAY FUNGI) ARE SUITABLE AS PRIMEVAL FOREST INDICATORS?.

There appeared the journal *Folia Cryptogamica Estonica* 51. In cooperation with the University of Tartu there appeared the web-form of the journal *Folia Cryptogamica Estonica* 51 (www.ut.ee/ial5/fce/index.html).

The SECTION OF FORESTRY had four scientific seminars:

- January 26 – Lector Andres Jäärats delivered a paper CURRENT SITUATION WITH ESTONIAN FOREST PLANT GROWING;
- April 8 – Priit Põllumäe presented the results of his doctoral thesis ANALYSIS OF COOPERATION OF ESTONIAN PRIVATE FOREST OWNERS;
- May 28 – Polish colleagues Arkadiusz Grushala and Michal Zasada spoke on the topic FORESTS AND FORESTRY IN POLAND;
- December 14 – doctoral student Marek Irdla spoke on the topic ANALYSIS OF WOOD PALLET HACKING AND ITS TRANSPORTATION COST USING DIFFERENT MACHINES.

COMMISSION OF LAKES published Henn Timm's book LARGE INVERTEBRATES IN ESTONIAN INLAND WATER.

Members of ESTONIAN MALACOLOGICAL SOCIETY fulfilled the national monitoring sub-programme FIELD GUIDE OF SNAILS ON MAINLAND.

THE COMMITTEE OF PLANT NAMES IN ESTONIAN organised five meetings: January 28, February 26, March 25, November 25 and December 16. The meetings were attended by all 8 members (Erich Kukk, Toomas Kukk, Urmas Laansoo, Ott Luuk, Sirje Mäearu, Ülle Reier, Sulev Savisaar, Kersti Tambets).

The database of plant names (www.ut.ee/taimenimed) features at the end 2014, 18,757 name series, at the end 2015 however 19,138. As a result of work of the Committee, the database was replenished by 381 new name series. The number of name series approved at meeting (changes, additions and also deletions in name series) were 764 in 2015.

LIBRARY

In December 2015 there were 163,264 printed items in ENS library. Within the year the Library acquired 150 books and items of 236 periodicals. The publications were exchanged in the reporting year with 36 institutions and organisations from 14 countries.

PRINTED MATTER RELEASED IN 2015:

- Niklus, M. (translation and preface), Tinn, O., Laanisto, L., Viikmaa, M. (ed). Darwin, C. The Descent of Man. Estonian Naturalists' Society, 2015, 805 pp. (Classics in natural history).
- *Folia Cryptogamica Estonica*, 52. Estonian Naturalists' Society, 2015, 130 pp. (in cooperation with the University of Tartu).

ESTONIAN GEOGRAPHICAL SOCIETY



Associated with the Estonian Academy of Sciences
27.01.1998

Founded: 1955

Membership: 213, 15 honorary members

Address: Kohtu 6, 10130 Tallinn, ESTONIA, egs@egs.ee
www.egs.ee

President: Mihkel Kangur, Tel: +372 619 9800, mihkel.kangur@tlu.ee

Academic Secretary: Tiit Vaasma, Tel: +372 619 9828, egs@egs.ee

The Board of Estonian Geographical Society comprised the following members starting from 12 April 2015: Mihkel Kangur (President), Arvo Järvet (Vice-President), Liisa Puusepp (Vice-President), Tiiu Koff, Taavi Pae, Hannes Palang, Tiit Tammaru, Ulvi Urgard, Rein Vaikmäe and Academic Secretary Tiit Vaasma.

Estonian Geographical Society is an organisation uniting geographers and people interested in geography. Main avenues of activities of the Society are releasing specialised publications, doing scientific research, organising scientific events and dissemination of knowledge in geography.

The continuity of activity of the Estonian Geographical Society is taken care of by the active Society's Youth Club with its traditional undertakings, directed at involvement of the youth into academic communal activities and learning to know the Estonian geographic conditions, often thereby complementing the internships at the Universities. Youth Club was headed in that year by Dagmar Seppor and Anna-Helena Purre.

In 2015, Estonian Geographical Society released two collections:

- Järvet, A. (ed.) Yearbook of Estonian Geographical Society Vol. 40. OÜ Vali Press, Tallinn, 2015, 223 pp. (with summaries in English);
- Küttim, A., Umbleja, L., Vacht, P., Krusta, L., Truus, L. (eds.) Publications of Estonian Geographical Society XV. *Sügisball* (Autumn ball). Collection of articles of autumn symposium of young geographers. Estonian Geographical Society, 2015, 168 pp. (with summaries in English).

2015 will be worth remembering by numerous conferences in the first place however the reaches of the Society were much broader and variable, with every month activities.

The traditional county excursion of the Youth Club headed to the snowy Jõgevamaa (30.01-1.02.2015), with the hiking in Endla Nature Reserve and climbing on the drumlins (elongated hills formed from glacial debris). In the building of the former Tooma marshland school, Maarika Männil deliberated on history of the place, Endla Nature Reserve and introduced the expositions.

At the general meeting of the Estonian Geographical Society on April 12 the regular items on agenda were complemented by scientific paper, delivered by Tiit Tammaru, Professor of Urban and Population Geography of the Institute of Ecology and Earth Sciences of the University of Tartu NEW DIRECTIONS OF THE ESTONIAN OUTBOUND MIGRATION.

At the General Meeting, a one-thousand-euro memorial stipend of the late President of the Society Professor Jaan-Mati Punning was awarded to Mariliis Eensalu, master student of Institute of Mathematics and Natural Sciences of Tallinn University, for research in ecosystems depending on Ordovician groundwater reservoirs of North-East Estonia. Estonian Geographical Society jointly with the Cultural Endowment of Tartu grants that stipend to undergraduates majoring in natural geography and related specialties, master students, doctoral students and young scientists enrolled in post-doctoral studies for achieving their research goals.

On June 5-7, the island of Vilsandi was visited where members enjoyed local nature and hamlet life and cleaned from garbage and trash the beach of the Vesiloo islet. By sunset, when emotionally loaded from the sight of rotating windmill impellers and far stretching dry-stone walls, the enthusiasts of sauna could indulge in their pleasure under bleating sounds of sheep and goats.

The Society was main promoter (head of the project Tiina Peil) at the largest geography conference of the region – the 6TH NORDIC GEOGRAPHERS MEETING (www.tlu.ee/en/NGM2015) titled GEOGRAPHICAL IMAGINATION: INTERPRETATIONS OF NATURE, ART AND POLITICS. Conference was held on June 15-19, 2015 in Tallinn and Tartu in cooperation with Estonian universities. The conference was attended by over 300 geographers predominantly from Nordic countries however most of Europe was represented, as well as all continents. The conference had 30 sections and six panels with entwined topics. Organisation was supported by Enterprise Estonia. The Estonian Convention Bureau nominated that event the nominee of contest of Conference of the Year. Conference was steered without hitches, under resounding laudatory observations. The roughshod history of Estonia and its geographical position provided an excellent opportunity to critical deliberations and interventions, enlarging cooperation on interfaces of the humanities, social and natural sciences. Discussions were held on teaching geography and organisation of doctor schools. Among narrower topics, under consideration were topics of migration, tourism, cities, geographical knowledge, modern research methods,

matters related to water and aquatic expanse, sustainability and joint treatments of geography and arts. The collateral aim of the event was presenting Estonia. Within conference, six topical excursions were held, taking participants from Tallinn to Tartu. At excursions running along different tracks the participants were illuminated on topics of local communities, historical landscapes and urbanisation, as well as the interlaced natural landscapes and culture.

Annual summer excursion of the Society, held at the beginning of August carried the participants to Ida-Virumaa. The essential diversity of the excursion was warranted by the guides well-versed in local sights and life Enn Kaup, Mait Sepp and Tiit Vaasma. We visited the Kukruse Polar Manor and the Kohtla Mining Park. We met with the Elder of the Mäetaguse parish council Veljo Kingsep, whose catching story presenting the parish revealed to us that in order to make good the wrongs caused by industry a lot of investments had been injected in the area on account of the so-called oil-shale moneys. In the pristine Selisoo untainted by industry we hiked a couple of hours along wood-board nature trail under blazing sun. The Kurtna landscape preserve is sort of an oasis between industrial landscapes. Deplorably man has affected the Kurtna Lake District by the Vasavere groundwater abstraction. Apparently due to that the water levels of many closed lakes fed by groundwater (Ahne, Kuradi and Marstiska lakes) have dropped, and their specific species as oligotrophic lakes have all vanished. Because Ida-Virumaa is also known as the land of brown gold, Mait Sepp provided an overview of the story of discovery of oil-shale. Only some of us had an opportunity to look at the Ojamaa underground mine of the Viru Keemia Grupp, because we are dealing here with an operational mine using heavy machinery. Imre Poom from the adventure company Adrenaator enlarged on future perspectives of the Aidu quarry. We also informed ourselves at Jõuga as to burial mounds (cairns) of the Votjaks, we took great pleasure in eyeing the landscapes from Iisaku observation tower, we bathe in the Lake Peipsi, and made several stops on other sights on our route.

The Youth Club's cycle trip on August 5-9 ran from Tallinn to Rakvere. It was a successive leg of a trip round Estonia, which did not take its course along highways but on meandering village roads through beauty spots, which covered the sites from inland to coastal areas, pebbles to boulders, farmsteads to manor houses and further on.

On September 3, Department of Geography of the University of Tartu and the Estonian Geographical Society organised upon initiative of our Vice-President and lecturer of natural geography of the University of Tartu Arvo Järvet in Tartu the conference on history of geography, marking the 100th anniversary of Professor Geography Endel Varep. Presentations were held by Urve Ratas (co-authored by Are Kont), Jüri Roosaare, Andres Tõnisson, Arvo Järvet, Erki Tammiksaar, Heino Mardiste and Taavi Pae (co-authored by Raivo Aunap).

Before the conference the participants visited the Elva graveyard and lighted commemoration candles on Endel Varep's resting place.

The traditional eleventh autumn symposium of students in the specialty of geography of Estonian universities was held on October 2-4 in Särghaua study centre (Pärnumaa) of Tallinn University of Technology. Besides the presentations of the students, the participants got the lectures by Mati Ilomets (Tallinn University) and Taavi Pae (University of Tartu), invited to give keynote speeches. Within the cultural programme, they visited the Kurgja farmstead museum, caressed the animals at the farm and looked at how the watermill works. The autumn symposium was supported by the Gambling Tax Council and funding of research projects of Tallinn University.

Estonian Geographical Society was established as branch of the Geographical Society of the Soviet Union (legitimate successor of Russian Geographical Society founded in 1845) on November 15, 1955. Hence we are 60, on occasion of which we organised on December 4 in the main hall of Estonian Academy of Sciences the anniversary event with conference and reception. Invited to the anniversary was also Secretary-General and Treasurer of the International Geographical Union Professor Michael Meadows, who provided an overview of history and future of the Union and the role and perspectives of geography. Besides the pithy and thought-provoking speech delivered by President of the Estonian Academy of Sciences Tarmo Soomere about the role of the Estonian Geographical Society in society we heard a speech by Rector of the University of Tartu and member of Estonian Geographical Society Volli Kalm, highlighting the importance of our activities. Those were motivating and encouraging statements. President of Estonian Geographical Society Mihkel Kangur also spoke on the challenges facing geography and our role therein. Besides the above mentioned speeches we heard also other interesting and high-level presentations about changes in life environment of Tallinn as compared to other European cities (Tiit Tammaru, member of board of Estonian Geographical Society, the University of Tartu), about research of polar areas (Enn Kaup, honorary member of Estonian Geographical Society, Tallinn University of Technology) and about successful performance of our youth at international geographical Olympiads (Anu Printsman, Estonian Geographical Society, Tallinn University). Many discussions were provoked by paper of geography teacher of Tallinna Reaalkool (Tallinn Secondary Science School) Piret Karu about teaching and studying geography at school today. We also walked to St Mary's Cathedral (Tallinn Dome Church), to hear the stories of Tarmo Kiik (University of Tartu) about the Estonian descent explorer Adam Johann von Krusenstern who is buried there. The evening was capped by reception and concert.

The following anniversary was related to weather observations in Estonia. December 2, 2015 was the 150th anniversary of the start of systematic weather observations in Estonia, because the observations initiated in 1865 in Tartu by A. von Oettingen set the basis for regular weather service. On occasion of that anniversary the Estonian Geographical Society proposed that an appropriate postal stamp should be issued. It came out in cooperation with Eesti Post, Environmental Board and the University of Tartu. The idea came from Peeter Kõiva of the Society, who was also the driver of the process. On December 2-3 Tartu and Tõravere hosted a respective SCIENTIFIC CONFERENCE METOBS 150. Conference was aimed at providing an overview of current position of the respective areas of research and the topical problems in Estonia. The Society was represented on high level – presentations by President Mihkel Kangur (CLIMATE AND WATER ECOSYSTEMS, co-authored), honorary member Enn Kaup (PARTICIPATION OF ESTONIANS AT METEOROLOGICAL SURVEYS IN ANTARCTIC AND CLIMATE CHANGES IN SOUTH POLAR REGIONS), Jaak Jaagus (KESTA project ESTKLIIMA. TRENDS OF ESTONIAN CLIMATE, REGIME SHIFTS, SCENARIOS), Erki Tammiksaar (PRE- AND STARTING YEARS OF METOBS), Ain Kallis (CHANGES OF LOCATIONS OF STATIONS FROM BEGINNING OF OBSERVATIONS IN ESTONIA IN 150 YEARS), Vice-President Arvo Järvet (BEGINNING OF HYDROLOGICAL OBSERVATIONS OF INLAND WATER BODIES IN ESTONIA), Peeter Kõiva (ARTHUR VON OETTINGEN'S LIFE HISTORY) and member of board Taavi Pae (AUGUST TÖLLASEPP 130).

Members of Society's school geography section participated at organisation of regional and national Geographical Olympiads. They made an environment-theme study trip of geography teachers to Bornholm Island (15-22.08.2015) and several other study trips. They participated in Finnish–Estonian environmental science project MUSIC AND NATURE WHICH CONNECT, and at environmental education conference in Tallinn on October 30. Besides that, the teachers were concerned with many more activities: the development of national geography curricula, compiling the examination tasks and grading the gymnasium state examinations; preparation of the basic school geography final examination and doing summaries, monthly subject sections to geography teachers.

At five club nights the members heard educational travelling impressions from Morocco, Switzerland, a year of life in Japan, mountain track in Georgia to the tip of Kazbek and we 'trod' the trails of Jesus in Israel. Besides larger events three film nights were held in Youth Club, demonstrating the films related to environment and sustainable development.

SOCIETY OF ESTONIAN AREAL STUDIES

Associated with the Estonian Academy of Sciences
27.01.1998

Founded 1939

Membership: 200 members

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The Society called for the third time the contest for annual prize of the best publications in areal studies. Out of the researches published in 2014 by members of the Society, known and available to the Board, the winning prizes were awarded to *KEHRA LOOD* (THE STORIES OF KEHRA), with member of the Society Ants Miidla being one of the compilers, an author and co-author of several articles, to Tiit Uus' *KÄRU VALD – PIIRIVALD* (THE KÄRU PARISH – THE FRONTIER PARISH) and to Sergej Seeland's *VELISE RISTLIJA JOHANNENE APOSTLIKU ÕIGEUSU KIRIK* (THE VELISE JOHN THE BAPTIST ORTHODOX CHURCH OF ESTONIA). In a contrastive study of those outstanding publications, the role of Ants Miidla in compiling the Kehra volume received the highest accolade.

YEARBOOK OF THE SOCIETY of Estonian Areal Studies 2014 was the anniversary issue – the tenth in sequence! The YEARBOOK started a decade ago, edited jointly by two societies, however now for a couple of years by three societies – National Heritage Society, Estonian Genealogical Society and Society of Estonian Areal Studies. It was more representative than the earlier ones, containing the index of all pieces of writing for the period as befits the tenth serial issue. It is for the first time supplied with summary for every society and table of contents in English. On occasion of the benchmark edition, the YEARBOOK was presented in the historical hall of the Academy of Sciences in Tallinn, Toompea on March 21, 2015.

General Assembly of the Society convened on March 18. Traditionally there was a guest speaker on the agenda. Liivi Aarma delivered a class of literacy, greatly needed by enthusiasts of areal studies. The topic of her lecture was *GOTHIC TYPE IN DOCUMENTS OF THE PAST CENTURIES: THE BASICS OF THE GOTHIC SCRIPT*.

On May 16, Georgi Särekanno supervised an exploratory trip to Keila-Joa, to look at the recently renovated manor complex and the park.

After the Midsummer the members of Society attended the study trip in North Pärnumaa. They stopped for a while in places of rich nature and cultural lore in Pärnu-Jaagupi, Mihkli, Pikavere, Audru and Uulu. It was rewarding to know

that the local enthusiasts of areal studies are excellent guides, able and willing to share their knowledge.

At beginning of October the enthusiasts of areal studies travelled to Tartu. They met with Mall Hiimäe at the Literary Museum, who deliberated on joint project EESTI ELULOOD (ESTONIAN LIFE STORIES) having been in progress for 15 years, described the work of collecting the life stories and demonstrated the printed matter completed within the project. The members whiled away the second half of the study-day in St. Paul cathedral. They had an opportunity to get intimate knowledge of cultural values of the church under supervision of a superb guide, pastor of the local congregation Kristjan Luhamets.

Enthusiasts of areal studies organised events also without agency of the Society. The Society of Friends of Kitzberg organised, within the year dedicated to that popular writer, a series of undertakings in Mulgimaa. The industrious Pärnumaa Society of Areal Studies offered to local members the events on a monthly basis, organised by local enthusiasts. The gatherings, study hikes and study days, lectures and presentations of new books and researches is a regular form of cooperation both in Pärnumaa and elsewhere, where the enthusiasts of areal studies are more compact and well organised. The activity of the Raplamaa enthusiasts of areal studies is gearing up, too.

Although the processes witnessed in the educational system are ever lesser conducive to the so-called extra-curriculum activities, in several counties the tradition of holding the school students' conferences on areal studies were luckily continued. THE SPRING COUNTY CONFERENCES OF CUSTOMARY GOOD LEVEL were held on April 23 in the Pärnu Museum, organised by cultural service of the educational and social department of Pärnu County Government and educational department of the city administration, and on April 30 in Paide at Wittenstein Time Centre, promoted by educational and social department of the Järva County Government. THE STUDENTS' CONFERENCES were supported by local teachers and museums. In autumn the students' conference was held by the Võru County (October 8) and the Rapla County (November 18). Deplorably in past year such conference was not held in Viljandimaa and West Virumaa. Earlier there were students' conferences in those counties, thanks to their significant potential, as annual events of young enthusiasts of areal studies.

On November 2 the Academy of Sciences organised in Tartu THE SEMINAR OF SCIENTIFIC SOCIETIES ASSOCIATED WITH THE ACADEMY, with every society reporting about its directions of activity, achievements and plans. The presentation of the Society of Areal Studies introduced the seminar. Heads of the Academy bestowed due recognition on role of the Society.

The Board of the Society has a good overview of the activities of members of the Society at the provinces. Many active members usually send the synopses of their annual work to the Board together with New Year greetings. It is an impressive tradition.

ESTONIAN MOTHER TONGUE SOCIETY



Associated with the Estonian Academy of Sciences
4.02.1998

Founded 1920

Membership: 353 active members and 13 honorary members

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Librarian: Annika Oherde, Tel: +372 644 9331

In 2015, in its 95th operational year, the Society organised four conferences, four meetings with papers, a youth language camp and six language days, incl. the Estonian language days abroad (four). In that year, 79 papers were delivered.

Outside Estonia, co-organised by Ministry of Education and Research and local Estonian societies, four language days were held (in Luxembourg, Brussels, Milan and Bologna). The topics of papers were widely different, in view of the proposals and expectations of local listeners. As usual, a review of the Estonian language policy belonged among papers, this year among others the programme of compatriots. There were also papers delivered on links between language and literature, present-day children's literature, education in values, reading and writing skills, developments in the world of the Estonian language and culture, impact of socio-linguistic media on use of language by children, entwining areas in the language instruction, language learning games, development and home-study of bilingual children. Useful tips were offered for writing linguistic projects; training in practical Estonian was provided to parents living abroad. Besides the papers, workshops were held. Altogether 13 papers were delivered at the Estonian language days abroad and two roundtables were held.

In 2014 the Society organised four conferences.

March 30 – the Hall of Academy of Sciences was the venue of a conference dedicated to Eduard Ahrens. The conference was addressed with a greeting by Karl Pajusalu on behalf of the Mother Tongue Society and the Academy of Sciences, by Urmas Sutrop on behalf of the Institute of the Estonian Language and by Sulev Valdmaa of Laurentius Society. The Tallinn alumni choir of the women's choir of the University of Tartu performed works of Estonian composers. There were three papers delivered. The opening speech AHRENS' ORTHOGRAPHY IS AN INTEGRAL CONSTITUENT OF ESTONIAN IDENTITY was given by Mati Hint. Heli Laanekask considered AHRENS' GRAMMAR THROUGH WIEDEMANN'S PERSPECTIVE and Toomas Paul deliberated on PROBLEMS OF TRANSLATING BIBLE.

June 27 – Tartu hosted the traditional J.V.VESKI LANGUAGE CONFERENCE. The topic of XLVIII J.V.Veski Day was ESTONIAN LINGUAWARE IN DIGITAL ERA, on agenda were seven papers. The opening paper LINGUISTIC RESOURCES IN THE ESTONIAN CENTRE FOR LINGUISTIC RESOURCE AND ACHIEVEMENTS OF LANGUAGE TECHNOLOGY WITHIN THE NATIONAL PROGRAMME was delivered by Kadri Vare. Heiki-Jaan Kaalep spoke on the topic MORPHOLOGICAL ANALYSIS AS A TECHNICAL TASK. Kadri Sõrmus and Siim Karnõ delivered a paper THE NATIVE LANGUAGE LEARNER CORPUS EMMA AND WHATEVER YOU CAN FIND THEREIN. Kadri Muischnek presented AUTOMATIC SYNTAX ANALYSIS AND THE WEB INTERFACE OF ANALYSER, Margit Langemets spoke on the topic LINGUAWARE OF THE INSTITUTE OF THE ESTONIAN LANGUAGE AND MODERN ERA, Kristian Kankainen presented E-LANGUAGE ADVICE OF THE INSTITUTE OF THE ESTONIAN LANGUAGE and Liis Ermus DIGITAL POSSIBILITIES OF EMSUKA SOUND ARCHIVES.

September 25 – Annual student conference held in Tallinn University to celebrate THE DAY OF EUROPEAN LANGUAGES. Speaking about their language research were bachelor and master programme students of Tallinn University and the University of Tartu, delivering altogether seven papers.

December 18 – Mother Tongue Society celebrated the 50TH ANNIVERSARY OF THE GENERATIVE GRAMMAR GROUP (GGG) with conference in Tartu (ggg.ut.ee/). Attending were the veteran members of the working group, the initiates of that time and the acolytes from the new generation. In 14 papers a glimpse was cast on former, present and future trends of development of Estonian linguistics within continuity of generations. The topics of the papers covered the history of science angle of view on GGG, the analysis of research by members of the working group and the present topics of research and recent developments of linguistics. Mother Tongue Society in cooperation with the Ministry of Education and Research organised the poll for the award of the Linguistic Feat 2014, eventually granted to e-environment Language Click (*Keelekliikk*). The Society co-organised the final event of the Linguistic Feat, held on March 13, 2015 at Põltsamaa Co-educational Gymnasium, with one paper delivered.

March 27 – ANNUAL MEETING of the Estonian Mother Tongue Society was held in Tallinn, with Kersti Lepajõe and Satu Grünthal's academic paper MOTIVATION OF STUDENTS LEARNING TO BECOME TEACHERS OF ESTONIAN AND FINNISH AS MOTHER TONGUE AND THEIR VOCATION. Report of the Society for its 94th year of activities (2014) was presented by Academic Secretary Killu Paldrok.

April 23 – LANGUAGE DAY of Ferdinand Johann Wiedemann language prize held at the Väike-Maarja community centre. There were three papers on agenda. Traditionally, the memorial oak was planted and the paper was delivered by Leelo Tungal, laureate-elect of the Wiedemann language prize 2015.

At four meetings with papers (one in Tallinn and three in Tartu) 13 papers were delivered.

January 22 – the meeting on the topic of dictionaries held in Tartu; speaking were Maria Tuulik and Kristina Koppel, Jelena Kallas and Tõnis Nurk.

May 12 – the meeting on the topic of etymology held in Tallinn and titled COHESIVE WORDS, celebrating the 70th birthday of Enn Ernits and Lembit Vaba; speaking were Lembit Vaba, Enn Ernits and Ojārs Bušs. Followed the presentation of Lembit Vaba's collection of articles INSIGHT INTO WORD (*SÕNASISSE MINEK*), reviving the tradition of issuing the series of proceedings of the Mother Tongue Society.

August 28 – the meeting held in the Song Festival Museum in Tartu and titled VOCAL ERA (*KÕNEKAS AEG*), celebrating the 65th birthday of Chairman of the Mother Tongue Society Professor Helle Metslang; speaking were Külli Habicht (co-speakers Helle Metslang and Karl Pajusalu), Renate Pajusalu (co-speakers Maret Kaska, Birute Klaas-Lang, Karl Pajusalu, Anu Treikelder, Virve-Anneli Vihman) and Miina Norvik.

November 13 – the old literary language day held in Tartu, celebrating the 80th birthday of honorary member of the Society Docent Emeritus Valve-Liivi Kingisepp. Papers were delivered by Jaak Peebo, Marju Lepajõe, Külli Habicht (co-speaker Külli Prillop); followed the concluding remark by Valve-Liivi Kingisepp.

Estonian Mother Tongue Society successfully continued organisation of school language days. In 2015, there were two language days held with the total of four papers.

Speaking at schools were Estonian philologists of different areas. At Kiviõli 1st Secondary School Jüri Viikberg spoke about THE SCHOOL LIFE 150 YEARS BACK and Pille Arnek about THE 17TH C.–19TH C. TOMBSTONE INSCRIPTIONS IN ESTONIAN. At Tallinn 21st Secondary School, Ann Veismann delivered a paper LANGUAGE AND MAN, Linda Freienthal spoke about the Mother Tongue Olympiad and Airika Harrik and Miina Norvik organised educational language quizzes and games. Member of the Society Egle Pullerits delivered at Märjamaa Gymnasium and at Tartu Jaan Poska Gymnasium 2 papers on language, style and on Language Working Group of the Mother Tongue Society.

October 19-21 – A three-day youth-oriented language camp at Voore NIPITIRI. LET US SPEAK OF NAMES (*NIPITIRI. RÄÄGIME NIMEDEST*). It brought together 25 gymnasium students over Estonia, incl. two Brussels gymnasium students from Estonian school and linguists from Mother Tongue Society, Institute of the Estonian Language, Tallinn University and the University of Tartu. 8 papers were delivered, with linguists of different generations presenting their specialty, discussions, games and contests organised, thoughts exchanged. Participants enjoyed connecting. The following topics were given closer consideration: Fred Puss to family names, Liina Paales to sign names, Marit Alas and Tiina Laansalu to place names, Janika Kronberg to names in Estonian literature,

Peeter Päll to city place names and planning of names, Risto Järv to names in popular tradition, Helen Plado to Mother Tongue Olympiad on names.

Elder of the Language Working Group of the Estonian Mother Tongue Society has been, since March 28, 2014 Külli Habicht. The Language Working Group includes Reili Argus, Reet Kasik, Krista Kerge, Katrin Kern, Einar Kraut, Helika Mäekivi, Urve Pirso, Peeter Päll, Maire Raadik and Arvi Tavast. The Language Working Group held 2 sessions and 2 e-mail discussions.

Central topics of discussion in 2015 were change of the rule of declination of declinable word-couples like *lasteaed-alkkool*, *arst-resident*; discussion of relevance of additions to morphology of STANDARD ESTONIAN DICTIONARY (ÕS) 2013; issues of notification of public; specification of topics needing further research (research of quality of the translation language basing on fiction and utility texts, in order to follow the scope and effect of possible contact impacts on structure of the literary language; declination of apposition in unedited texts; problems of writing together or separately; orthology problems of teachers and students. Members and Elder of the Language Working Group have spoken to training events designed for students, teachers and language editors, at language and information days, e.g. conference of law-making jurists and on days of the language in crucible of change in Tallinn, at teacher training days in Tallinn and Tartu. Public has been apprised about the recent language planning topics and positions through Internet, issues of press, magazine *Oma Keel*, collection LANGUAGE ADVICE RECOMMENDS and oral papers. Researchers have spoken up in newspapers and on radio and have answered the inquiries both by individuals and institutions.

In 2015, some earlier linguistic undertakings were restarted: the dictation of mother tongue in cooperation with the University of Tartu and Estonian National Broadcasting Company; the summary writing competition GIST IN A NUTSHELL (*TUUM*) in cooperation with the University of Tartu and Estonian Mother Tongue Teachers Society; reciprocal study trips of the University of Tartu and Tallinn University and language quizzes and conundrums in the magazine *Oma Keel* and in the Language Information Sheet.

In cooperation with Ministry of Education and Research, for the first time in history a one-off lump-sum stipend was granted designed to master students studying under curriculum “teacher of the Estonian language and literature” (6 × 400 EUR).

Released in 2015 from print were

- Estonian Mother Tongue Society Yearbook 60 (2014). Editor in Chief Mati Erelt, Editor Sirje Mäearu. Estonian Mother Tongue Society of the Estonian Academy of Sciences. Tallinn, 2015, 312 pp.;
- Vaba, L. Insight into word (*Sõna sisse minek*). Tallinn, 2015, 495 pp. (Proceedings of the Mother Tongue Society; 73);
- Language Magazine *Oma Keel*, 2015, 1, 104 pp.

ESTONIAN ASSOCIATION OF THE HISTORY AND PHILOSOPHY OF SCIENCE

Associated with the Estonian Academy of Sciences
4.02.1998

Founded 1967

Membership: 61 active members, 8 honorary members, 6 collective members

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Estonian Association of the History and Philosophy of Science (EAHPS) associated with the Estonian Academy of Sciences is divided into Tallinn and Tartu branches. It is a member of the Baltic Association of the History and Philosophy of Science and a member of both autonomous divisions of the International Union of the History and Philosophy of Science, of which the first embraces the history of science and technology, and the other the logic, methodology, and philosophy of science.

The Executive Board of the Association met twice (May 29 and August 17, 2015). The general meeting was also held twice in Tartu, in the Centre for Science Studies of the Estonian University of Life Sciences (Veski 4) on May 29, 2015 and August 17, 2015. The general meeting approved the activities report of the Association for 2014 and the working plan for 2015. It also elected a new board for the next term. The Executive Board consists of Peeter Mürsepp, Erki Tammiksaar, Lea Leppik, Endla Lõhkivi and Tarmo Kiik. We lost two of our renowned board members in 2015. Ülo Kaevats died after a long disease at the end of January and Rein Vihalemm, who was the leading philosopher of science in Estonia, died on the July 18, 2015.

Cooperation project between EAHPS and Wikimedia Estonia for integrating THE BIOGRAPHICAL LEXICON OF ESTONIAN SCIENCE into Wikipedia continued throughout 2015. All the biographies from the third volume and the majority of biographies from the fourth volume have been inserted into Wikipedia in Estonian. In order to integrate the first two volumes of the lexicon into Wikipedia, an agreement with former Estonian Encyclopaedia Publishers (EEP) has to be reached (EAHPS has shared authorship for the two volumes). Unfortunately our attempts to find common ground did not bear fruit in 2015. We hope to reach an agreement in 2016.

EAHPS cannot pursue cooperation with the Council of Rectors in order to update the biographies of the lexicon and create a user-friendly database before we have reached an agreement with EEP. Nevertheless, both counterparts

express commitment to the project. As soon as EAHPS signs a contract with the representatives of EEP, the updating of biographies and the creation of the database will commence.

The general meeting of EAHPS decided to print manuscripts of the III and IV volume of THE BIOGRAPHICAL LEXICON OF ESTONIAN SCIENCE on regular sheets. That enables us to create a physical copy of the full lexicon in addition to digital resources.

The Executive board of EAHPS commenced preparatory work for THE XXVIII BALTIC CONFERENCE ON THE HISTORY OF SCIENCE that will take place in Tartu in 2017. The keywords of the conference are the University of Tartu and G.F.Parrot. The main focus is on the development of theoretical and practical sciences and areas of life on the western border of the Russian Empire in early 19th century.

The Association supported the publication of the scientific journal *Acta Baltica Historiae et Philosophiae Scientiarum*. In total 6 issues have been published (two in 2013, two in 2014 and two in 2015).

The members of EAHPS participated at various local and international events and conferences that were dedicated to the history and philosophy of science.

Our members took part in the 15TH CONGRESS OF LOGIC, METHODOLOGY, AND PHILOSOPHY OF SCIENCE IN HELSINKI (3.08-8.08.2015). Peeter Mürsepp and Ahti-Veikko Pietarinen also organised and chaired various symposiums during the congress. Peeter Mürsepp represented Estonia at the General Assembly. The General Assembly decided to change the name of the Division of Logic, Methodology and Philosophy of Science to the Division of Logic, Methodology and Philosophy of Science and Technology.

The XXVI INTERNATIONAL BALTIC CONFERENCE ON THE HISTORY OF SCIENCE was held in Riga and Jelgava (October 1-2, 2015). From 2015 to 2017 the presidential chair of the Baltic Association of the History and Philosophy of science will be held by Peeter Mürsepp.

EAHPS members also participated in smaller local and international events dedicated to the history and philosophy of science.

ESTONIAN LEARNED SOCIETY IN SWEDEN

Associated with the Estonian Academy of Sciences 19 March 1999

Founded 1945

Membership: 86 active members and 2 honorary members

Address: c/o Evelin Tamm, Skogsbrynsby 15, Nibble, SE-15391 Järna, SWEDEN

Chairman: Evelin Tamm, the above address, tammevelin@gmail.com

Secretary: Helena Faust, Tel: +46-(0)76 110 8226, helenafaust@gmail.com

The Southern Swedish Department of the Society: 16 active members and
2 honorary members

Address: c/o Kristiina Savin, Södra Esplanaden 20D, 223 52 Lund, SWEDEN

Chairman: Nora Ausmees, Tel: +46 76 631 4049 1150, nora.ausmees@biol.lu.se

Secretary: Kristiina Savin, Tel: +46 46 12 2945, kristiina.savin@kultur.lu.se

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

In 2015 the Society held its annual meeting, five public seminars, one day Tallinn trip to visit the Estonian Academy of Sciences, one research project symposium, and the annual celebration of the Anniversary of the Estonian University. The meetings took place at the Estonian House in Stockholm.

The meetings dealt with various topics: CONTACTS BETWEEN THE ESTONIAN AND SWEDISH LANGUAGES THROUGH THE AGES (Raimo Raag), THE SWEDISH PERIOD IN ESTONIA – DIFFERENT ASPECTS AND VIEWS (Kari and Ülle Tarkiainen), THE CARCINOGEN VIRUSES AND THEIR IMMUNOLOGY (Helena Faust), GLIMPSES AT NUCLEAR ENERGETICS (Marti Jeltsov), and THE RESTORATION OF THE ESTONIAN NATIONAL DEFENCE 1992/93. THE FIRST CONCEPTION AND THE SO-CALLED ISRAELI TRANSACTION OF ARMS (Hain Rebas).

December 1 – the 96th Anniversary of the Estonian University at Tartu was celebrated. Tenor Mikko Pulkkinen sang songs and Kairi Ilison recited Estonian poetry. A scientific paper was delivered by Rogier Blokland, Uppsala professor of Finno-Ugric languages, on the topic THE PAST AND THE FUTURE OF THE SOUTH-ESTONIAN LANGUAGE(S).

At the end of 2015 the Society's *Annals* XV was still in the proofreading stage. The preparation of the *Annals* XVI has begun and is planned to be issued in 2018, hopefully in time for the 100th Anniversary of the Estonian Republic.

March 15 – the Southern Swedish Department of the Society held its annual meeting. Kristiina Savin (PhD) of the Uppsala University delivered a paper titled DO THE EMOTIONS HAVE A TRACK RECORD? ENVY AND ENMITY OVER AGES.

November 29 – a seminar with Christo Burman (PhD) of Skövde University College speaking on the topic THEATRE AS VIEWED THROUGH CAMERA: INGMAR BERGMAN FILMS.

ESTONIAN LITERARY SOCIETY

Associated with the Estonian Academy of Sciences
23.01.2001



Founded in 1907

Members: 280 members (incl. 8 honorary members, 35 lifetime members and 21 regional representatives)

Address: Vanemuise 19, 51014 Tartu, ESTONIA

www.kirjandus.ee

Chairman: Toomas Liivamägi, Tel: +372 515 3274, toomas.liivamagi@ut.ee

Academic secretary: Marja Unt, Tel: +372 742 7079, eks@kirjandus.ee

The year of 2015 may be considered most labour-intensive for the Estonian Literary Society (EKS) of recent years, and also decisive, in view of the future. On July 15, the city of Tartu sent to UNESCO an official application for candidacy in the network of creative cities of UNESCO, in the category of the city of literature. EKS has had a leading role in the process of standing for membership both as initiator of the process and compiler of material necessary for composing the application and as map-maker of the Tartu literary life. The application completed in cooperation with the Tartu-based institutions and organisations related to literature and study of literature is the result of long work, which obtained a positive feedback at the end of year: on December 11 UNESCO announced the new towns admitted to the network of creative cities, among them also the city of literature Tartu. It can be considered a singular achievement in the activities of the Society and its cooperation partners, while larger work or activities on the substance of the case lies naturally ahead. It will open to Estonian literature, literary life and study of literature new vistas for international cooperation and for presentation of achievements in the area of literature.

Hopefully, this will also give a new start to membership in the Society. For quite some years the Board has been worried by decreasing numbers of its membership, while newcomers have been scarce. For that reason the Society has launched a vigorous public relations effort, in particular among young generation of literary critics; in the past year several new members were admitted.

In April the traditional session of the annual review of literature took place where the Estonian poetry, prose and drama and children literature of 2014 were discussed. Speaking were the literary critics of younger generation. The following papers were delivered: Siret Paju *EESTI SÕNAD EESTI LAVAL AASTAL 2014* (ESTONIAN WORDS ON ESTONIAN STAGE IN 2014), Mari Peegel 2014 TOP 10, Tõnis Hallaste *MIS KÕIK MAHUB ÕUDSE JA ÕDUSA VAHELE* (WHATEVER FITS IN BETWEEN SCARY AND COSY) and Agnes Neier and Joosep Susi *MIS EI OLE LUULE* (WHAT IS NOT POETRY).

On April 23 – in Tartu the DAY OF BOOK AND ROSE was celebrated as a warm-up event of the LITERARY FESTIVAL PRIMA VISTA, the programme of which embraced a book fair, various book presentations and the announcement of laureate of the literature prize of Prima Vista and Tartu Cultural Endowment *ESIMENE SAMM* (THE FIRST STEP) and laureate of the new children' literature prize instituted in Tartu *LAPSEPÕLVE AUHIND* (CHILDHOOD PRIZE). There was also the presentation of the new CD in the series of records *KIRJANIKE HÄÄLED* (THE VOICES OF WRITERS) being issued by the Society in cooperation with the Estonian Literary Museum. It was the seventh CD carrying the work by Hannes Varblane *KÕIKIDE ÜKSILDUSTE AJAL* (AT THE TIME OF POIGNANT SOLITUDE). The paper on Varblane's poetry was delivered by master student of Estonian literature Joosep Susi.

May 6-9 – the 12th Tartu International Literary Festival Prima Vista was held, co-organised by the Literary Society, carried over for one day to a partner town, notably Põlva. The subtitle of the festival was *METSİK SÕNA* (RAMPANT WORD). The patron of the festival was Valdur Mikita. The festival was attended as speakers and audience by quite a few authors, literary critics, readers and researchers of literature from all over Estonia. The foreign guests included musical critic and journalist Artemi Troitski, Russian author Eduard Uspenski, Finno-Swedish author Kjell Westö, Hungarian author Centauri, Swedish author Thomas Bannerhed, Lithuanian author Alvydas Šlepikas, Polish author Witold Szablowski, English poets Bob Beagrie and Andy Willoughby and many others. The programme included the traditional Park Library, the Prima Vista book fair and also book presentations, lectures, discussions, concerts, exhibitions, film nights and various other events. The Tartu House of Literature hosted the night talk-shop organised by the Estonian Folk Poetry Archives *MINU MAASTIKUD: KOHTI ENDAS JA ÜMBRUSES* (MY LANDSCAPES: THE PLACES WITHIN AND WITHOUT) with Mehis Heinsaar, Valdur Mikita, Jüri Metssalu and Kadri Tüür participating. Timo Maran delivered a lecture on literature of nature. There was also held the seminar moderated by Kadri Tüür and Ene-Reet Soovik *BIOSEMIOOTILINE KRIITIKA* (BIOSEMIOVIC CRITICISM) and fanciers of Spanish and culture of Spain had an opportunity to hear the lecture by the author Jenaro Talens on history of translation in and from Spanish. Andrei Makarevitš delivered a public lecture in the University of Tartu *MIS ON ILU?* (WHAT IS BEAUTY?) and the British historian of culture, musician and composer Sarah Angliss delivered a lecture *MEES, KES OSTIS KAJA* (MAN BUYING ECHO). The Patron's Night being traditional at the festival was held in the form of a public record of the Radio Night University: Valdur Mikita conversed with the psychologist Jaanus Harro on the topic *MIS INIMESEL ARUS ON* (WHATEVER HAS ENTERED MAN'S HEAD).

In June, the Liinakuru farmstead hosted the VIII spring school of students of literature organised jointly by the Society and the Institute of Cultural Sciences

and Arts of the University of Tartu. The papers were delivered by literature students and master students of the University of Tartu.

In September the Society co-promoted the 11TH INTERNATIONAL SCIENTIFIC CONFERENCE OF ESTONIAN COMPARATIVE STUDY OF LITERATURE ASSOCIATION (*ILU*) *KIRJANDUSLIK TÕLGE: KAS KULTUURILIS-VAIMSE DIALOOGI TEGUR VÕI AKULTURATSIOONI TÕÕRIIST?* (LITERARY TRANSLATION: ACTOR OF CULTURAL-SPIRITUAL DIALOGUE OR ACCULTURATION?).

In October the Society presented the poetry CD of Paul-Eerik Rummo *NET, MESH OR KNOTS* from the series *THE VOICES OF WRITERS*. Paper was delivered by Janika Kronberg.

November 19-21 – EUROPEAN POETRY SLAM CHAMPIONSHIP (EPSC) and FESTIVAL *CRAZY TARTU 6. HEALTH* held in Tartu at the restaurant *Vilde* and at *Vilde Health Cafe*. Poetry Slam (Est. *luuleprõmm*) is a competition at which poets read or recite original work. These performances are usually judged by selected members of the audience or by a panel of judges. Typically, the judges score on a scale of 1-10 (one being the worst, ten being the best). The highest and lowest scores are dropped and the middle three are kept. The highest score one can receive is a 30 and the lowest is a zero. The title of the European champion was awarded to representative of Portugal – founder and promoter of *Amadora Poetry Slam* Nuno Miguel Garcia Piteira. The INTERDISCIPLINARY INTERNATIONAL FESTIVAL *HULLUNUD TARTU (CRAZY TARTU)* was held for the sixth time, with the subtitle *HEALTH*. Works were presented by Estonian authors and visiting lecturers Kung Henry (Sweden), Peter Waugh (Austria/UK) and Raquel Lima (Portugal). Within that festival of entwined literature, art and music, an art exposition was opened in the club *Promenaadiviis* and Margo Kõlar's choir piece *MEIE KAKSKÜMMENDKAKS (OUR 22)* was presented for the first time. There were also workshops – *KÕLA- JA ESITUSLUULE LABORATOORIUM (LABORATORY OF VOCAL AND PRESENTATION POETRY)* supervised by veteran poetry slammer, lecturer, poet and member of international panel of European Poetry Slam contest Peter Waugh, and the workshop *LUULE JA SUGU (POETRY AND GENDER)* supervised by young poet of Portugal Raquel Lima.

In December, the project *BUSSILUULE (BUS POETRY)* geared up. The Tartu public traffic buses carry stickers now with works of ten Estonian poets.

At the anniversary conference dedicated to Jüri Talvet's birthday held in mid-December, the new CD from the series *THE VOICES OF WRITERS* was presented – Jüri Talvet's poetry CD *EESTI ELEGIA (ESTONIAN ELEGY)*. The paper on Talvet's poetry was delivered by doctoral student of Estonian literature Kadri Naanu.

Published by the Society in 2015:

- Hannes Varblane, *At the time of poignant solitude*, CD
- Paul-Eerik Rummo, *Net, mesh and knots*, CD
- Jüri Talvet, *Estonian elegy*, CD.

LEARNED ESTONIAN SOCIETY

Associated with the Estonian Academy of Sciences
23.01.2001



Founded 1838

Membership: 115 active members, 16 honorary members

Address: Jakobi 2, 51005 Tartu, ESTONIA

www.ut.ee/OES

Chairman: Marju Luts-Sootak, Tel: +372 737 5396, marju.luts-sootak@ut.ee

Vice-Chairmen: Tiit Rosenberg, Tel: +372 737 5650, tiit.rosenberg@ut.ee

Heiki Valk, Tel: +372 737 5653, heiki.valk@ut.ee

Secretary: Freydis Ehrlich, Tel: +372 5554 0705

At the annual meeting of 2015, six new members were admitted to the Society: Marek Miil, Kaarel Piirimäe, Madis Maasing, Mihkel Mäesalu, Merike Ristikivi and Alo Raun. In 2015, Toivo Sikka, Maare Kümnik, Ela Martis ja Veera Pino and honorary members Lembit Jaanits and Ants Viies deceased.

The Board of the Society operated in the following composition: Marju Luts-Sootak, elected Chairman at the annual meeting, Vice-Chairmen Tiit Rosenberg and Heiki Valk, librarian Kersti Taal, members Mart Kuldkepp, Taavi Pae, Tõnu Tannberg, Piret Õunapuu.

In the reporting year the Board held three meetings: on January 26, April 8 and September 23. A number of topical issues were also settled through communication by e-mail. The topics of discussions concerned preparation for the annual meeting, composition of Board, admittance of new members and election of honorary members; organisation of accountancy of the Society, and putting in order of the archives. The Board was concerned with the issues relating to the publication of the Year Book of the Society. The Board also discussed allocating a scholarship of the Society for the best article released in a publication of the Society, organisation of meetings with papers etc.

Membership of the Society is more numerous than its core, comprising the members actively attending the events of the Society and regularly paying the membership fees. In 2015, 95 euros from 15 members were received in the Society bank account. As compared to the previous year, the number of membership fee payers has substantially decreased (from 58 to 15). The best part of members pay the fee as it falls due, however there are some members having defaulted on that obligation for over three years.

In that year, there were organised 15 meetings with papers, incl. two book presentations. Kärt Summatavet delivered the paper TRADITION? INSPIRATION! SPRING-WELLS IN DEEP-BURIED STRATA OF ARCHAIC CULTURE in connection

with her author exposition at the Estonian National Museum. (Cf. in 2014 there were 15 meetings with papers, in 2013 – 14).

Meetings with papers were attended by 365 people, i.e. 23 persons per event, on an average, of them 13 members of Society and 10 guests, somewhat fewer than in previous years (in 2014, 24.5 persons per event, on an average and in 2013 – 25).

September 11 – in cooperation with the Vanemuise Society, the Museum of the University of Tartu and the Song Festival Museum, the conference was held in the white hall of the Museum of the University of Tartu on Toome titled 150 YEARS OF SOCIETIES IN ESTONIA. On agenda were seven papers. In the opening papers Tiit Rosenberg of the Society provided a review on background of the grass-roots movement in Estonia for promotion of societies, its basic stages and the present situation with research in the history of societies. Peeter Järveldaid of the Society delivered a paper on legal background of the movement for promotion of societies. Valter Haamer (the Vanemuise Society) spoke, by reference to *Eesti Postimees* about the society of Estonia in 1865 and Malle Salupere (the Vanemuise Society, the Learned Estonian Society) about J.W.Janssen as the Founding Father of Estonian movement for promotion of societies.

In the second half of the conference Lea Teedmaa (Estonian Historical Archives) delivered a review about materials on societies having operated in Tartu in the 1860s and deposited in the Historical Archives. The paper by Lea Leppik (the Learned Estonian Society, Museum of History of the University of Tartu) considered the relations of the Vanemuise Society and the University of Tartu and the paper by Kersti Taal (the Learned Estonian Society) the relations of the Learned Estonian Society and the Vanemuise Society. The conference was closed with the review by Evald Kampus (the Vanemuise Society) about the current-day Vanemuise Society within the community of other cultural societies.

On occasion of the 150th anniversary of the Vanemuise Society the Learned Estonian Society donated to the Vanemuise Society for its library a set of its publications (the Year Books and Proceedings), which the Chairman of the Society and the Vice-Chairman handed over to the Vanemuise Society at the ceremonial meeting on December 12.

At organising the meetings with papers and other events, the Learned Estonian Society engaged in cooperation with the Vanemuise Society, the Song Festival Museum, the Estonian Academic Law Society and the Estonian National Museum. In 2016 the links of the Society with the Mother Tongue Society will hopefully be invigorated. Underway are preparations for a joint conference.

In the reporting year, the YEARBOOK OF THE LEARNED ESTONIAN SOCIETY 2014 was published. The courteous subsidy for activities extended by the Estonian Academy of Sciences (4,500 euros in 2015) is sufficient to either

publish the Yearbook (language editing, layout, printing) or to pay the salary of the Secretary of the Society. The Society has consistently sought support for publishing the Yearbook also from other sources. It was thanks to the courteous support from the national programme THE ESTONIAN LANGUAGE AND CULTURAL MEMORY II (2014-2018) of the Ministry of Education and Research and the Estonian Cultural Endowment that the Yearbook 2014 appeared.

The Board of the Society decided to highlight in the Yearbook the article POTATO CAMPAIGN OF RUSSIAN CENTRAL GOVERNMENT IN ESTONIA AND LIVONIA IN 1840s, and the stipend of the best author was granted to Marten Seppel, PhD. Members of Board nominated as candidates for the stipend also Kaur Altoa, Ago Pajur and Anti Lillak.

In the area of archaeology low-scale emergency excavations were carried on expense of the funds of the city of Viljandi in the castle hill, where the hillock situated in the song-dais end of the castle park was found to be the remnants of the enclosure. Other research works amounted to building-related archaeological surveillance. The research was done in Tartu at renovation of the duct in Riia St, Jaama St and Kivi St, as well as in the North-Viljandi County at Metsküla, where the cable duct ran through the settlement area and the protection zone of the cairns. In the Viljandi County, more surveillance was carried out in the area of the septic tank being built at Metsküla, as well as tentative surveys in the Savikoti hamlet.

Basing on the paper by Ants Hein there was completed the manuscript of the book recounting about Estonian mediaeval stone manor houses and small fortified mounds, of which the layout has by now been finalised, by support from the Estonian Cultural Endowment (The book will appear in the series of the proceedings of the Estonian Learned Society).

To sum up, the activities of the Society continuously contribute to the development of the humanities with the history sciences and archaeology dominating, as before. In 2015 there were also quite a few papers on history of law.

The financial support from the Estonian Academy of Sciences has enabled the Society to continue its time-honoured activities in organising seminars. The potential of the Society could add both scientific and cultural vigour to organising various events and issuing printed matter. Given the present funding system however even the release of the Yearbooks and other printed matter has become quite problematic, necessitating ultimate efforts to locate additional finances.

The Board of the Society estimates the work of the Society in 2015 as quite satisfactory, however the lack of additional stable funding is of some concern, lest we should fail to maintain the level attained.

ESTONIAN MUSICOLOGICAL SOCIETY

Associated with the Estonian Academy of Sciences
21.05.2004

Founded 1992

Membership: 89 active members (of whom 4 outside Estonia), 1 honorary member (Professor Emeritus of Lund University Folke Bohlin)

Address: Tatari 13, Tallinn 10116, ESTONIA, emts@hot.ee

www.muusikateadus.ee

Chairman: Kerri Kotta, Tel: +372 528 8781, kerri.kotta@gmail.com

Estonian Musicological Society brings together researchers in music and people entertaining the interest to scholarly study of music and supports research in all fields of musicology in Estonia.

The achievement of 2015 was releasing the seventh issue of the musicological yearbook *RES MUSICA* which concentrates on music analysis, in cooperation with Department of Musicology of Estonian Academy of Music and Theatre. *RES MUSICA* is a periodical issue with international editorial board, publishing peer-reviewed scientific articles from all areas of musicology. The yearbook is open to international cooperation. The issue is prevalently in Estonian; however, it includes extended abstracts of articles in English or German.

February 5-7, 2015 the conference *URBAN MUSICAL LIFE IN NORTHERN EUROPEAN COMMON CULTURAL SPACE* was organised in Tallinn by the Estonian Musicological Society and the Department of Musicology of the Estonian Academy of Music and Theatre. 22 papers were given by musicologists from Germany, Sweden, USA, Latvia, Russia and Estonia (the Estonian presenters included Aleksandra Dolgoplova, Heidi Heinmaa, Urve Lippus, Kristel Pappel and Toomas Siitan). The keynote speech was delivered by Hermann Danuser (Humboldt University, Berlin).

Upon organisation of the Society, every year there are regularly held two meetings with papers, in spring at Tartu and in autumn in Tallinn. *THE SOCIETY'S DAY OF TARTU* on April 18, 2015 took place in the building of Vanemuine Concert Hall, Salva room, and its topic was piano. The keynote speech was delivered by Urve Lippus who concentrated on piano as a domestic music making instrument before the era of music machines. The papers were also given by Elisabeth Hõbesalu, the owner of the Estonia Piano Factory Indrek Laul, Jorma Toots and Alo Põldmäe.

In the autumn *LEICHTER DAY* in Tallinn on November 24, 2015, two papers were given by Esa Lilja (Helsinki University) and Aare Tool (Estonian Academy of Music and Theatre). Esa Lilja concentrated on harmony and its function

in creating form in classic heavy metal. Aare Tool discussed the topic of the one-movement form that replaces the cycle in a number of chamber works by Heino Eller, Eduard Tubin and Eduard Oja. In addition, the seventh issue of *RES MUSICA* was presented.

The society also participated in organisation of the interdisciplinary conference KOTZEBUE-GESPRÄCH IV (September 4-5, 2015 in the Estonian Academy of Music and Theatre / Kõue Manor). The event included a number of presentations by Estonian and German literary, art and music scholars.

It has been a long tradition of the Society to organise a culture-lore trip at the beginning of September. In 2015 the Society visited the places of historical Livonia in Latvia.

ESTONIAN PHYSICAL SOCIETY



Associated with the Estonian Academy of Sciences
14.06.2005

Founded 1989

Membership: 362 active members, 4 honorary members

Address: Ravila 14c, 50411 Tartu, ESTONIA, efs@fyysika.ee

www.fyysika.ee/efs

Chairman: Kaido Reivelt, Tel: +372 737 4623, kaido.reivelt@ut.ee

The traditional ESTONIAN PHYSICS DAYS were held in the *Physicum* of the University of Tartu on March 20 – the SCIENCE DAY, and on March 21 – the DAY OF EDUCATION IN PHYSICS. Within framework of the PHYSICS DAYS, the general meeting of the Society was held on March 20, approving the activities' and economic report of the Board of Society. The working day was consummated with the traditional social evening. On March 21 there was general meeting of the division of teachers of physics, with Siim Oks, the physics teacher of the Hugo Treffner Gymnasium being elected new chairman.

At PHYSICS DAYS the annual prize of the Society was announced, the laureates being the laboratory of physics of nano-structures of the Institute of Physics of the University of Tartu “for high-level results in research” and Toomas Plank “for self-abnegating work in directing the building of the Physicum”. We also bestowed recognition on Kadri Veende for organising the basic school learning chambers of physics, on Mari-Liis Jaansalu and Jürgen Vahter for organising the work of SCIENCE BUS and organising the SCIENCE CAMP of the University of Tartu, on Liivi Plumer for organising the biology learning chambers, on Ott Kekišev for organising chemistry learning chambers and on Eero Uustalu for carrying out the gymnasium learning chambers of physics.

April 11-12 – at the 62ND PHYSICS OLYMPIAD OF ESTONIAN SCHOOL YOUTH, the special prize of the Society (annual subscription to Scientific American) was granted to Kristjan Kongas (Tallinn Modern School).

The Society carried on its mission of popularising research. The SCIENCE BUS BIG DIPPER continued its work (www.teadusbuss.ee), we organised the SCIENCE CAMPS of the University of Tartu (www.teaduslaager.ee) and released news in science in the physics portal (www.fyysika.ee).

In cooperation with University of Tartu Youth Academy, there continued the programme of physics, chemistry and biology learning chambers which the Society launched in 2010 (www.fyysika.ee/opikojad).

The work of Society with physics textbooks and digital study materials continued. The environment of physics e-textbooks (õpik.füüsika.ee) broadened

considerably, the number of its users increased tenfold in 2015. In cooperation with the Maurus Publishers we prepared the first part of nature study workbook for the 7th grade. (authors Riina Murulaid, Evi Piirsalu and Katrin Vaino) and we were compiling the 8th grade physics textbook (author Erkki Tempel).

DIVISION OF TEACHERS OF PHYSICS OF THE SOCIETY

November 7 – the autumn seminar of teachers of physics in Voore Leisure Centre. Participating were 95 physics teachers, during two days they heard lectures, got hands-on practical training and shared experience.

Division of Teachers of the Society also continued organising study trips to the European Nuclear Research Centre (CERN). In two groups the week-long training was provided to 23 physics teachers. The project was coordinated by Riina Murulaid of the Society. In CERN our partner was Martti Raidal and his team.

Since September 2015, Division of Teachers of the Society started, in cooperation with school physics centre of the University of Tartu publication of the physics teachers weekly *Mesilane*. By the end 2015, 15 weeklies had appeared, the feedback of physics teachers has been excellent.

THE SOCIETY OF PHYSICS STUDENTS

The Society of Physics Students (FÜS, fys.fyysika.ee) continued carrying out the programme THE STUDENT TO THE PHYSICS CLASS!, where students of physics of the University of Tartu deliver lectures at school on most recent and topical scientific problems.

The Society of Physics Students organised from October 30 to November 1 in Voore Leisure Centre the autumn school in exact sciences, jointly with Society of Students of Biology. There were over one hundred students in attendance.

The Society of Physics Students was an active promoter of student life in the University *Physicum*, when a grand spring feast was held, as well as quizzes, conundrums and seminars.

The Society of Physics Students also participated in development programme EXCEL YOURSELF of student organisations of Foundation of Representation of the University of Tartu.

THE GLOBE PROGRAM IN ESTONIA for environmental awareness continued (www.globe.ee). The new supervisor of the programme is now Laura Altin. The GLOBE summer camp 2015 was international (GLOBE Regional Learning Expedition 2015, see www.globe.ee/GRLE2015), attended by teachers and school students from Latvia, Russia, Lithuania, Finland and Ukraine. There were also traditional activities of GLOBE – GLOBE contest of research works, the student conference and GLOBE teachers' autumn seminar.

The Society is member of the European Physical Society.

The Yearbook of Society 2015 was compiled electronically to appear at the address õpik.füüsika.ee.

ESTONIAN ASSOCIATION OF ENGINEERS

Associated with Estonian
Academy of Sciences
23.09.2008



Founded 1921 Estonian Union of Engineers
Re-founded 10.12.1988 Estonian Association of Engineers
Membership: 18 members (legal entities), incl. 1,800 individual members
Address: Liivalaia 9, 10118 Tallinn ESTONIA, info@insener.ee
www.insener.ee
President: Arvi Hamburg, Tel: +372 516 2026, arvi.hamburg@ttu.ee

Estonian Association of Engineers is a non-profit organisation, acting in public interests. The Association is an umbrella organisation, bringing together the professional organisations of engineers, trainers of engineers and innovative employers, and all those interested in developing the engineering knowledge and technology.

MISSION – promotion of Estonian engineering sciences and development, innovation, and respective educational policy.

VISION – knowledge- and innovation-based society.

MEMBERS OF THE ASSOCIATION IN 2015

Membership of the Estonian Association of Engineers comprises eleven professional organisations, two universities, one higher school, one professional education institution and four companies of stature.

In 2015, members of Association were:

- Estonian Society for Biomedical Engineering and Medical Physics
- Estonian Association of Civil Engineers
- Estonian Society for Electrical Power Engineering
- Estonian Transport and Roads Association
- Estonian Association of Engineers for Heat Engineering
- Estonian Mining Society
- Estonian Association of Systems Engineers
- Põlva Association of Engineers
- Estonian Electronics Society
- Estonian Association of Mechanical Engineers
- Tallinn University of Technology
- Estonian University of Life Sciences
- Tallinn University of Applied Sciences

- KH Energia-Konsult
- Viru Keemia Grupp AS
- ÅF-Consulting AS
- Grafitek OÜ
- AS Amhold
- Tallinn Polytechnic School

In the reporting year, one general meeting and six meetings of the Board were held. The priority in activities has been assigned to valuation of engineering education and engineer's profession.

The key areas were related to the RESEARCH AND TECHNOLOGY PACT (PACT), focussing on the activity, involving the concerned parties and local self-government. The Association goes all out to involve into common activity the hobby circles, basic schools, gymnasiums, professional education institutions, universities, applied higher schools, entrepreneurs, amalgamations of companies, unions and public sector. There is an understanding in principle to involve the Rapla County, the Kehtna Parish, the Kehtna Economics and Technology School into the activity uniting training and entrepreneurship of the region.

The Association also participates in composing the basic schools' and gymnasiums' curricula, doing it not only respecting the technology, but also contributing to composing the modern methods of teaching basic-school and gymnasium mathematics. Such motivated need was voiced by directors of state gymnasiums at the joint information event of Estonian Research Council, Ministry of Education and Research and the Association on October 28, 2015 in Tartu Tamme Gymnasium.

The Association participated actively at the cooperation conference of Research Council on November 19, 2015 in the glass hall of Tallinn Song Festival Grounds. We presented the role of engineering and technology in development of society and the opportunities of youth for studies and work in the area.

There is a well-planned activity to achieve the goals of PACT. We organise regular lectures, practical classes and supervising of hobby circles in basic schools, gymnasiums and professional education institutions. We have selected the target groups from schools, where most graduates enrol at universities to study areas of technology.

Broadening of the PACT by involvement of public sector and local self-governments is absolutely necessary for getting the Pact under way; it is the priority of the Association. Quite naturally involvement of the state and companies' funds is needed to implement the activities of the Pact. We are eagerly hoping for support from Programme TeaMe+, complemented by public applications contest for funding a single project to be organised within it in 2016.

The activities organised by Association:

- Roundtable FROM RESEARCH TO BUSINESS
- Dissemination of information through Internet environment [www/insener.ee](http://www.insener.ee)
- Finalising the composing of engineer's professional standards
- Accrediting of higher education I and II stage curricula in FEANI and processing of Euro-engineer qualification applications
- Adjustment of results of reforms of the Foundation Estonian Qualification Authority to working principles of the Association

The Association is represented in three professional councils and our member organisations participate in the work of eight professional councils, incl. health and education.

The responsibility for the work on the substance of the case for awarding to the graduates of Estonian colleges and universities the primary profession has been vested in the Association since 2016. The standard of primary profession is being composed presently. It is our professed objective to grant to graduates of university master curriculum in engineering the profession 'diploma engineer' (i.e. certified engineer), level seven, primary profession, to grant to graduates of university of applied sciences the profession 'engineer', level six, primary profession.

The qualification committees of member organisations of the Association are engaged in analysis on points of fact when awarding the engineer qualification. Laws too, stipulate that engineer qualification shall be mandatory in a number of specialist jobs, which has given a new impetus to the drive to seek the engineer qualification. As suggested by the Association, members of faculty of higher schools teaching some professions must possess the engineer qualification.

The Association has been delegated by *Fédération Européenne d'Associations Nationales d'Ingénieurs* (FEANI) the right to accredit, subject to FEANI criteria, the higher education curricula, to be fulfilled by applicant for qualification of euro-engineer (EurIng).

Upon initiative of Board of the Estonian Academy of Sciences, there was an event in Tartu on December 7, on analysing the activity of organisations associated with the Academy and planning the common work. The associated organisations have also today significant results to boast, however they can and should be rendered more visible.

ELECTED ENGINEER OF THE YEAR 2015 at a contest of the Association was Milko Milatskov – supervisor of Stoneridge Electronics Estonia testing division, who graduated from Tallinn University of Technology as major in electronics and bionics in 2003.

The winner of the title Engineering Student of the Year 2015 was master student of Tallinn University of Technology Enn Karin. He was deemed to be worthy for bestowal of that honour due to his vigour in popularising the profession and the whole education in engineering, due to his great zeal in pursuing his own ends, and due to a motivating instinctual need to perfect the student life and an excellent organising capacity.

Elected laureate of the Lifetime Achievements Gratitude Award was former Rector of Tallinn University of Technology Andres Keevallik and the former Vice-President of the Association Aare Kitsing.

The Association participated at the FEANI GENERAL ASSEMBLY on October 7-9 in Portugal, Lisboa. The main topic was providing engineer qualification and the performance of development programmes designed for engineers. Engineer's competence and mobility are the propulsive elements of euro-engineer programme, consummated by recording the engineer in the FEANI Register.

The Association has assumed the task to carry out accrediting of the higher education curricula. We also set the goal of activating the engineering community of Latvia and Lithuania and to find a way to their accession to FEANI. The appropriate negotiations are underway.

The festive end-of-the-year meeting of the Association held on December 9 at the Estonian Academy of Sciences House celebrated the ENGINEERS' DAY with bestowing honours on best engineers. The topical paper was delivered by Rector of Tallinn University of Technology Jaak Aaviksoo.

ESTONIAN BIOCHEMICAL SOCIETY

Associated with the Estonian Academy of Sciences
13.11.2009

Founded 1959

Membership: 70 active members

Address: Akadeemia 15, 12618, Tallinn, ESTONIA, info@biokeemiaselts.ee
www.biokeemiaselts.ee

President: Peep Palumaa, Tel: +372 620 4410, peep.palumaa@ttu.ee

Academic Secretary: Vello Tõugu, Tel: +372 620 4411, vello.tougu@ttu.ee

The goal of activities of the Estonian Biochemical Society is providing support to research, and promoting teaching effort in biochemistry, contributing to the progress of related theoretical and applied scientific areas, raising public interest in those areas of science, and supporting of scientific interests of members of the Society.

The Estonian biochemists have a long tradition to organise spring schools for members of the Society and the guests interested in the topic. In 2015 that event was held in Veske recreation centre, Otepää on May 8-9. The curator of the spring school was Prof. Ago Rinke, from the University of Tartu and the executive organiser was Reet Link from the same University. The annual meeting of the Society was held in the electronic format.

The annual congress of the Federation of the European Biochemical Societies (FEBS), held in Berlin, was attended with papers by 3 members of the Society. The work of the FEBS Council held at the end of the Congress was attended, as representative of Estonia, by Academic Secretary of the Society Vello Tõugu.

With the aim to popularize the research activities among students, the Estonian Biochemical Society has awarded student science prizes since 2007 (guidelines of the contest are available on website of the Society). At the contest of the year 2015 the first prize was granted to Tarvi Teder (Tallinn University of Technology). Prizes were nominated to Julia Gavrilova (Tallinn University of Technology) and Katrin Kestav (the University of Tartu).

Members of the Society were actively involved in translation in Estonian of the textbook of general biochemistry.

ESTONIAN SEMIOTICS ASSOCIATION

Associated with the Estonian Academy of Sciences
15.12.2009



Founded 1998

Members: 70

Address: c/o Daniele Monticelli, Professor of Italian studies and semiotics of Tallinn University, Narva mnt 29, 10120 Tallinn ESTONIA

www.semiootika.ee

Chairman of the board: Eva Lepik, Tel: +372 375 413, eva.lepik@ut.ee

Vice-chairman of the board: Daniele Monticelli, Tel: +372 503 7536, daniele.monticelli@tlu.ee

In 2015, in addition to the traditional SEMIOTICS AUTUMN SCHOOL, Estonian Semiotics Association also organised an international SEMIOTICS SUMMER SCHOOL SEMIOTIC (UN)PREDICTABILITY and the CONFERENCE dedicated to 65th birthday of Professor Peeter Torop.

The ANNUAL GENERAL MEETING of Estonian Semiotics Association took place on May 12. Annual award, Semiotic Print (*Semiootiline Jälg*) for the best semiotic writings was bestowed on Riin Magnus for high level scientific articles, and the special prize for vigorous efforts in presenting semiotics given to Piret Karro (for organising the series of seminars *SEMIOSSALONG* and for issuing the collection of articles *FRIENDLY SEMIOTICS (SÕBRALIK SEMIOOTIKA)*). The meeting approved the annual accounts and management report for 2014 and discussed the new plan of development.

August 17-20 – SUMMER SCHOOL ON SEMIOTICS in Tartu on the topic of semiotic (un)predictability, organised by the Association and the Department of Semiotics of the University of Tartu. Linking the Tartu and Kääriku summer school tradition to conference of the Association of Semiotics of the Nordic countries brought together the scientists in humanities, social scientists and natural scientists from all over the world. Authors of plenary lectures of the summer school were four leading scientists from different areas (cognitive semiotics, anthropology, information and communication technology and theory, theory of physical and living systems): Jordan Zlatev (Sweden) *THE SEMIOTIC HIERARCHY REVISED: FROM LIFE TO LANGUAGE*, Ilya Utekhin (Russia) *HOW HUMANS DEAL WITH THEIR FUTURE: TOWARDS AN ANTHROPOSEMIOTIC ACCOUNT*, Mihai Nadin (USA) *ANTICIPATION AND SEMIOTICS. ONE CANNOT NOT INTERACT* and Stuart Kauffman (USA) *ON ENABLEMENT AND UNPRESTATABILITY OF LIVING*.

The summer school had 120 registered participants and about 30 occasional visitors, incl. 50 students with 30 of them presenting papers.

November 14-15 – XVI SEMIOTICS AUTUMN SCHOOL in Mammaste Leisure Centre titled IMPLIED / OSTENSIBLE (*PEITUMUS / NÄHTUMUS*), organised in cooperation with the Association of Semiotics' Students "Semioon". The autumn school was dedicated to Roland Barthes' 100th anniversary and focussed on topics of visual and photography. Speaking were Andreas Ventsel, Mari-Liis Madisson, Jaak Kikas, Eva Rein, Tarmo Virves, Peeter Laurits, Hasso Krull, Uku Peterson. Tarmo Virves carried out the photography workshop (ambrotype and daguerreotype). Moderator was Silver Rattasepp. Participants numbered over 60, mostly students.

November 27 – CONFERENCE dedicated to Peeter Torop's 65th anniversary held in AHHA Centre and titled CREATIVE MEDIATION OF CULTURE. Papers were delivered by Jekaterina Velmezova, Ljubov Kisseljova, Ester Bardone, Tanel Lepsoo, Daniele Monticelli, Aare Pily, Mari Peegel, Pille Jänes, Valdur Mikita and Marju Lepajõe.

In November, the journal of the Association *Acta Semiotica Estica* XII appeared, considering Estonian song festival tradition, mediation of history in the documentary film DISCO AND NUCLEAR WAR, the concept of 'uncanny valley' (*õõva org*), poetics of Fred Jüssi's ICEBREAKER (*JÄÄLÕHKUJA*), 'the generation of victors' in Estonian art and Steven Lukes' power theory.

At end 2015 the Association embarked on planning the INTERNATIONAL CONFERENCE SEMIOFEST 2016 in Tallinn. The Association is one of the organisers jointly with Department of Semiotics of the University of Tartu and the company Gambolling Man (*Mängiv Inimene*).

ESTONIAN SOCIETY OF HUMAN GENETICS

Associated with Estonian Academy of Sciences
5.04.2011



Established in 2000

Current membership: 165

Address: Riia 23, 51010 Tartu ESTONIA, estshg@ebc.ee

www.estshg.ee

President: Ants Kurg, Tel: +372 737 5018, akurg@ebc.ee

Secretary: Maarja Kõiv, Tel: +372 522 9126, maarjakoiv@gmail.com

The board of the Estonian Society of Human Genetics (EstSHG) includes: the President – Ants Kurg, as well as the members of the board – Andres Metspalu, Andres Veske, Aavo-Valdur Mikelsaar, Riin Tamm, and Tiia Reimand.

For already the 17th time, the EstSHG organised its ANNUAL CONFERENCE. The conference took place on October 22-23 at Estonian Traditional Music Center in Viljandi; 160 persons participated. The composition of the program and the choice of speakers were based upon the principle that the speakers should not have presented their results for the minimum of two years. At this year's conference, the guest speaker with a captivating talk was Professor Cecilia Lindgren from University of Oxford, UK. The speakers included some of the best researchers from Estonia such as Priit Palta, Maire Peters, Elin Org, Indrek Koppel, Leho Tedersoo, Aleksandr Peet, Karit Reinson, Tõnu Esko, Tõnis Org, Tambet Tõnissoo, Jaanus Suurväli, Lauri Saag, Ljudmilla Timofejeva, Reet Kurg and Arvo Viltrop.

Preparations for the ANNUAL CONFERENCE in 2016 were started, which will take place on October 13-14 at the medical spa hotel Tervis in Pärnu.

EstSHG took part in organisation and conducting of VI BALTIC GENETICS CONGRESS, which was held in Tartu from September 30 to October 3, 2015. In addition, EstSHG participated in organisation of joint ANNUAL CONFERENCE of Institute of Molecular and Cell Biology of the University of Tartu, Estonian Biocentre and Estonian Genome Center of the University of Tartu on December 14-15, 2015.

After negotiations held with the representatives of Estonian Genome Centre of the University of Tartu (EGCUT) it was decided, that the national round of the 2016 INTERNATIONAL DNA DAY students' essay contest will be carried out together. Within this framework, the Estonian school students can submit their essays in the Estonian language and the initial assessment of their work will be carried out in collaboration with researchers from EGCUT. The authors of the best works in the national round will be invited to submit their essays

to the international competition organised by the European Society of Human Genetics. The students will be assisted in translating their essays into English, if necessary.

As the Estonian Society of Human Genetics is a member of pan-European Human Genetics Societies Association, EstSHG representative also participated in the 11TH MEETING OF THE EUROPEAN HUMAN GENETICS SOCIETIES organised within the framework of the European Society of Human Genetics annual conference held in June 2015, Glasgow, Scotland, UK.

ESTONIAN SOCIETY FOR THE STUDY OF RELIGIONS



Associated with the Estonian Academy of Sciences
16.06.2011

Founded 2006

Membership: 63 members

Address: Ülikooli 16, 50090 Tartu ESTONIA

www.eaus.ee

President: Madis Arukask, Tel: +372 737 5227, madis.arukask@ut.ee

Academic Secretary: Piret Koosa, Tel: +372 735 0414, piret.koosa@erm.ee

The Estonian Society for the Study of Religions is bringing together researchers involved in academic religion studies in various fields. The Society is a member of leading umbrella organisations in the area – International Association for the History of Religions and European Association for the Study of Religions. The main form of work of the Society is holding meetings with papers and conferences. In 2015 the Society carried out two topical meetings and the ANNUAL CONFERENCE. The activity of the Society takes place basically at the University of Tartu. In 2015 an event of the Society was held in Tallinn, for the first time. In order to more successfully propagate information about the activities of the Society, the Facebook page for the Society was created.

In 2015 the Society held two symposiums directed at public RELIGION AND NATIONALISM. The first symposium was held on May 6 at Tallinn University. Speaking were Lea Altnurme (THE CONFESSIONAL IDENTITY OF ESTONIANS TODAY), Alar Kilp (RELATION OF ESTONIAN-BASED NATIONALISM TO RELIGION), Taisto Kalevi Raudalainen (“FINNISH BELIEF” – FORMATION OF GROUP IDENTITY AND NATIONALISM IN THE MULTICONFESSIONAL ENVIRONMENT ON THE EXAMPLE OF INGRIAN FINNS) and Indrek Jääts (THE POSSIBILITY OF NATIONAL ORTHODOXY ON THE EXAMPLE OF THE KOMI). The second symposium was held on May 15 at the University of Tartu. Papers were delivered by Amar Annus (COMMON MECHANISMS OF RELIGION AND NATIONALISM), Vladimir Sazonov (RELIGION AND NATIONALISM IN THE MIDDLE-EAST IN THE 20TH-21ST CENTURY: ON THE EXAMPLE OF SYRIA AND IRAQ), Art Leete (GOD SPEAKS TO US IN THE MOTHER TONGUE: PROTESTANTS AND THE KOMI CULTURE) and Tatyana Alybina (THE MARI RELIGION IN THE POST-SOVIET PERIOD).

On May 15 the annual meeting of the Society took place. To the members there was delivered the report of the Board about the events of the last year; the financial report and report on the activities of the previous year were approved.

On June 1 the seminar was held in cooperation with the Department of Theology of the University of Tartu. Speaking were researchers from Asbury Theological Seminary (Kentucky, USA) Bill T. Arnold (ISRAELITE WORSHIP AS ENVISIONED AND PRESCRIBED IN DEUTERONOMY 12) and Jason A. Myers (PAUL, OBEDIENCE, AND EMPIRE: (RE)INVESTIGATING EARLY CHRISTIAN INTERACTION WITH EMPIRE IN LIGHT OF OBEDIENCE LANGUAGE).

On December 4 the ANNUAL CONFERENCE of the Society RELIGION AND NATIONALISM was held, topically complementing the meetings with papers held in 2015. There were eight papers delivered. Speaking were Tarmo Kulmar (RELIGION AND NATIONALISM IN A TOTALITARIAN COUNTRY), Märt Läänemets (*HINDUTVA* AND MODERN INDIAN NATIONALIST IDEOLOGIES), Elo Süld (RESEARCH OF THE ISLAM IN ESTONIA AND BY ESTONIANS), Vladimir Sazonov (RUSSIAN IDEOLOGY AT THE BEGINNING OF THE 21ST CENTURY, THE ROLE OF NATIONALISM AND RELIGION IN RUSSIAN INFORMATION WAR AGAINST THE UKRAINE), Art Leete (THE KHANTY OIL, WORLD PICTURE AND POLITICS), Anti Selart (CRUSADE, CHRISTIANITY AND BAPTISMAL NAME), Riho Saard (POSITION OF LUTHERANISM IN RELIGIOUS-NATIONALIST ESTONIAN PATRIOTISM – FROM JAKOB HURT TO LENNART MERI) and Atko Rimmel (DEVELOPMENT OF THE IDEA OF ESTONIANS AS A NATION WITHOUT RELIGION).

On December 4 the annual meeting of the Society was held, with the Board providing a review of activities of the Society in 2015. Prof. Tarmo Kulmar was elected honorary member of the Society. In connection with the termination of the election period of the Board, President and Auditing Commission election of new board was held. Madis Arukask was reelected President, Jaan Lahe, Piret Koosa, Katre Koppel, Atko Rimmel were elected members of the Board. Tõnno Jonuks and Indrek Peedu were elected members of the Auditing Commission.

THE ESTONIAN ECONOMIC ASSOCIATION

Associated to the Estonian Academy of Sciences
16.06.2011

Founded: 1930

Re-founded: 2002

Members: 121 private individuals and 4 legal persons

Official address: Narva mnt 4, 51009 Tartu, ESTONIA

Postal address: Eesti Pank, Estonia pst 13, 15095 Tallinn, ESTONIA

www.emselts.ee

Chair: Ülo Kaasik (until 29.02.2016), Meelis Kitsing (from 1.03.2016),

Tel: +372 665 1348, meelis.kitsing@ebs.ee

Board members: Martti Randveer (until 29.02.2016),

Kaire Põder (from 1.03.2016), Tel: +372 665 1348, kaire.poder@ebs.ee

Tairi Rõõm (until 29.02.2016), Karmo Kroos (from 1.03.2016),

Tel: +372 665 1349, karmo.kroos@ebs.ee

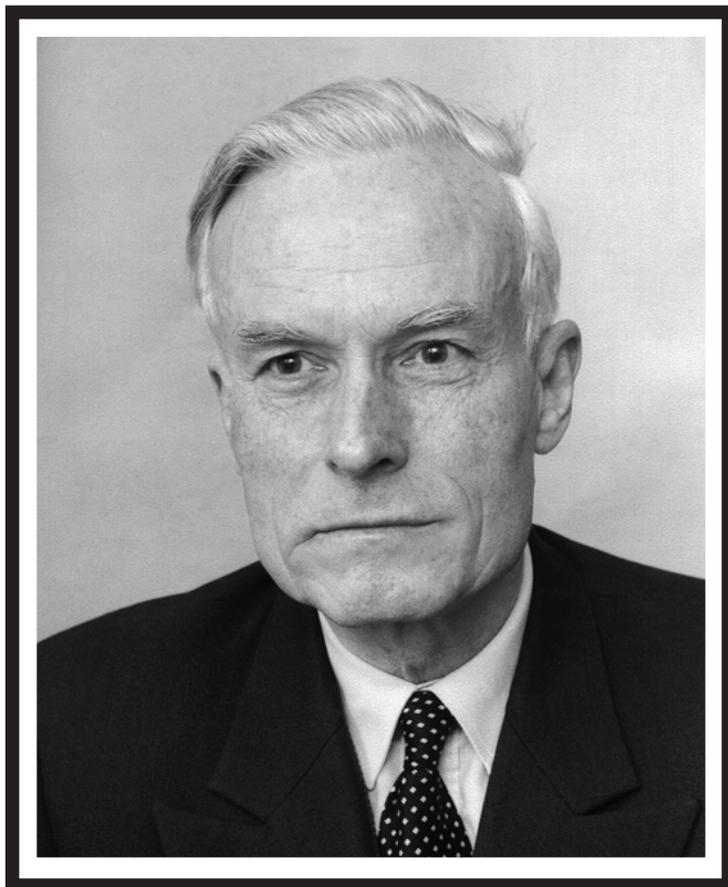
The Estonian Economic Association was re-founded in 2002 and is a non-profit organisation that brings together Estonian economists in order to promote modern economic thinking, encourage discussion on current economic topics, help improve the quality of education in economics, and support cooperation and partnership between institutions working in economic research and teaching. The association organises an annual conference, awards the Professor Vello Vensel prize for research, and distributes information about events at institutions that are members of the association.

In 2015 the association continued its long tradition of annual conferences, the first of which was held in 2003 at Toila under the name of the EMS WINTER CONFERENCE. The conference is now called the annual conference, and has been so since the 2006 conference in Pärnu. The tenth annual conference held on January 31 and February 1 at Narva-Jõesuu discussed key questions for the Estonian economy, the economic outlook for Russia in the light of the Ukrainian conflict and the economic implications of the election pledges of the Estonian political parties before the elections of the Estonian parliament, the *Riigikogu* in March 2015. In addition, the results of the research conducted in the framework of the Research and Innovation Policy Monitoring Programme (TIPS) were presented and the possibilities for the cooperation between different institutions in the area of economic terminology were discussed. There were sessions for academic presentations and the institutional members of the society spoke on their work in the previous year.

The EMS research prize named after Professor Vello Vensel was once again awarded. The prize is for doctoral students who present their research work at the international summer school that is organised as part of the Doctoral School in Economics and Innovation, and whose research work merits particular reward. The EMS Professor Vello Vensel research prize was awarded for the third time in summer 2015 to Magnus Piirits, a doctoral student of the University of Tartu, for his work on THE IMPACT OF INTRODUCTION OF FUNDED PENSION SCHEMES ON INTRAGENERATIONAL INEQUALITY IN ESTONIA: A COHORT BASED ANALYSIS.

Important work with the aim to collect and systematise the history of the association, particularly in the first period of independence of the Republic of Estonia, continued also in 2015.

IN MEMORIAM



Member of the Academy Endel Lippmaa
15.09.1930-30.07.2015

Endel Lippmaa was born on September 15, 1930 in Tartu to the family of Teodor Lippmaa, renowned geobotanist, Member of the Estonian Academy of Sciences. In 1948 he graduated from Tallinn Nõmme Gymnasium and in 1953 from Tallinn University of Technology, specialising in oil shale technology. In 1956 he obtained his Candidate of Sciences (PhD) degree at the same University with a dissertation on products from thermal decomposition of Estonian oil shales. His studies in oil shale chemistry ended at that point and he moved to a radically new area – nuclear magnetic resonance spectroscopy that remained his major area of interest for over half a century. He gained his Doctor of Sciences

degree in Physics and Mathematics from the Institute of Chemical Physics of the USSR Academy of Sciences in 1969 and was awarded Professorship in chemical physics and physical chemistry in 1971.

From 1956 to 1961 Endel Lippmaa was associated with Tallinn University of Technology as Senior Lecturer and Associate Professor. In 1961-1980 he was Head of the Division of Physics at the Institute of Cybernetics. His affiliation with the National Institute of Chemical Physics and Biophysics (NICPB) began in 1980 as its founder and first Director (until 2001) and afterwards he worked as Head of the Laboratory of Chemical Physics (until 2005). At the same time, he headed the Centre of Excellence of Analytical Spectrometry at NICPB (2001-2006). Later, the main scientific interests of Endel Lippmaa were related to the European Organisation for Nuclear Research (CERN).

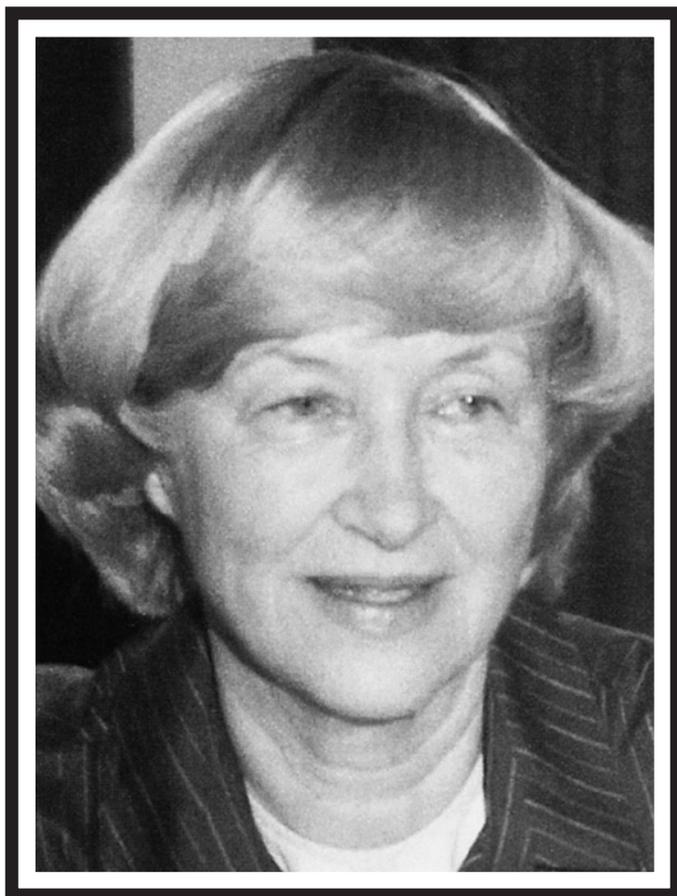
Endel Lippmaa was elected Member of the Estonian Academy of Sciences in 1972. He was a longtime Member of the Board (1975-2014), Academic Secretary of the Division of Physics, Mathematics and Engineering (1977-1982), Head of the Division of Astronomy and Physics (1999-2004) as well as Chairman of the Academy Energy Council (2007-2010).

The activities of Endel Lippmaa were not confined to the academic world – he had great influence in politics as well. In 1989-1991 he was among delegates to the Moscow Congress of People's Deputies. He participated in the activities of the Popular Front and the Congress of Estonia, was a founding member of the Estonian Coalition Party. At difficult times for Estonia, he served in government as Minister without Portfolio with responsibility for Eastern Affairs (1990-1991) and Minister for European Affairs (1995-1996) and belonged to the eighth composition of the Riigikogu (1996-1999).

Endel Lippmaa held honorary doctorates from several universities and was a member of numerous professional associations and organisations, both in Estonia and abroad. He was elected by the Estonian public among a hundred Great Estonians of the 20th century. In 2000 his contributions to science were recognised with the National Science Prize for Outstanding Achievements in Research and Development and in the same year he was awarded the Order of the National Coat of Arms, 2nd class. Likewise, he was honoured with the University of Tartu Award for Significant Contribution to Estonian National Identity (2006) and the Order of Bishop Platon (2013).

Professor Endel Lippmaa was a top expert in various domains of science: chemical physics, physical chemistry, chemical technology, electronics, nuclear and particles physics, energetics, power industry, ecology. He was a man of science in the broadest sense of the term, who implemented the same principles in research and politics.

Endel Lippmaa died on July 30, 2015 in Tallinn.



Foreign Member of the Academy Els Oksaar

1.10.1926-9.12.2015

Els Oksaar was born on October 1, 1926 in Pärnu. She graduated from Pärnu 2nd Girls' Gymnasium in 1944 and pursued her studies at Stockholm University, majoring in Germanistics, Anglistics and Slavistics. She also studied general linguistics, phonetics and communication science at Bonn University. Els Oksaar graduated from Stockholm University in 1950. She gained her Licentiate of Philosophy degree in German philology in 1953 and habilitated in the semantics of the German language in 1958 at the same university.

During the period from 1958 to 1967 Els Oksaar held the positions of Assistant Professor and Professor Extraordinary of German and German literature. At the same time she headed the Department of Sociology and Political Linguistics.

At the same time, she was engaged at the University of Hamburg as Visiting Professor (1965-1966), from 1967 onward concurrently as Professor of General and Comparative Linguistics, which was a newly established position at the university, and as Head of the Research Centre on Multilingualism and Language Contacts, the very first of its kind in Germany. Els Oksaar also worked as Visiting Professor at the Universities of Canberra and Tromsø, as Visiting Scholar at the University of Berlin and delivered a great number of visiting lectures at various universities in the USA, Canada, Australia, Japan, Korea, Singapore, Hong Kong, Mexico and the majority of European states.

The conclusions reached by the internationally renowned linguist are solidly grounded on longtime studies. For example, a 12 year project on bilingualism completed in 1980 offered case studies of Estonians in Sweden, Australia, Canada and the USA as well as Germans in Sweden and Australia.

The spectrum of research topics approached by her was rather evenly distributed between theoretical and practical aspects of linguistics, focusing on two major directions – the Estonian language and the grammar of the German and Swedish languages. Els Oksaar was a pathfinder in several linguistic disciplines: semantics, sociolinguistics, psycholinguistics, pedolinguistics, language contacts, multilingualism and intercultural communication. She published over 350 works, incl. 15 books and monographs and was an editorial board member of several German and international scholarly journals.

In 1988-1994 Professor Oksaar belonged to the composition of the highest council of science experts in Germany, where she was responsible for advising the Government on science and higher education issues. She was involved in the activities of numerous professional associations and boards of international science organisations. Her closer cooperation with Estonian scholarly community began at the end of the 1980s as she was delivering lectures at the University of Tartu. A cross-cultural communication centre was established at the University on her initiative.

In 1998 the Estonian Academy of Sciences elected Els Oksaar its Foreign Member in the area of linguistics. She was likewise a Foreign Member of the Academies of Sciences in Finland and Norway as well as the Royal Society for the Humanities at Lund, Sweden. She held honorary doctorates from the University of Helsinki, Linköping University and University of Tartu. Her scholarly achievements were recognised with several Swedish and German science prizes, among others she was Laureate of the Konrad Duden Prize, the most prestigious international award in the area of German linguistics. In 2001 Els Oksaar was awarded the Order of the White Star, 4th class.

Els Oksaar died on December 9, 2015 in Hamburg.

ESTONIAN CONTACT POINTS FOR
INTERNATIONAL SCIENTIFIC ORGANISATIONS as of 1st March 2016
(whose membership fees in 2015 were covered
by the Estonian Academy of Sciences
from a specific allocation of the Ministry of Education and Research)

Estonian contact organisation	International organisation
Estonian Physical Society (contact Kaido Reivelt, efs@fyysika.ee)	European Physical Society, EPS
Estonian National Geophysical Committee (contact Rein Rõõm, rein.room@ut.ee)	International Union of Geodesy and Geophysics, IUGG
Estonian National Committee for IGU (contact Mihkel Kangur, geograafiaselts@gmail.com)	International Geographical Union, IGU
Estonian National Committee for Geology (contact Dimitri Kaljo, dimitri.kaljo@ttu.ee)	International Union of Geological Sciences, IUGS
Estonian Association of Engineers/ Estonian Systems Engineering Society (contact Sven Nõmm, sven.nomm@ttu.ee)	International Federation of Automatic Control, IFAC
Estonian Committee for Mathematics (contact Mati Abel, mati.abel@ut.ee)	International Mathematical Union, IMU
Estonian Polar Research Committee (contact Rein Vaikmäe, rein.vaikmae@ttu.ee)	European Polar Board, EPB
Estonian National Committee on Astronomy (contact Laurits Leedjärv, laurits.leedjarv@to.ee)	International Astronomical Union, IAU

Estonian National Committee
for Mechanics (contact Andrus
Salupere, salupere@ioc.ee)

Estonian Academy of Sciences
(contact Jüri Engelbrecht,
j.engelbrecht@akadeemia.ee)

Estonian Academy of Sciences
(contact Jaan Undusk,
jaan@utkk.ee)

Estonian Academy of Sciences
(contact Jüri Engelbrecht,
j.engelbrecht@akadeemia.ee)

Estonian Academy of Sciences
(contact Margus Lopp,
margus.lopp@akadeemia.ee)

Estonian Academy of Sciences
(contact Kristi Viiding,
kristi.viiding@ut.ee)

Committee on Phylogenetics and
Systematics, Estonian Academy of
Sciences (contact Urmas Kõljalg,
urmas.koljalg@ut.ee)

Committee on Marine Sciences,
Estonian Academy of Sciences
(contact Tarmo Soomere,
tarmo.soomere@cs.ioc.ee)

ESTQUA (Estonian National
Committee for INQUA) (contact
Volli Kalm, tiit.hang@ut.ee)

Estonian National Committee of
Geomorphologists (contact
Tiit Hang, tiit.hang@ut.ee)

International Union of Theoretical
and Applied Mechanics, IUTAM

International Council for Science,
ICSU

Union Académique Internationale,
UAI

European Federation of Academies of
Sciences and Humanities ALLEA

European Academies' Science
Advisory Council, EASAC

International Commission for
Thesaurus Linguae Latinae (TLL)

Consortium of European Taxonomic
Facilities (CETAF)

European Marine Board

International Union for Quaternary
Research, INQUA

International Association of
Geomorphologists, IAG

Estonian National Committee for
IUPAP (contact Ergo Nõmmiste,
ergo.nommiste@ut.ee)

Department of Philosophy and
Methodology of Science of the
Estonian Association of the History
and Philosophy of Science
(contact Peeter Mürsepp,
peeter.muursepp@ttu.ee)

International Union of Pure and
Applied Physics, IUPAP

International Union of History
and Philosophy of Science and
Technology, Division of Logic,
Methodology and Philosophy of
Science and Technology, IUHPST/
DLMPST

COOPERATION AGREEMENTS WITH PARTNER ORGANISATIONS
(in brackets, the date of signing the currently valid agreement)

1. Austrian Academy of Sciences (12.11.2007)
2. Academy of Sciences of Bashkortostan (23.06.2012)
3. British Academy (4.08.2011)
4. Berlin-Brandenburg Academy of Sciences and Humanities (16.05.2002)
5. Bulgarian Academy of Sciences (2.04.1996)
6. Georgian National Academy of Sciences (19.10/01.11.2012)
7. Royal Flemish Academy of Belgium for Science and the Arts (26.03.2004)
8. Chinese Academy of Sciences (26.05.2000)
9. Spanish Council for Scientific Research (19.06.2001)
10. Israel Academy of Sciences and Humanities (19.07.1995)
11. Italian National Research Council (23.04.2004)
12. Lithuanian Academy of Sciences (12.11.1991)
13. Council for the Lindau Nobel Laureate Meetings; Foundation Lindau Nobelprizewinners Meeting (21.12.2011)
14. Royal Society of London (30.10.1991)
15. Latvian Academy of Sciences (12.11.1991)
16. Macedonian Academy of Sciences and Arts (16.12.1996)
17. Montenegrin Academy of Sciences and Arts (17.10.2005)
18. Polish Academy of Sciences (17.06.1996)
19. French Academy of Sciences (22.03.1994)
20. Royal Swedish Academy of Letters, History and Antiquities (18.01.1995)
21. Royal Swedish Academy of Sciences (17.11.2005)
22. Slovak Academy of Sciences (28.11.1993)
23. Slovenian Academy of Sciences and Arts (28.04.1997)
24. Finnish Academy of Science and Letters (10.03.1992)
25. Swiss Academy of Sciences (18.09.1989)
26. Academy of Sciences of the Republic Tajikistan (4.06.2012)
27. Tajik National University (4.06.2012)
28. Czech Academy of Sciences (10.04.1996)
29. National Academy of Sciences of Ukraine (2.10.2000)
30. Hungarian Academy of Sciences (20.06.1995)
31. National Academy of Science of Belarus (18.02.2002)
32. Russian Academy of Sciences (17.02.1993); additional memorandum on cooperation in earth sciences (30.03.2012)

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