The 30th **B**altic **C**onference on the **H**istory and **P**hilosophy of **S**cience

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The Book in History and Philosophy of Science, Technology and Medicine

University of Oulu, Finland **9.-11.6.2022**

Abstract Booklet

Preliminary program (updated 7.6.2022).

Thursday, 9th of June Lecture Hall: AT115A

09.30 - Registration opens (Please use the Main entrance)
12.00-12.15 Opening session
12.15-13.15 Keynote I
13.15-14.00 Coffee break
14.00-16.00 Session I
16.00-16.30 Coffee break
16.30-18.00 Session II
18.00-19.00 Informal reception

Friday, 10th of June Lecture Hall: AT115A

08.30-10.30 Session III
10.30-11.15 Lunch break
11.15-12.15 Keynote II
12.15-12.30 Coffee break
12.30-14.00 Session IV
14.00-14.15 Coffee break
14.15-16.15 Session V

16.30- BAHPS Assembly meeting

19.00 Conference dinner

Saturday, 11th of June Lecture Hall: IT115

09.30-11.30 Session VI
11.30-12.00 Lunch break
12.00-14.00 Session VII
14.00-14.45 Panel discussion
14.45-15.00 Closing session

Thursday, 9th of June

09.30 - *Registration opens**
Please check also the Philosophical Society of Finland's annual colloquium 2022 plenary lecture at https://www.filosofinenyhdistys.fi/wp-content/uploads/2022/05/Programme2022.pdf

12.00-12.15
Opening session
Chair: Maija Kallinen (University of Oulu)

Paula Rossi (University of Oulu): *Welcoming words*
Ramūnas Kondratas (Lithuanian Association of the History and Philosophy of Science): *Welcoming words by the Baltic Association of the History and Philosophy of Science*

12.15-13.15 Keynote lecture 1:

Ere Nokkala (University of Helsinki): *Books, Pamphlets and the Freedom of the Press: Eighteenth-Century Swedish Authors on the Circulation of Knowledge*
Chair: Maija Kallinen (University of Oulu)

13.15-14.00 Coffee break

14.00-16.00 Session I: Collections and visualisations in History of Science

Chair: Petteri Pietikäinen (University of Oulu)

Mari-Liisa Varila, Jukka Tyrkkö, Carla Suhr (Linnaeus University): *Visualisation of information in medical texts, 1500-1700*

Martins Vesperis and Elvigs Kabucis (Pauls Stradins Medicine History Museum): *Collection of medicinal remedies of* Johann Cruso *in Pauls Stradins Medicine History Museum*

Ingrid Sahk (University of Tartu Museum): *Who does not like beautiful flower pictures? Carl Friedrich von Ledebour, his Icones Plantarum Novarum and the botanical illustrations in the 19th c.*

Jaanika Anderson and Ken Ird (University of Tartu Museum): *Books and folders: knowledge transfer through illustrations*

16.00-16.30 Coffee break

16.30-18.00 Session II: New Aspects on Books Past and Present

Chair: Anu Rae

Fatima Saadatmand (University of Tehran): *Corpus-Based Historical Study: Semantic Networks in the Service of Source Criticism*

Jaana Eigi-Watkin (University of Tartu): *Epistemic injustice in research evaluation: from the inability to evaluate books to the inability to evaluate certain kinds of Open Data*

Alida Zigmunde (Riga Technical University): *The digitalization of books – a preservation and a value for the future*

18.00-19.00 Informal reception

Friday, 10th of June

08.30-10.30 Session III: Starting early: Books and Sciences in Medieval and Early Modern Times
Chair: Ingrid Sahk

Eglė Sakalauskaitė-Juodeikienė (Vilnius University) and Paul Eling (Radboud University): *Hildegard of Bingen (c.1098-1179) on sleep and dreams in her* Causae et curae *and* Physica

Kaarina Rein (University of Tartu Library): *Medical Topographies at the 19th Century University of Tartu*

Tommi Alho (University of Innsbrück): *Transformation of the medical dissertation: a case study on the Academy of Turku (1640-1828)*

Maija Kallinen (University of Oulu): *Testing the Academic Freedom. Andreas Lundius on Cartesian dualism*

10.30-11.15 Lunch break

11.15-12.15
Keynote lecture 2: Birutė Railienė (Wroblewski Library of the Lithuanian Academy of Sciences): *Libraries of Academies of Sciences in the Baltic States: Challenges and Cooperation*
Chair: Maija Kallinen (University of Oulu)

12.15-12.30 Coffee break

12.30-14.00 Session IV: Books and the circulation and transmission of knowledge
Chair: Kalle Kananoja (University of Oulu)

Sara Norja (University of Turku*): Circulating alchemical knowledge in English:* The Mirror of Alchemy *in manuscript and print*

Mujeeb Khan (University of Utah): *Books and the Creation of Tradition: Transposing Knowledge in West and East Asia*

Arvydas Pacevičius (Vilnius University): *Circulation of scientific knowledge between the Baltic universities: the case of Vilnius and Åbo (first half 19th century)*

14.00-14.15 Coffee break

14.15-16.15 Session V: Textbook traditions

Chair: Tommi Alho (University of Innsbrück)
Lea Leppik (University of Tartu): *The first local mathematics books in Tartu and Tallinn*

Eugenija Rudnickaitė (Museum of Geology, Vilnius University): *The first Geology Textbooks at the Old Vilnius University*

Aistis Žalnora (Vilnius University): *Department of Hygiene at Stefan Bathory university and public hygiene education via popular magazines in Vilnius in 1919-1939*

Vaida Buivydiene (Vilnius Gediminas Technical University) and Lina Rutkiene (The Institute of Lithuanian Language): *The role of the Lithuanian coursebooks in formation of the standard Lithuanian language in the beginning of the 20th century*

16.30- BAHPS Assembly meeting

19.00 Conference dinner

Saturday, 11th of June

09.30-11.30 Session VI: Reaching Different Audiences for Science

Chair: Peeter Müürsepp (Tallinn University of Technology)

Kostiantyn K. Vasyliev (University of Odessa) and Yurii K. Vasyliev (University of Sumy): *The book of Riga native J.Ch. Weltzien "The outline of medical improvement, or on funds dependent on the government to preserve the public health" (1795) and its role in the transmission of knowledge, ideas and values*

Violeta Pukelytė and Valentinas Baltrūnas (Institute of Geology and Geography, Nature Research Centre, Lithuania): *The Book that educated the public during the press ban in Lithuania*

Ramūnas Kondratas (Lithuanian Association of the History and Philosophy of Science): *The scientific context of Theodor von Gotthuss' pioneering discoveries*

Ilari Virtanen and Kalle Kananoja (University of Oulu): *Published Health Guides and Popular Medicine in Finland, 1780s - 1950s*

11.30-12.00 Lunch break

12.00-14.00 Session VII: Science books in action

Chair: Ilari Virtanen (University of Oulu)

Peeter Müürsepp (Tallinn University of Technology): *Books in Philosophy of Science – Popper vs Kuhn Revisited*

Anu Rae (University of Tartu): *Do medical handbooks represent the actual practice? – Comparison of psychiatric textbooks to patient records in the case of male hysteria in University of Tartu Psychiatric Hospital at the end of the 19th century*

Julia Dahlberg (University of Oulu): *On the bookstore's shelves: the material history of the reception of Darwinism in Finland and Sweden 1859-1890*

Kaspars Antonovičs (Riga Stradins University): *View of the scientific work of Professor Aleksandrs Bieziņš from various sources*

14.00-14.45 Panel discussion: The past, present and future of the book in History and Philosophy of Science

Chair: Maija Kallinen

Participants: Elise Garritzen (University of Helsinki/The Finnish Society for the History of Science

and Learning), Peeter Müürsepp (Tallinn University of Technology), Jouni-Matti Kuukkanen (University of Oulu / Centre for Philosophical Studies of History)

14.45-15.00 Closing session

Thursday 9th of June

12.15-13.15

Keynote lecture 1: Ere Nokkala (University of Helsinki): *Books, Pamphlets and the Freedom of the Press: Eighteenth-Century Swedish Authors on the Circulation of Knowledge*
Chair: Maija Kallinen (University of Oulu)

14.00-16.00
Session I: Collections and visualisations in History of Science
Chair: Petteri Pietikäinen (University of Oulu)

Mari-Liisa Varila, Jukka Tyrkkö & Carla Suhr (Linnaeus University) : Visualisation of information in medical texts, 1500–1700

This paper examines variation in the use of graphic devices (such as tables and diagrams) across printed medical books written for different audiences ranging from physicians, apothecaries and surgeons to laypeople. We first set out to determine the types and quantities of graphic devices that were used in early modern English printed medical books (e.g. Pantin 2014, Pennuto 2020), and then compare the use of graphic devices between different subcategories of medical texts to see how the target audience and text topic influenced the information design of the books, and what the perceived differences might suggest about contemporary conceptualisations of knowledge (cf. Ong 2004). The study is a part of the ongoing project Early Modern Graphic Literacies, funded by the Academy of Finland at the University of Turku (2021–2025).

The selection of material is based on the linguistic corpus Early Modern English Medical Texts (EMEMT), which comprises key medical texts from 1500 to 1700. The texts in the corpus have been carefully selected to cover different categories of medical texts throughout the 200-year period (Pahta & Taavitsainen 2010, Tyrkkö & Taavitsainen 2010). Using the text selection of the corpus as our starting point thus ensures that our materials are representative of a wide range of printed medical writing aimed at different target audiences, and also allows us to draw on the extensive linguistic, historical and bibliographical scholarship that already exists on the EMEMT corpus (e.g. Taavitsainen & Pahta 2011, Ratia & Suhr 2017)).

Our results will show how book producers designed medical texts for different audiences and shed light on the role of graphic devices in the transmission and circulation of medical knowledge.

Elvigs Kabucis, Mārtiņš Vesperis (Pauls Stradins Medicine History Museum) : ***C*ollection of medicinal remedies of *Johann Cruso* in Pauls Stradiņš Medicine History Museum**

In 2013, the Pauls Stradiņš Medicine History Museum received a book in German by Johann Cruso about medicinal remedies that was published in Latvia in the 18th century: “Johann Cruso Arzneyschatz: oder, Sammlung bewährter und leicht zu bekommender Mittel gegen die meisten Krankheiten des menschlichen Körpers, aus den besten alten und neuen Schriftstellen”. It is the only copy of this book that we know of being stored in Latvian memory institutions - museums, libraries, archives and elsewhere. This book was donated to the museum by Linards Skuja, son of the professor dr. med. Nikolajs Skuja (1913–2012).

Johann Cruso’s collection of medicinal remedies was published in 1773 by Jakob Friedrich Hinz (1743-1787) in Mitau-Hasenpoth (today: Jelgava and Aizpute). Johann Cruso was a pharmacist in London who studied the medicinal properties of herbs and their effects on human health. He collected most of

the material for the collection at the end of the 17th century. The collection was published in 1701 in Latin. It was intended for doctors, pharmacists, wound healers, and other interested parties. In 1771 the book was translated and published in English with many notes and additions and in in 1773 it was translated and published in German. Both translated books were aimed for ordinary people, especially the rural and the poor.

The book contains the 17th and 18th century information and materials on the treatment of various diseases by using materials from medicinal plants. A total of 634 units of plant materials and 511 diseases are mentioned in the collection. Some of the prescriptions or recommendations mentioned by Cruso can also be observed for use in folk medicine in the 19th and 20th century.

This book is a valuable written source of medicinal knowledge and practices from the 18th century practiced in the territory of Latvia.

Ingrid Sahk (University of Tartu Museum) : Who does not like beautiful flower pictures? Carl Friedrich von Ledebour, his Icones Plantarum Novarum and the production of botanical illustrations in the 19th c.

For centuries, botany has been one of the natural sciences that has developed in tight connection with visual arts. The contribution of the artists has been essential for distribution of botanical discoveries. However, not everybody could afford illustrations. The time-consuming technique of printing and colouring made it expensive for scientists, publishers as well for subscribers. Therefore, the 500 floral images of Altai region in Icones Plantarum Novarum published, but not made, in 1827– 1831 by Carl Friedrich von Ledebour, the professor and director of the Botanical Garden in Tartu, deserve our special attention.

Focusing on the process of production and publication of Icones by Ledebour and with the help of similar outstanding illustrated books of the period, we will aim to restore and understand the initial context and status of these publications. As a result of the Ledebour's expedition to Altai region of Russia 1826–1827, the first scientific survey of the local flora (Flora Altaica) was published. The value of the additional 5 volumes of illustrations however seems to be underestimated. The scientific illustrations have not got much attentions in the biography of Ledebour neither in the local art history.

Looking at the hundreds of lithographed and coloured images of Icones, we shall admire their technological mastery and learn the story of the cooperation between the scientist, artists and printers. Such number of quality images was not just a matter of finances but also of contacts, communication and innovation. Preferring then novel technique of lithography and publishing abroad, Ledebour aimed wider dissemination of his botanical discoveries. Icones remains an extraordinary example of the scientific book in the region in the 19th century, in terms of number, quality and objectives of the illustrations.

Images: Unviersity of Tartu Library, www

Jaanika Anderson, Ken Ird (University of Tartu museum) : Books and folders: knowledge transfer through illustrations

For centuries, books and texts have been the main medium for learning. But studying biology and anatomy has long involved intricate and elaborate drawings. Renaissance art has a chapter in the history of art, e.g Maria Sibylla Merian created exquisite botanical illustrations, Andreas Vesalius created engravings of human anatomy.

Visualisation as a didactic and methodological tool has been an integral part of pedagogics for centuries. The 17th-century Czech philosopher, pedagogue and theologian John Amos Comenius is considered to be the first to emphasize in didactics that the learner should have a direct visual apprehension of what was being teached. Opportunities for using visual aids in education became more widely available since the 18th century, when new technics for printing and replication were introduced. All this allowed European universities to establish collections of teaching aids. The University of Tartu, reopened in 1802 is no exception – immediately began establishing collection for almost every discipline.

Out of the vast variety of disciplines, medicine was one of the leading fields of study to use visual aids in teaching of anatomy, histology, embryology and pathology. Besides illustrated books and atlases also special folders or portfolios were published for educational purposes. The given paper is based on the analysis of the collections of the University of Tartu Museum and Library and its aim is to map published visual teaching aids used in the 19th century mainly at the faculty of medicine (but also in others) of the University of Tartu.

This is the first extensive attempt to organize the visualising material and compare it with other similar collections as a piece of educational history in Europe. The prospective aim is to explore circle of publishers, extent of the spread of published materials and using in teaching process.

16.30-18.00
Session II: New Aspects on Books Past and Present

Chair: Anu Rae (University of Tartu)

Fatima Saadatmand (University of Tehran) : Corpus-based Historical Study: Semantic Networks in the Service of Source Criticism (Based on a case study in history of mathematics)

The present research aims to obtain a descriptive model which can be used in historical studies in order to recognize and reveal the delicate relationships between different historical books and follow the conversions to find and confirm the original works, mixed writings, as well as to specify unique ones, duplicated or copied by adapting a measure of similarity to an anonymous text. Semantic networks, the idea which comes from the linguistics, can be utilized to extract certain types of patterns. It leads historical sources into diagrams that depict the connections, gradual alterations, and nuances of technical terms in the case of lexical relationships. Statistical data including frequencies of the technical terms, and the date of the first appearance of them provide diverse clustering accumulation for pre-processing. Applying objective classification causes a better result for attaining sources criticism.

The results of the research rely on a corpus-based study in the history of mathematics as a case-study: a comprehensive arithmetic lexicon built on twenty- six Persian treatises in 'Ilm al-ḥisāb (arithmetic) from the 10th to the 18th Century AD with about 1200 entries and more than 5300 pieces of evidence from the gathered manuscripts. The results of that study were much more than presenting a dictionary

of arithmetical technical terms, however, it's still being in progress. Considering a wide range of arithmetic treatises and extracting extensive evidence, distinct entries along with diverse senses, we achieved significant results regarding the special categories for books by identifying relationship among senses, thus found it suitable as a methodical approach to study historical books and moreover it has the capability of being offered as a method for data processing in the field of digital humanities.

Jaana Eigi-Watkin (University of Tartu) : Epistemic injustice in research evaluation: from the inability to evaluate books to the inability to evaluate certain kinds of Open Data

Lõhkivi et al. (2012) proposed the notion of epistemic injustice in research evaluation in their analysis of the Estonian humanities researchers' experience with research evaluation. In particular, they demonstrated the inadequacy of the evaluation practices for evaluating the humanities' most valued output – the monograph. In this paper, I argue that this notion is also relevant for understanding certain developments in Open Data.

Lõhkivi et al. argue that a just evaluation system recognises researchers' values and aims. For the Estonian humanities researchers, there is a mismatch between what they consider valuable and high-quality research and what is seen as such in the evaluation system. As a result, their credibility suffers on evaluation. This is an instance of epistemic injustice in research evaluation.

I discuss Leonelli's (2017) and Bezuidenhout's (2020) analyses of approaches to evaluating quality of Open Data to argue that increasing epistemic injustice in research evaluation may be one of the consequences of these approaches. Also in these cases, there is a mismatch between the evaluation practices and the aims and values of some groups of researchers. As a result, their credibility suffers just as it suffers for the humanities researchers who value writing books in the evaluation system that values articles in high impact journals.

Alida Zigmunde (Riga Technical University) : The digitalisation of books – a preservation and a value for the future

Digital technologies and digitization are the hallmarks of the 21st century. Although people read a lot, reading habits have changed. In the past we were meant to read text in print, nowadays newspapers, magazines and books printed on paper are less and less read. The 21st century reader is also impatient - he wants everything here and now. Libraries can offer books during their opening hours, but the internet allows them to read 24/7. Knowing this, publishers offer the opportunity to read digitally and it is widely used. As an example, I will mention Riga Technical University (RTU). When in 2000 at the beginning of the study year schedules were drawn up for each faculty and courses for receiving books from the library, now it is not necessary. Surveys of students show that the need for books has fallen sharply. Of course, they are still needed to write bachelor's and master's theses, but students can find many necessary materials on the internet. The RTU publishing house also provides digital reading of all published books. In the 20th century, after the Second World War, everything that was printed was bought. Homes were unimaginable without a larger or smaller library. Modern people do not want mountains of books in their homes.

The digitization of books and the press makes it possible to preserve them – they do not get dirty and shatter when reading digitally. This is how we save important historical evidence. For example, most church books in Latvia have been digitized and were much needed. Family research is popular and many look in church books, but they wear out ... As the only or duplicate copies without digitization, they would be severely worn out.

Friday, 10 June

08.30-10.30
Session III: Starting early: Books and Sciences in Medieval and Early Modern Times

Chair: Ingrid Sahk (University of Tartu Museum)

Eglė Sakalauskaitė-Juodeikienė (Vilnius University) and Paul Eling (Radboud University) : Hildegard of Bingen (c. 1098–1179) on sleep and dreams in her Causae et curae and Physica

Saint Hildegard of Bingen (c. 1098–1179) was a 12th century Benedictine abbess, a visionary, a composer, a poet, a healer, and one of few medieval women who produced treatises on medicine. In her medical writings, Causae et curae and Physica, the abbess described, among other topics, physical functions and mechanisms of sleep, dreams and waking, emphasizing the importance of sleep for the human body. She regarded sleep as both a passive and an active process. Hildegard warned her readers about sleeping too little or too much, evaluated possible causes of insomnia and nightmares, and discussed potential treatments for these sleep disorders. In this presentation, we analyze Hildegard‘s writings in the context of Greco–Roman physiological theories, which were held to the end of the Middle Ages and later. We also discuss questions concerning the abbess’s putative education, the originality of her works, and the significance of her writings in the context of current knowledge on sleep medicine.

Kaarina Rein (University of Tartu Library) : Medical Topographies at the 19th Century University of Tartu

The oldest university in the territory of present-day Estonia, the University of Tartu was founded in 1632 and reopened in 1802 as the Imperial University of Dorpat. Among many outstanding scientists at the Faculty of Medicine active in Tartu in the 19th century, there was Professor of Medicine Johann Friedrich von Erdmann (1778– 1846), who during his previous career had been Professor of Medicine at the University of Wittenberg in Germany and Kazan University in Russia. On the basis of his impressions in Russia he had compiled a monograph in three volumes, the first part titled Medizinische Topographie des Gouvernements und der Stadt Kasan, nebst mehreren darauf Bezug habenden historischen, geographischen, statistischen und ethnographischen Notizen von Dr. Johann Friedrich Erdmann. Beiträge zur Kenntniss des Innern von Russland was printed in 1822 in Tartu. The book was meant for Germans to study the conditions in the heartland of Russia. The author wrote about different peoples living in Russia, including Finno-Ugric nations.

In 1817 Johann Friedrich von Erdmann accepted the post of Professor of Pathology, Semeiotics, Therapy and Clinics at the University of Tartu. During and after Erdmann’s professorship in Tartu (from 1818 to 1823 and from 1828 to 1843) it can be noticed that several medical topographical dissertations were compiled and defended at the University of Tartu. Thus medical topographies about Tartu, Riga, Archangelsk, Tallinn, Greece, Courland and Orenburg can be found there. The impact of Erdmann’s book on the heartland of Russia is obvious in these dissertations.

The present paper is going to analyse the influence of Johann Friedrich von Erdmann’s monograph describing different regions and peoples in the heartland of Russia on doctoral dissertations at the 19th century University of Tartu.

Tommi Alho (University of Innsbrück) : Transformation of the medical dissertation: a case study on the Academy of Turku (1640– 1828)

In early modern Europe, the primary linguistic medium of all educated communication was Latin. Accordingly, Latin played a crucial role in how new scientific ideas were advanced and transmitted. One of the most central literary forms employed to this end was the dissertation. By today's stan- dards, the early modern dissertation appears a somewhat curious genre. Originally, it was a formal – essentially oral – exercise where the student had to demonstrate his mastery of the rules of dialectic and rhetoric rather than to present any new findings. Over the course of the 17th and 18th centuries, what was originally a collection of orally defended theses evolved into a self-sufficient piece of re- search. In recent years, dissertations have attracted growing scholarly attention, ranging from ques- tions of authorship to the scientific networks manifested in their publication. Nevertheless, the transformation of the dissertation genre from a medium of teaching students how to deal with pre- existing knowledge into a tool for creating and communicating new knowledge has received little scholarly attention. To provide a more comprehensive understanding of the transformation of the dissertation genre, this paper sets out to investigate a specific corpus of c. 150 early modern disser- tations, that is, the medical dissertations published at the Academy of Turku between 1640 and 1828. More specifically, this paper argues for the disappearance of the theses format and its replace- ment with an argumentative essay towards the second half of the 18th century. Indicative of the for- mation of a conventionalised scientific habitus, this change seems to be accompanied by a certain standardisation of citation conventions and decreased use of paratexts.

Maija Kallinen, University of Oulu : Testing the Academic Freedom. Andreas Lundius and the Cartesian Dualism

This paper discusses the fates of one controversial academic dissertation at the Academy of Turku in 1690, and sets it in an appropriate context. The thesis was called "On the Senses of the Human Being" and it was thoroughly Cartesian in tone, promoting Cartesian dualism for the first time at the Academy of Turku.

Cartesianism was a very controversial philosophy in many of its contexts during the 17th century. In Sweden Cartesian issues were disputed in the 1660's and especially in the 1680's, as the new philosophy was gaining ever more support within the Faculty of Medicine and even in the more conservative Faculty of Philosophy. This made theologians worried both within both within the Faculty of Theology of the University of Uppsala, and in the leading organs of the Lutheran Church of Sweden.

The question about the freedom to teach Cartesian philosophy expanded from an academic dispute to one covering the important institutions of the State: the Church, the University – and the Royalty. After years of institutional actions resolution was finally made in the 1689 by the King. The resolution allowed freedom of philosophy, "as long as the Bible or the King were not insulted".

The resolution was indeterminate in its formulation. It is therefore my argument, that we should see Andreas Lundius' dissertation as a kind of a lacmus test measuring the limits for the freedom of natural philosophical thought. The University of Turku was known for its reluctance to include Cartesianism to its teaching, and its' scholars had participated actively in the attempts to restrict teaching of Cartesianism at Uppsala. In my paper I discuss this context and the reactions Lundius' dualistic dissertation brought about.

Keynote lecture 2: Birutė Railienė (Wroblewski Library of the Lithuanian Academy of Sciences): ***Libraries of Academies of Sciences in the Baltic States: Challenges and Cooperation***
Chair: Maija Kallinen (University of Oulu)

The paper will present historical overview and main fields of cooperation of three libraries during their Academy of Sciences period:

- Academic Library of the University of Latvia https://www.lu.lv/en/studies/libraries/ul-academic-library/
- Academic Library of Tallinn University https://www.tlulib.ee/en/about-us/about-library/history/
- The Wroblewski Library of the Lithuanian Academy of Sciences http://www.mab.lt/en/home/

Academies of sciences in the Baltic States, during the period after the second World War and before the restoration of independence – strongly supported research activities in history of science, participated in the field of the research on history and philosophy of science:

- Library staff members gave presentations and participated in the organization of conferences;
- On the occasion of the *Baltic Conference on the History of Science* special exhibitions of thematic literature were organized at the library premises;
- The work of the sections of the conference, as well as excursions was organized within library premises;
- Documented history of *Baltic Conference on the History of Science* could be found in the holdings of the libraries of the Academy of Sciences of Baltic States.

12.30-14.00

Session IV: Books and the circulation and transmission of knowledge

Chair: Kalle Kananoja (University of Oulu)

Sara Norja (University of Turku*): Circulating alchemical knowledge in English:* The Mirror of Alchemy *in manuscript and print*

Alchemy has been viewed as a pseudoscience in much 20th-century scholarship. However, current views have pivoted to emphasise alchemy's position as an early science – although a science stemming from a different worldview from our current one (Grund 2013: 427). In addition to practical knowledge transmitted orally and through laboratory work, European alchemy was a scholarly occupation distributed through treatises, recipes, and other texts. Books have thus played a huge part in the transmission and circulation of alchemical knowledge.

My focus is on alchemy in England, and on a particular alchemical work as an example of the circulation of alchemical texts. *The Mirror of Alchemy (MoA)* is a short alchemical treatise, translated from the Latin *Speculum alchemiae*. There are eight extant manuscript copies of *MoA* from the 15th to 17th centuries as well as a printed edition from 1597. My previous research has shown that the witnesses consist of four different translations; I have also edited *MoA* (Norja 2021). I have since accessed a further manuscript copy, and thus use every extant witness in this paper.

How does MoA reflect the transmission of alchemical knowledge in medieval and early modern England? Firstly, *MoA* is a translation from Latin, and thus reflects the majority of English medieval alchemical material. Secondly, the circulation of *MoA* in the 16th and 17th centuries shows that

medieval alchemical material was still of great interest to post-medieval alchemists and readers. The interaction of manuscript and print is also of note. *MoA* was circulated in manuscript in the 15th century, but this did not stop after it was printed in 1597. Both manuscript and print circulation were thus important to *MoA*, and the textual relationships between the witnesses reveal the complexities involved in the transmission of an alchemical work.

Mujeeb Khan (University of Utah): ***Books and the Creation of Tradition: Transposing Knowledge in West and East Asia***

There is no question about the role of books as vehicles of knowledge transmission. Books function as repositories of knowledge but their representation in histories of knowledge is often linear, especially in the lived experiences of their authors and respondents. However, respondents are not always participants in the original lived tradition. In order to understand the nature and significance of books in the creation of new traditions, this paper takes the development of medical literary traditions in the Islamicate and Japanese worlds as case studies. The Abbasid translation movement in the Islamicate world is an important example of how respondents to the resulting corpus of literature were removed from the tradition within which it these Greek, Syriac, Sanskrit, and Persian texts were created and evolved. Similarly, the Sinicization of early Japanese bureaucracy involved the instantaneous appropriation of the Sino- Korean literary tradition. In both cases, medical literary traditions modelled on these translated and/or appropriated foreign texts functioned in a way different from their roles in the cultures within which they were created, both symbolically and functionally. This 'transposition' of foreign knowledge, a concept I have argued elsewhere, denotes a role of books often overlooked in more traditional linear narratives that focus on their original historical role. This paper focuses the Abū Bakr al-Rāzī's (d. ca. 925/932) *Comprehensive Book on Medicine* (Ar. *al-Kitāb al-Ḥāwī fī al-Ṭibb*) and Tanba no Yasuyori (d. 995) *Essential Medical Methods* (Jp. *Ishinpō*), as encyclopedic works that cover the whole of medicine and incorporate quotations from earlier writers. Historically positioning these texts permits an analysis of the newfound roles of foreign texts in their new cultural contexts. Should time permit, the paper will also identify the conceptual repercussions of failing to differentiate between the original role of a text and its function in these new cultures.

Arvydas Pacevičius (Vilnius University): ***Circulation of scientific knowledge between the Baltic universities: the case of Vilnius and Åbo (first half 19th century)***

The traditional circulation of scientific knowledge has been radically affected by geopolitical changes in the end of 18th and beginning of 19th century. Established in 1579 Vilnius University (VU), after incorporation of the former lands of the Grand Duchy of Lithuania into Russia in 1795, became the Imperial University in 1803. After Finland became the Grand Duchy of the Russian Empire in 1809, the Åbo Academy, founded in 1640, was renamed the Åbo Imperial Academy. These institutions cooperated and exchanged scientific information with other universities of the Russian Empire (Dorpat, Kharkov, Kazan, Moscow, St. Petersburg, Warsaw). Historiography discusses the support of VU to the Åbo Academy after the fire of 1827, when 1481 volumes of books were sent to Helsinki in 1829. However, there is a lack of data on circulation of knowledge using not only books, but also other means of communication (journals, dissertations, brochures).

After examining the books of donations to the VU Library, it was found that most of the research papers were sent to Vilnius from Åbo and Dorpat. For example, 39 dissertations and other „research papers" were obtained from the Åbo Academy in 1819, and 27 in 1822. Gustav Renvall's Dictionary of the Finnish Language (1823-1826) was sent to VU in 1824. Alexander University of Helsinki sent research works to VU since 1828. The report also discusses the typology and classification of the Åbo (Helsinki) prints collection stored in the current VU Library according to the 19th century scientific knowledge

and peculiarities of printed matter. As was mentioned, in 1827 the Åbo Academy library was burned down. Therefore, the identification of books sent to Vilnius is important from the point of view of science communication and reconstruction of Baltic dissertation collections.

14.15-16.15

Session V: Textbook traditions

Chair: Tommi Alho (University of Innsbrück)

Lea Leppik (University of Tartu) : ***The first local mathematics books in Tartu and Tallinn***

The wider dissemination and introduction of mathematical sciences in the Baltic provinces took place during the Swedish rule and is related to the activities of Tallinn Gymnasium and University of Tartu professors and the establishment of the first local printing houses (1631 in Tartu and 1633 in Tallinn). The background of the spread of mathematics was, among other things, the teaching of Petrus Ramus (1515-1572), which was widespread in Sweden in the first half of the 17th century. Latin was the langugae of teaching at the academies, but some teachers also published textbooks in German. The first such was the textbook about fortification (1647) by Gebhart Himsel, a teacher at Tallinn Gymnasium. The book gives a good overview of the concepts and tools of geometry, different types of fortification buildings and their use. The work is richly illustrated.

The content of the second important local mathematics textbook in German was broader and also met the needs of merchants. It was published by Professor of the Academia Gustaviana Joachim Schelenius (1611-1673) in 1665. Among other things, he explained the construction and use of Napier bones and proportional compass, the calculation of the volume of special-shaped vessels and the area of more complex plots, and the application of the triangulation method to measure distances and heights.

In addition to the publications, there were also textbooks circulating as manuscripts. For example, in the National Archives we can find a 17th-century handwritten fortification textbook that provided instructions for determining the distance to an inaccessible object, talks about perspective and some projections, all with military needs in mind.

Mathematics quickly became a practice in fortification and cartography, where fantastic creatures disappeared from maps and were replaced by increasingly accurate grids. Geometry was at the forefront of mathematical disciplines, and German-language books for the local market were quite richly illustrated, helping to domesticate mathematics in the Baltic provinces.

Eugenija Rudnickaité (Museum of Geology, Vilnius University): ***The first Geology Textbooks at the Old Vilnius University***

S. B. Jundzill (1761–1847) started working as a professor at the Department of Natural History in October 1798. In 1798–1799 he gave lectures in botany as part of the natural history course. In 1798 he defended his doctoral thesis at the Vilnius University in the field of mineralogy: “Dissertacya mineralogiczno-geograficzna: o krajach gdzie się kruszce znaydują i o wielkości rocznego ich wydobywania. W dzień rozpoczęcia publicznych lekcyi w Szkole Głównej Litewskiej. Wilno, 1798. 14 s.“ [Mineralogical-Geographical Dissertacy: about the Countries where Ores are Found and the Annual

Volume of Their Extraction. On the Day of the Commencement of Public Lessons at the Main School of Lithuania] and was awarded the Doctor of Philosophy scientific degree.

Before that, he had already studied the mineral water of Stakliškės for salt extraction by freezing. This study was published in 1792: Jundziłł B. S. 1792. O zrzodłach słonych i soli Stokliskiey. Wilno. 20 s. [About the Salt Springs of Staklishkės].

During travels within the Great Duchy of Lithuania, S. B. Jundziłł paid more attention to the youngest stratum of the Earth. He described and sketched everything he saw at the outcrops and diggings. Even though S. B. Jundzill did not find any special natural resource, his first geological investigations were very important for later geological studies in Lithuania. That is why the author of this article, along with S. Žeiba (1979), J. Paškevičius (2011) regards S. B. Jundzill as the pioneer of geology in Lithuania.

Romanas Simonavičius (Roman Symonowicz, 1763-1813), head of the Mineralogy department and the founder of mineralogy in Lithuania in 1806 published the first textbook on mineralogy: Symonowicz R. 1806. O stane dzisieyszym mineralogii. Wilno, Nakladiem Drukiem i Zawackiego. 188 s. [Simonavičius R. For the Status of Today's Mineralogy.]

Aistis Žalnora (Vilnius University): ***Department of Hygiene at Stefan Bathory university and public hygiene education via popular magazines in Vilnius in 1919-1939***

The wave of epidemics, caused by WWI destructions, drew society's attention to the significance of preventive medicine. It was clear enough that the treating diseases as a consequence instead of fighting the cause could not be fruitful actions. Moreover, the second wave of industrialization reached Eastern Europe causing additional challenges. During the first years after the war, a lot of European countries set themselves a task to establish specific medical administrative institutions that would ensure the purposeful improvement of public health. One of the crucial components a state strategy was public hygiene education, especially with the accent on women and children.

After the Polish annexation of Vilnius the city and districts fell under the Polish rule. Therefore, the same system which operated in Poland was applied in Vilnius as well. Universities had an advisory role in the Polish health care system as well as helped in applying the health policy. A head of the Deparment of Hygiene at Vilnius Stefan Bathory university professor Kazimierz Karaffa-Korbutt (1878–1935) and his students were involved in educating society on the hygiene issues. The primary data collected in our research shows that the most active actions in this field were taken by dr. Janina Botkiewicz-Rodziewiczowa (1892- ?). She published over 50 articles in local and state press on various hygiene topics. Janina tried to explain the issues in the simplest way possible, so that locals could understood them. However, the articles were informative and constructive as well, and gave purposeful information that could successfully help solving health problems and foreseeing possible threats.

Vaida Buivydiene (Vilnius Gediminas Technical University) and Lina Rutkiene (The Institute of Lithuanian Language): ***The role of the Lithuanian coursebooks in formation of the standard Lithuanian language in the beginning of the 20th century***

The first Lithuanian books – primers – appeared in the 16th century, whereas the first grammars in Lithuanian were written much later – only at the beginning of the 19th century. The ban on the Lithuanian press and teaching in a foreign language that lasted for four decades prevented the emergence of Lithuanian textbooks in the 19th century. As a result of this at the end of the 19th century, there were few textbooks dedicated to the secret Lithuanian school: most of them were written under difficult conditions, rather hastily. The demand for primers and grammars arose since

1905, only after the ban was lifted on the Lithuanian press and the permission to teach the Lithuanian language in schools.

In Lithuania, the period of the first half of the 20th century was changeable and complex, thus the publication of textbooks for Lithuanian elementary schools (primers and grammars) in mother tongue is a vivid reflection of these changes and cultural history. In 1905-1940, the primary books of the Lithuanian language as well as the grammars of elementary schools reveal the circumstances of the formation and development of the Lithuanian standard language, determined by historical, cultural and social factors. The presentation overviews the influence of textbooks on the standard Lithuanian language at the beginning of the 20th century, highlighting the subsystem of linguistic terminology. Textbooks, as part of the educational system, were one of the most effective means of fostering and spreading the standard language, especially during the period of formation of the standard language. Whereas the expression of their language norms clearly illustrates the stages of development of the Lithuanian standard language. Those textbooks had a significant impact on the development of Lithuanian terminology, as they contained the terminology of linguistics. Most of them are still being used nowadays.

Saturday, 11th of June

09.30-11.30

Session VI: Reaching Different Audiences for Science

Chair: Peeter Müürsepp (Tallinn University of Technology)

Kostiantyn K. Vasyliev (University of Odessa) and Yurii K. Vasyliev (University of Sumy): ***The book of Riga native J.Ch. Weltzien "The outline of medical improvement, or on funds dependent on the government to preserve the public health" (1795) and its role in the transmission of knowledge, ideas and values***

227 years ago, the first Russian-language essay on the medical police was published in St. Petersburg. We have given in the title its name, translated into English. The author of this book is Johann Christian Weltzien (1767-1829). Born into a Lutheran German family, he studied medicine at the Universities of Jena, Berlin and Göttingen. For some time he headed the provincial medical board in Yaroslavl. Being the head of health care in the Yaroslavl province, he wrote and published the named work. The main idea of Dr. Weltzien is that one of the functions of the state should be health protection of its citizens, and for this it has great opportunities. It echoes the ideas of his contemporary J.P. Frank (1745- 1821), who expressed them in the nine-volume essay System einer vollständigen medicinischen Polizey (A Complete System of Medical Policy; 1779-1827). J.P. Frank is rightfully considered the founder of the medical police as one of the trends in medical science. When J.Ch. Weltzien was a student at the University of Göttingen, J.P. Frank had not taught at that University for several years. Perhaps it was in Göttingen that J.Ch. Weltzien first learned about Frank's medical police. In the preface of his book, Weltzien saw fit to refer to him. On the example of Dr. Weltzien's work, we see the role of the book in the transfer of knowledge, ideas and values. The idea that the state has mechanisms of influence on public health and should not be removed from solving health problems is relevant to this day.

Violeta Pukelytė and Valentinas Baltrūnas (Institute of Geology and Geography, Nature Research Centre, Lithuania): ***The Book that educated the public during the press ban in Lithuania***

In 1864–1904, the authorities of the Russian Empire banned the printing and distribution of Lithuanian publications in Latin letters. Lithuanians actively opposed it – they established secret schools, and booksellers, at the risk of their lives, secretly transported prohibited literature published abroad. The publishing was concentrated in Lithuania Minor, which at that time belonged to the German Empire. Over 40 years, 2 687 Lithuanian publications have been published here in printing houses, and 712 Lithuanian books were published in the United States of America (USA) (Internet access: https://www.vle.lt).

In 1874 Archibald Geikie (1835–1924), a famous Scottish geologist and professor at the University of Edinburgh, in the series of books „Science Primers“ in Plymouth, published the book “Geology“ that impresses us with its timeless objectivity. It emphasizes that the current surface of the Earth, the diversity of fauna and flora, is a result of a very long evolution and complex processes that we still observe today.

In 1901 this book was translated into Lithuanian by Stasys Matulaitis (1866–1956), a well-known public figure born in the Marijampolė region (Lithuania) that graduated from Moscow (Russia) with a degree in medicine. Only his initials are mentioned in the book entitled “Geoliogija“ (140 pages) – “S. M.“

Thus, 121 years ago the inhabitants of the occupied land were able to get acquainted with the history of nature and critically evaluate the creationist views on the origin of the environment prevalent at that time, reading the book in their mother tongue. And the Lithuanian names of various natural processes, rocks and epochs contributed to the development of Lithuanian scientific geological terminology.

Ramūnas Kondratas (Lithuanian Association of the History and Philosophy of Science): ***The scientific context of Theodor von Gotthuss' pioneering discoveries***

The year 2022 marks the 200th anniversary of the death of the Lithuanian chemist of German descent Theodor Grotthuss (1785-1822), who is known for formulating the first theory of electrolysis and the first law of photochemistry. His theory of electrolysis is now known as the Grotthuss mechanism or proton jumping. His original ideas pertaining to the absorption of light included phosphorescence, fluorescence and photochemical reactions.

How could a young man from Courland, which was then part of the Grand Duchy of Lithuania, and growing up on his mother's estate Gedučiai, in the northern part of Lithuania at the border with Latvia, come up with such brilliant and innovative ideas? The answer lies in his education, travels and the scientific milieu of his day. It is on these aspects of his life that this presentation will focus.

During the latter half of the 18th and the beginning of the 19th centuries, major transformations were taking place in the perception of the natural world. The Newtonian mechanistic world view began to be challenged by a natural philosophy based on vitalism and espoused by such thinkers as Kant, Schelling, Goethe and Hegel. A new chemistry was emerging in France around the works of Lavoisier, Berthollet, Fourcroy, Vauquelin and others. In Italy, Galvani and Volta were making groundbreaking discoveries in electricity. Out of the mélange of these ideas emerged the original insights of Grotthuss.

Ilari Virtanen and Kalle Kananoja (University of Oulu): ***Published Health Guides and Popular Medicine in Finland, 1780s - 1950s***

Publication of popular health guides played an important role in modernising medicine in Finland. The demand for medical books increased side by side with the spread of literacy and slowly pushed traditional beliefs about sickness and health to the margins. Literacy enabled people to seek new medical knowledge by studying from books, newspapers and magazines. A thinly spread hospital network and a low number of physicians left most people and communities to draw on their own resources, but access to health guides enhanced rural people's medical resources. By drawing on newspaper articles, reports by medical doctors and journalists, written reminiscences by lay informants, and court records, we seek to periodise and chart the circulation of health guides among the reading public. Who wrote health guides and what was translated to Finnish, and how these books were received by the wider public? How were reading practices gendered? We argue that, due to the influence of book knowledge, Finnish popular medicine became increasingly a hybridised practice combining herbalism and methods learned from popular health guides and scientific literature. Literacy was a key resource in this transformation and points to the important role of medical knowledge in the modernisation process.

12.00-14.00

Session VII: Science books in action

Chair: Ilari Virtanen (University of Oulu)

Peeter Müürsepp (Tallinn University of Technology): ***Books in Philosophy of Science – Popper vs Kuhn Revisited***

This year, it 60 years from the publication of Thomas Kuhn's „The Structure of Scientific Revolutions" that is still often considered the most influential book in philosophy of science that was ever written. Therefore, it is by no means appropriate not to discuss the role of this book at a forum dedicated to books in the history and philosophy of science. The aim of the current paper is not to re-evaluate any major points made concerning Kuhn's conception. Still, there is a slight exception. Some may see my approach as not making Kuhn a clear relativist that has normally been the case. The main idea of the paper is to compare the contributions of Popper and Kuhn from the historical perspective, focusing on the question why Kuhn was for more or less a one book philosopher and Popper clearly was not. There are different kind of reasons. Most visibly, Kuhn just decided not to write new books about the core of his conception but rather add a Postscriptum to the original version and also decided to keep his concentration at the philosophy and history of exact natural science. Popper, however, although his English version of "The Logic of Scientific Discovery" was an elaboration of the original German version, made "The Open Society and its Enemies" his other flagship becoming a philosopher of his century, not just a philosopher of science. Popper was not a one book philosopher but still a philosopher of books, somewhat exceptionally known as a philosopher of science who also coined the concept of the open society and discussed the poverty of historicism. Thus, books can play a very different role in the life of a philosopher.

Anu Rae (University of Tartu): ***Do medical handbooks represent the actual practice? – Comparison of psychiatric textbooks to patient records in the case of male hysteria in University of Tartu Psychiatric Hospital at the end of the 19th century***

19th century psychiatry is perhaps most (in)famous for the diagnosis of "hysteria" due to dramatic cases described by Parisian alienist Jean-Martin Charcot and his famous student Sigmund Freud. However, in 1880s Charcot started to publish cases where he diagnosed men with hysteria. Considering the etymology of the word "hysteria" ("uterus" in Old Greece) and two millennia of mainstream medical tradition exclusively associating the diagnosis with women, these publications stirred up the psychiatric community.

In University of Tartu (Dorpat/Yuryev) Psychiatric Hospital, opened in 1877, too, were men diagnosed with hysteria. Between 1881-1895, around 100 women were diagnosed with hysteria, while 17 men were diagnosed as such. During this 15-year period, the Hospital had three different leading doctors all of whom diagnosed hysteria in men: Hermann Emminghaus, Emil Kraepelin and Vladimir Chizh. Of course, all of them published textbooks on their subject. Yet, when we compare their descriptions and discussions on hysteria in textbooks with the patient records of male hysterics, then we see remarkable differences. In his textbook, Emminghaus did not mention the possibility of male hysteria at all. Kraepelin, though he says that the cases of male hysteria have been recognized, still sees it as women's disease. Chizh studied under Charcot and thus was likely much influenced by his approach to hysteria, in both female and male cases. Chizh suggests the possibility of male hysteria in his textbook, although most of the chapter on hysteria talks about female cases. Additionally, when we read patient records of these 17 men, there are little to no similarities between them – not in socio-economic status nor in symptomology. Thus, I would argue, should we only read textbooks on psychiatry our picture on male hysteria, and I believe of all end-of-19th-century psychiatry and its practice, would be heavily distorted.

Julia Dahlberg (University of Oulu): ***On the bookstore's shelves: the material history of the reception of Darwinism in Finland and Sweden 1859-1890***

When news about Charles Darwin's book *On the Origin of Species* (1859) reached readers in Finland and Sweden in the early 1860's, bookstores in both countries were eager to offer their customers access to the new and controversial publication. All later works by Darwin also rapidly appeared in the bookstores. However, the original English- language versions, only circulated in limited numbers. Far more numerous were different translations, some sanctioned by the author, but not all. In addition to Darwin's own work, well-stocked bookstores also offered reads a selection of shortened versions and popularized adaptations of Darwin's theory. These works assumedly presented Darwin's ideas to the public, but they sometimes also advocated the evolutionary ideas of the actual author. Thus, they were not always identical with Darwin's original work.

The books and the bookstores are part of the material history of Darwinism. In this paper I study the distribution and circulation of books written by Charles Darwin together with shortened versions and popularized adaptations of Darwin's works. The goal is to discuss how bookstores and publishers contributed to the reception of Darwinism in Finland and Sweden between 1859 and 1890. Arguing that the reception of Darwinism in Finland and Sweden has much in common because Darwin's work primarily reached the reading public through the same German- and Swedish-language publications, I also discuss how geographical location as well as cultural, economic, and political circumstances affected the distribution of books about Darwinism, and therefore, the reception of Darwinism in the two countries.

Kaspars Antonovičs (Riga Stradins University): ***View of the scientific work of Professor Aleksandrs Bieziņš from various sources***

Aleksandrs Bieziņš was one of the few lecturers at the Medical Faculty of the University of Latvia who remained in Latvia after WWII. We comparison study his international scientific cooperation and life in two different political systems in Latvia - in the interwar period and after WWII.

The main source for research was Aleksandrs Bieziņš personal files in the five archives in Latvia: 5 Latvian State Archives, Latvian State Historical Archive, Archive of the University of Latvia, Archive of the Riga Stradiņš University, and the Archive of the Children's Clinical University Hospital. Personal files contain – detailed questionnaires, autobiographies, orders and reports of his scientific business trips, special passports for trips abroad of Latvia, and other documents supportive for research scope. We found information in 2 books- Profesors Aleksandrs Bieziņš un Latvijas bērnu ķirurģija1 and book Zelta Skalpelis Profesora Aleksandra Bieziņa dzīve un darbs2. Information was searched in periodical- Padomju Mediķis.

Aleksandrs Bieziņš has started his medical studies at the University of Tartu (now Estonia) but graduated by obtaining a doctor's degree in the medical faculty of the newly established the University of Latvia. Aleksandrs Bieziņš scientific career was developing in parallel to his medical practice.

Based on his professional profile – children's surgeon, orthopedist, and traumatologist he was offered to visit leading profile institutions in the USSR. But his scientific cooperation with the leading pediatricians of the USSR and after the change in the political system in the USSR in the late 1950-ties (Khrushchev's political thaw) allowed him to be a member of the group of the Soviet physicians who visited the 1st International Polio Conference in Switzerland in 1957 and the 9th International Congress of Pediatrics in Canada in 1959. The following Cold War the nonviolent conflicts interrupted his contacts with Western Europe and were only within socialistic countries like the German Democratic Republic.

Research confirms the hypotheses that different political system has significantly affected the scientific exchange profile.

14.00-14.45

Panel discussion: The past, present and future of the book in History and Philosophy of Science

Chair: Maija Kallinen

Participants: Elise Garritzen (University of Helsinki/The Finnish Society for the History of Science and Learning), Peeter Müürsepp (Tallinn University of Technology), Jouni-Matti Kuukkanen (University of Oulu / Centre for Philosophical Studies of History)