

**INTERNATIONAL CONFERENCE**

**10th International Pharmaceutical Conference „Science and Practice 2019”**

*15 NOVEMBER 2019, Sukileliu av. 13, kAUNAS*



**ABSTRACT BOOK**

**November 15th, 2019**

**Kaunas, Lithuania**

**The 10th International Pharmaceutical Conference „Science and Practice 2019” is organized by Lithuanian University of Health Sciences, Faculty of Pharmacy.**

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Language of abstracts was not corrected.

**WELCOME**

*Dear participants and guests of the conference,*

On behalf of the organizing committee and the Lithuanian University of Health Sciences, it's my great pleasure to welcome you to the **10th International Pharmaceutical Conference „Science and Practice 2019”** in the Lithuanian University of Health Sciences, Faculty of Pharmacyǃ The 10th International Pharmaceutical Conference is dedicated to the 200th Anniversary of the first Pharmacy Association in Lithuania. From today's point of view, the history of Pharmacy helps to explore the broad scope of the pharmaceutical field, it stimulates a professional esprit de corps.

Pharmacists are medicine experts and have deep and long-lasting learning behind their knowledge base. It begins at the University and continues during all life, conducting relevant scientific research and efficient practical training. The 10th International Pharmaceutical Conference will give the opportunity to meet experts of different Pharmacy fields and from different European countries to exchange ideas and experiences and most of all, to develop professionally. The 10th International Pharmaceutical Conference scientific program will foster discussions and hopes to inspire participants to initiate collaborations within and across disciplines for the advancement of Pharmacy field.

I welcome you to the Lithuanian University of Health Sciencesǃ

**On behalf of the organizing and scientific committee,**

**Prof. Ramune Morkuniene**

**Dean of the Faculty of Pharmacy**

**Lithuanian University of Health Sciences**

**DEDICATION**

**Conference dedicated to the 200th anniversary of the first pharmacy association in Lithuania**

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In 1819, Vilnius pharmacists founded the Department of Pharmacy of the Vilnius Medical Society (established in 1805). This community set specific goals: to provide the public with high-quality medications, to prevent the falsification of medical products, and to search for new medicinal substances. The priorities included scientific research and the dissemination of scientific knowledge. The members of this pharmaceutical organization published a periodical journal “Pamietnik Farmaceutyczny Wileński” (“Notes of Vilnius Pharmacy”) during 1820-1822. Practicing pharmacists performed experiments in their laboratories and presented their results to colleagues in reports that were published in the press. The community of pharmacists subscribed to newspapers of European and Tsarist Russian pharmacists’ associations and relevant publications were translated and published in the local press.

After the rebellion of 1830–1831, the Tsarist government closed Vilnius University. The Academy of Medical Surgery was reorganized from the University. It existed for ten years but, in 1842, it was closed as well. This gradually led to the loss of scientific knowledge and diminished social activities. Pharmacists began to limit themselves to pharmaceutical practice and business interests.

**CONTENT**

[PROGRAMME 6](#_Toc24543485)

[PLENARY SECTION 8](#_Toc24543486)

[HISTORY OF PHARMACY SECTION 16](#_Toc24543487)

[PhD STUDENTS SECTION 29](#_Toc24543488)

[STUDENTS SECTION 47](#_Toc24543489)

[SCIENTISTS SECTION 68](#_Toc24543490)

[OTHER SCIENTISTS SECTION 83](#_Toc24543491)

[SPONSORS 120](#_Toc24543492)

# PROGRAMME

**Friday, November 15th, 2019**

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| **8.00–9.00 Registration** |
| **9:00–11.00 Plenary section I**  ***Chairmen: Prof. Ramune Morkuniene, Dr. Ramunas Kondratas*** |
| **9.00–09.10** Opening and Welcome Speeches of University Representatives and Guests. |
| **09.10–09.35** The First Pharmacy Association in Lithuania.  *Ramunas Kondratas, PhD, Vilnius University and Assoc. Prof. Vilma Gudiene, LUHS (Lithuania)* |
| **09.35–10.00** The Botanical Explorer’s Legacy: a Promising Bioprospecting Tool.  *Prof. Axel Helmstädter, Frankfurt University (Germany)* |
| **10.00–10.25** Patient-centered Care Challenges in Geriatrics: Multimorbidity and Polypharmacy.  *Prof. Vita Lesauskaite, The Head of LUHS Geriatrics Clinic (Lithuania)* |
| **10.25-10.50** Electronic decision support to prevent adverse drug reactions – focus on drug interactions.  *Kari Laine, PhD, University of Turku (Finland)* |
| 10.50–11.20 Coffee break |
| **11.20–13.20 Section Activities** |
| History of Pharmacy  *Moderator Ramunas Kondratas, PhD* |
| Scientific Section  *Moderators: Prof. Lina Raudone. Assoc. Prof. Giedre Kasparaviciene* |
| Pharmacy Novelties (Lithuanian language)  *Moderators: Prof. Valdas Jakstas; Prof. Liudas Ivanauskas* |
| International Student‘s Forum  *Moderators: Domas Urniezius; Skirmantas Rastenis* |
| **Plenary section II**  ***Chairmen: Prof. Nijole Savickiene; Prof. Natasa Bogavac-Stanojević*** |
| **11.20–11.45** Pharmaceutical Regulation: Current Situation and Future Steps.  *Andzelika Oraite, Department of Pharmacy, Ministry of Health (Lithuania)* |
| **11.45–12.10** Medical Devices – What Does a Pharmacist Need to Know?  *Jurate Svarcaite, Association of the European Self-Medication Industry, Director General (Belgium)* |
| **12.10–12.35** Clinical Academic Pathway in Pharmacy: XXI Century Challenges.  *Vilius Savickas, PhDc, University of Kent (United Kingdom)* |
| **12. 35–13.00** Economic Evaluation in Health Care.  *Prof. Natssa Bogavac-Stanojević University of Belgrade (Serbia)* |
| **13. 00–13.20** Phytotherapy Approaches in Stress-related Disorders.  *Oana Cioanca,PhD, University of Medicine and Pharmacy "Grigore T Popa" (Romania)* |
| 13.20–14.20 Lunch Break |
| **14.20–16.20 Section Activities II** |
| History of Pharmacy  *Moderator Assoc. Prof. Vilma Gudiene* |
| Scientific section  *Moderators: Prof. Lina Raudone. Assoc. Prof. Giedre Kasparaviciene* |
| **Plenary section III**  Round Table Discussion "The Future of Pharmacist Profession" (Lithuanian language)  *Moderators: Assoc. Prof. Tauras Antanas Mekas, Assoc. Prof. Jurgita Dauskiene* |
| 16.20–16. 40 Coffee Break |
| **16. 40–17.00** Conference Final Remarks  *Prof. Ramune Morkuniene, Dean of Pharmacy Faculty, LUHS* |
| **17.30–18.30** Excursion to The Museum of Historty of Medicine and Pharmacy  (Rotuses sq. 28, Kaunas)  *Organised bus trip from Conference Hall, Sukileliu av. 13, Kaunas* |
| **19.00–23.00** Gala dinner („Senieji Rusiai“ Vilniaus str. 34, Kaunas) |

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| **History of Pharmacy Section, 232 a.**  **Moderator: Ramunas Kondratas** |
| **11:20–11:40** Ramunas Kondratas, President of Lithuanian Society for the History of Pharmacy  Axel Helmstädter, President of the International Society for the History of Pharmacy |
| **11:40–12:00** Egle Sakalauskaite-Juodeikiene (Vilnius University) – Treatment of Nervous System Diseases in the First Half of the 19th Century in the Vilnius University Clinics |
| **12:00–12:20** Birute Railiene (Wroblewski Libraryof the Lithuanian Academy of Sciences) –Disseminating the Scholarly Heritageof Vilnius University Professor Jedrzej Śniadecki (1768–1838) |
| **12:20–12:40** Tatsiana Zablotskaya (National Institute for Higher Education; Minsk, Belarus) –Vilnius University Professor of Pharmacy Johann Friedrich Wolfgang (1775–1859) – a Disciple of the Schuchin Confessors Piarists |
| **12:40–13:00** Zivile Pranckuniene (Lithuanian University of the Health Sciences) –Ethnopharmaceutical Knowledge in the Samogitian Region of Lithuania: Where Old Traditions Overlap with Modern Medicine |
| **13:00–13:20** Michael Pohar (Riga Stradins University) – Beyond the Nobel Prize – Excellence in Medicine in the Baltics 1900–1970 |
| **Lunch break** |
| **Moderator: Vilma Gudiene** |
| **14:20–14:40** Junona Almonaitiene (Lithuanian University of the Health Sciences) –Transdisciplinarity in the History of the Human Sciences: What can the Geographical Dimension Tell about Recent Trends? |
| **14:40–15:00** Ain Raal (University of Tartu, Estonia) – Non-governmental Pharmacy Organizations in Estonia |
| **15:00–15:20** Dusanka Krajnovic (University of Belgrade, Serbia) – A Historical Outline of the Development of the Faculty of Pharmacy in Belgrade |
| **15:20–15:40** Valentina Sosonkina (Association of Pharmacists "Pharmabel"; Minsk, Belarus) –Depictions in contemporary Belarusian art of the 18th-century David Sheiba pharmacy in Minsk |
| **15:40–16:00** Aistis Zalnora (Vilnius University) – Occupational Poisoning Issues in the Works of the Vilnius Stephen Bathory University Doctors and Hygienists |
| **16:00 – 16:20 Faculty of Pharmacy tour** |
| **Coffee break** |
| **16:40 – 17:00 Conference Final Remarks**  **Ramune Morkuniene. Dean of Pharmacy Faculty, LUHS** |
| **17:30 – 18:30** Tour to the Museum of the *History of Lithuanian* *Medicine and Pharmacy*. |
| **19:00 – 23:00** Gala dinner at the restaurant *“Senieji Rusiai”* , Vilniaus St. 34 |

# PLENARY SECTION

**The First Pharmacy Association in Lithuania**

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The first professional pharmacy organizations were organized in Lithuania in the beginning of the 19th century. In 1819, Vilnius pharmacists founded the Pharmacy Section of the Vilnius Medical Society (established in 1805). This section set specific goals: to provide the public with high-quality medications, to prevent the falsification of medical products, and to search for new medicinal substances. Their priorities included scientific research and the dissemination of scientific knowledge. The members of this pharmaceutical organization published a periodical journal *Pamiętnik Farmaceutyczny Wileński* (*Notes of Vilnius Pharmacy*) during 1820–1822.

Pharmacists who belonged to this section would perform tests and experiments in their laboratories, and report their results in their journal. They subscribed to European and Tsarist Russian pharmacy association newspapers and journals. Relevant articles were translated into Polish and re-published in their journal. Due to this communication, the most recent innovations in pharmacy quickly reached Vilnius pharmacists, and they applied them in their laboratories.

*Notes of Vilnius Pharmacy* contained about 47% original publications, the rest were translations from European pharmaceutical journals. The works of the most prominent European pharmacists and chemists, such as Johann Bartholomew Trommsdorff (1770–1837), Louis Nicolas Vauquelin (1763–1829), and Johann Wolfgang Döbereiner (1780–1849) were published in the journal. Scientific news would reach the subscribers of the journal rather quickly.

However, a progressive dynamic development of pharmaceutical science was hindered by unfavorable political and economic factors. Vilnius pharmacists had to stop the publication of their journal due to a lack of funds. After the Polish-Lithuanian Uprising of 1830–1831, the tsarist government closed Vilnius University in 1832. The medical faculty was kept open and transformed into the Vilnius Imperial Medical-Surgical Academy, which after ten years was also closed. The university and academy were the major training grounds for chemists and pharmacists in the very large Vilnius governorate.

Even before the closings, persecutions of university lecturers, students and the Vilnius intelligentsia by tsarist government officials and loyal university officials deterred progressive professors, physicians, and pharmacists from coming to Vilnius.

Having no center of science, the scientific and social activity of pharmacists gradually became more passive. Fewer research reports were prepared and presented at their meetings by members of the Pharmacy Section of the Vilnius Medical Society. Nevertheless, the Vilnius pharmacists cared for the collections in the pharmacology cabinet, discussed ways in which future pharmacists could be trained, organized meetings, and prepared reports.



**Medical devices – what does a pharmacist need to know?**

Jurate Svarcaite

*Director General of AESGP - Association of the European Self-Medication Industry*[*7 avenue de Tervuren, B-1040 Brussels*](https://maps.google.com/?q=7+avenue+de+Tervuren,+B-1040+Brussels&entry=gmail&source=g)

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Medical devices, like medicines and other health technologies, are essential for patient care. With innovation and the rapid advancement of technologies, medical devices are currently one of the fastest growing industries. As well as dealing with medicinal products pharmacists are also involved in the sale and provision of numerous medical devices for use either by themselves or by other healthcare professionals. In addition, with more patients wanting to diagnose and manage their own medical conditions, purchases of medical devices directly from pharmacies are also being undertaken. The types of medical devices pharmacists encounter are diverse, ranging from glucose monitors and walking sticks to substance based medical devices for example simethicone. It is important therefore as part of our role in ensuring the safe and effective use of medical devices that we are also aware of the medical devices regulation and numerous factors we need to consider when recommending, selling or purchasing a medical device.







# HISTORY OF PHARMACY SECTION

**Treatment of Nervous System Diseases in the First Half on the 19th Century in Vilnius University Clinics**

Egle Sakalauskaite – Juodeikiene\*

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**Introduction:** The Faculty of Medicine in Vilnius University (VU) was founded in 1781, and special attention was paid to the promotion of natural sciences. By the early 19th century, VU had become the largest such institution in the Russian Empire, based on student numbers and university departments. The aim of the study is to reveal how nervous system (NS) diseases were treated in the first half of the 19th century in Vilnius clinics.

**Materials and methods:** We analysed 25 doctoral dissertations written in Latin on the subject of NS diseases and defended at VU. A historical–medical analysis and synthesis of primary sources, comparative analysis, analogy, and descriptive methods were used.

**Results:** Bloodletting, the use of purgatives, leeches, cupping therapy, and diet adjustments were frequently employed as treatment options for patients with apoplexy, myelitis, St. Vitus’ dance, epilepsy, encephalitis, tetanus, hydrophobia, and other NS diseases. Opium tincture was used as an analgesic and hypnotic; strict diet and liquids were recommended. Calomel (mercury chloride) was used as a purgative and anti–inflammatory drug. Peruvian bark (source of quinine) was prescribed as an anti–inflammatory drug for treating NS diseases and various fevers. In the cases of traumatic tetany and traumatic arachnoiditis, surgical wound treatment was recommended in order to stop the spreading of the inflammation. The use of *acidum borussicum* (hydrocyanic acid) in patients with hydrophobia represents an example of a desperate, ‘heroic’ medicine while treating a fatal illness. Sleep hygiene and lifestyle recommendations (e.g., maintaining a safe environment for sleep, avoiding long periods of sitting and sleeping during the daytime) were suggested for patients with sleep disorders.

**Conclusions:** Humoralism was the most popular system of medicine in the 19th-century Vilnius, therefore antiphlogistic treatment methods were widely used at the VU clinics.

**References**

1. Malewicz MO. Dissertatio inauguralis medico-practica de frequentioribus cerebri morbis in Instituto Clinico Vilnensi observatis. Vilnae: typis Dioecesanis; 1829.
2. Gutt F. Dissertatio inauguralis medico – practica analecta de morbis columnae vertebralis exhibens. Vilnae: typis Dioecesanis Congr. Missionis; 1823.

**Disseminating a scholarly heritage of Jedrzej Śniadecki (1768–1838),**

**a professor of Vilnius University**

Dr. Birute Railiene\*

*Wroblewski Library of the Lithuanian Academy of Sciences*

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The paper will present a short history of initiatives to preserve and disseminate information about prof. Jedrzej Śniadecki (1678–1838), professor of chemistry and pharmacy at the old Vilnius University:

* Establishing an annual seminar *Lectiones Andreae Sniadecki*. First event was organised in 2012 by the representatives of the Lithuanian Association of History and Philosophy of Science and the Wroblewski Library of the Lithuanian Academy of Sciences; the event was organised in historical places, connected to the heritage of Jedrzej Śniadecki;
* Translating and publishing famous works by Jedrzej Śniadecki;
* Translating the most important work *Theory of Organic Beings* to Lithuanian (translated by Irena Katiliene) English (translated by Krzysztof Mazurek) languages was an attempt to present Jedrzej Śniadecki and his ideas of chemical processes in a living body to contemporary international scientific community, thus initiating the revision of chronology of ideas in life and environmental sciences in Europe;
* Establishing *Annual Fellowship of Jedrzej Śniadecki* (with a generosity of a company *Thermo Fisher Scientific* *Baltic*) to encourage the outstanding students of life sciences at the Vilnius University;
* Joining forces of specialists of life sciences of 19th сt. for a collective monograph on Jedrzej Śniadecki;
* Joining initiatives of neighbour countries (Belarus and Poland) to organise international conferences and studies of Jedrzej Śniadecki scholarly and literature heritage;
* Creating a Jedrzej Śniadecki website with a generosity of Ruta Baranauskiene and Rimvydas Baranauskas: https://andrewsniadecki.org/

**The well-known professor of pharmacy at Vilnius university Jan Frideric Wolfgang – a disciple of the Schuchin confessors piarists**

Tatsiana Zablotskaya\*

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The monastery of the catholic order of piarists in the town of Schuchin in Lida district appeared in 1718. The confessors piarists started educational and enlightenment activities immediately after their arrival. The collegium of piarists in Schuchin was known for its rich library, botanical garden and pharmacy.

The monastery pharmacy was founded with its own expenses by the monk Ludwik Brennet (Ludwik Brennet 1738–1808). It can be noted for sure, that the pharmacy building was built in the third quarter of the 18th century. Some graduates of the piarists collegium became an assistant pharmacist and got a pharmaceutical education.

Jan Frideric Wolfgang (1776–1859) was the son of a doctor of medicine Jan Wolfgang from the Netherlands. The future scientist got his primary education at home, and later continued it at the educational institution of the order of piarists in the town of Schuchin in Lida district.

Wolfgang showed himself as a very diligent and hardworking student during his pharmaceutical practice. Therefore, having passed it, Brennet sent his pupil to the Main Vilnius School for a course in medical and natural sciences.

After having completed his studies on June 9, 1801, Wolfgang got the title of master of pharmacy and returned to Schuchin, where he began to manage the pharmacy of the piarists monastery. This work did not give him the full opportunity to show his skills. A year later, he accepted the offer to take the management of the pharmacy for minors Wagner and returned to Vilna.

He was appointed to the position of pharmacy manager at Vilnius University in 1804. Thus, he had the opportunity to engage not only in the preparation of medicines, but also to test his scientific assumptions. Wolfgang managed to show himself as a man with a deep knowledge of his field and with outstanding organizational skills. He became one of the co-founders of the Vilnius medical society of doctors in December 1805, which began to publish scientific works of the members of this society.

Wolfgang began to teach pharmacy as an auxiliary subject after receiving a doctorate in philosophy in 1807. But after the creation of the department of pharmacy and pharmacology in 1810, Wolfgang took its leadership as a professor. He remained in this position until the closing of the university in 1832.

From youth the instilled industriousness and interest in pharmacy in the Schuchin collegium helped J. F. Wolfgang to become an outstanding scientist in the field of pharmacy and pharmacology.

**Ethnopharmaceutical knowledge in Samogitia region of Lithuania: where old traditions overlap with modern medicine**

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**Introduction:** Modern ethnopharmaceutical studies are still quite unusual in Northern Europe. Data regarding the medicinal use of plants, animals, and fungi and also of spiritual rituals of healing is obtained mostly from ethnographic and folkloric sources in Lithuania [1,2]. We hypothesized that despite positive changes in modern medical assistance during last years, and despite increased accessibility to commercially produced remedies that can be purchased at pharmacies or recommended by qualified physicians, local inhabitants in villages still actively use traditional medicine.

**Materials and methods:** The study was performed in the central part of the Samogitia region located in the western part of the country, Telsiai County. Ethnopharmaceutical information was collected using semi-structured and structured interviews. The study sample was selected using a snowball technique. We tried to obtain as much information as possible by recording local names of plants, their preparation techniques, parts used, modes of administration and application for therapeutic purposes, use of single or mixture of plants for remedy preparation, dose requirement, and usable duration regarding each medicine. Information concerning other traditional remedies used in local folk medical practices was also collected. Materials of animal, mineral, and other origin were considered.

**Results:** The most popular plant preparations for use were tea and extract with alcohol. The most popular material of animal origin was *Bufo bufo*, and the most commonly used fungus was *Phallus impudicus*. The most popular mineral material in Samogitia traditional medicine was sand. Medicinal plants were the most frequently used for treatment of digestive tract disorders and disorders of respiratory tract. The Asteraceae family had the highest number of references. It was stated the most commonly used medicinal plants.

**Conclusions:** As modern medical assistance is quite expensive, self-medication with homemade medicines is still popular here. It shows how important it is to collect and systematize this information as soon as possible, to save this information as traditional Lithuanian heritage and also use it for scientific investigations.

**References**

1. Quave CL, Pardo-de-Santayana M, Pieroni A. Medical ethnobotany in Europe: from field ethnography to a more culturally-sensitive evidencebased CAM? Evid Based Complement Alternat Med. 2012.

2. Seskauskaite D, Gliwa B. The botanical identity and cultural significance of Lithuanian Jovaras: an ethnobotanical riddle. In: Ethnobotany in the new Europe: people, health, and wild plant resources. New York: Oxford: Berghahn Books; 2010; 246–62.

**Beyond the Nobel prize – excellence in medicine in the Baltics 1900-1970**

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An ongoing research project at the Institute of History, Theory and Ethics of Medicine at the Heinrich Heine University Düsseldorf in Germany, led by Prof. Dr. Nils Hansson, analyzes the history of Nobel Prize nominees in medicine from several countries including the United States, Canada, Switzerland, Austria, and Germany. Together with the Latvian professors Prof. Dr. Juris Salaks and Prof. Dr. Ieva Lībiete of Riga Stradins University in Latvia, Institute of the History of Medicine, the doctoral student Michael Pohar is going to analyze excellence in medicine in the Baltic Sea region.  The prime focus is on the Baltic States and Germany during the first half of the 20th century. In that period German-Balt professors were very active at the University of Dorpat (now University of Tartu, Estonia). It includes Nobel Prize nominees, nominees of local medical awards and their winners, and it screens and critically discusses the process of enacting excellence in medicine at that time. Also, it emphasizes trends for nomination in the Baltics and evaluates the prizes for excellence in medicine from the distance of time.

As a part of the research, the history of modern pharmacology is analyzed. Therefore, its history is refurbished and all Nobel Prize Nominations in the category Physiology or Medicine for pharmacologists are evaluated. Likewise, single researchers like professor Oswald Schmiedeberg (1838-1921) from the Baltics, who implemented the “modern pharmacology” as a permanent subject area in medical studies are highlighted. At the same time, the spread of modern pharmacology, as well as its current influence, are emphasized.

**Transdisciplinarity in the history of human sciences: What the geographical dimension can tell about recent trends?**

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Interdisciplinarity seems to be encouraged in many fields, including health care and human sciences, as a methodology and as a practice. On the other hand, many of those working interdisciplinarily complain about lack of understanding in institutions, difficulties in accessing funding, etc. Transdisciplinarity – integration of the natural, social and health sciences in a humanities context, may be even more inspiring, yet, even more “risky”. It seems reasonable to start depicting the situation from various perspectives, relying on credible data. Aiming this, participation of academics in the conferences of the European Society for the History of Human Sciences (ESHHS) during past 5 years was analysed focusing on physical geography (institutions) and intellectual geography (main themes). The purpose of the ESHHS is “to promote international, multidisciplinary cooperation in scholarly activity and research in the history of the human sciences”, and transdisciplinarity is characteristic to its conferences. The research problem of the paper presented here was defined as participation in the conferences of academics from the Baltic States and neighbouring countries, and the themes of their presentations. The materials – books of abstracts of the annual conferences of the Society – were assessed quantitatively and qualitatively. The results showed infrequent and scarce participation of the target subjects, representing Lithuania and psychology in most cases, which invites to further discussions.

**References:**

1. European Society for the History of the Human Sciences // http://www.eshhs.eu/wordpress-3.3.1/wordpress/?page\_id=10.
2. Choi, B. C., Pak, A. W. (2006). Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. Clin Invest Med. Vol. 29(6), pp. 351-364.
3. 34–38 Annual Conferences of the ESHHS. Books of Abstracts (2015–2019). Angers-Barcelona-Bari-Groningen-Budapest.

**Non-governmental pharmacy organisations in Estonia**

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The oldest pharmacy organisation in Estonia was the Society of Pharmacy Students of Dorpat (*Verein Studierender Pharmazeuten zu Dorpat,* 1872), established by German students. The students from Latvia and Poland organised their societies soon after that (*Lettgallia* in 1899 and *Lechicija* in 1908), Estonian students registered their academic organisation (*korp! Fratenitas Liviensis*) in 1918.

The Estonian Pharmacists’ Association (*Eesti Apteekrite Selts*) and Union of Estonian Pharmacists (*Eesti Farmatsöitide Ühisus*) were established after declaration of independence of Republic of Estonia in 1918, the first one was the organisation of owners and second for employees of retail pharmacies, both had their professional journals (Pharmacia (1921-1940) and *Eesti Rohuteadlane* (Estonian Pharmacist, 1926-1940, 1990…), respectively.

The oldest umbrella organisation with the greatest number of members is the Society of Estonian Pharmacists (*Eesti Farmaatsia Selts,* 1950) founded in the Stalinist period and was first called a scientific society.

During the privatisation of pharmacies in the beginning of the 1990s, the Estonian Pharmacists’ Association uniting owners and/or managers of pharmacies was founded (*Eesti Apteekide Liit*, 1993). The relatively younger pharmacists have joined the Chamber of Estonian Pharmacists (*Eesti Proviisorite Koda*, 1997). Pharmacists working in hospital pharmacies are pursuing their aims through the Estonian Society of Hospital Pharmacists (*Eesti Haiglaapteekrite Selts*, 1995). Assistant pharmacists with a special secondary education have formed the Association of Estonian Assistants of Pharmacists (*Eesti Farmatseutide Liit*, 1999). Retired pharmacists are organised into the Senior Pharmacists’ Assembly (*Vanemate Rohuteadlaste Kogu*, 1997). The Tartu University Society of Pharmacy (*Tartu Ülikooli Rohuteaduse Selts*, 1990) joins the students of pharmacy and some of the teaching staff, and the Estonian Academic Society of Pharmacy (*Eesti Akadeemiline Farmaatsia Selts*, 2006) joins mainly the academic staff of the Institute of Pharmacy at the University of Tartu.

There are also six business-related pharmacy organisations in Estonia.

**A historical outline of the development of the faculty of pharmacy in Belgrade**

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Eighty years of historical development of the Faculty of Pharmacy at the University of Belgrade will be presented with the aim to analyze (I) the circumstances that influenced the establishment of the Faculty and its departments and (II) the development of the scientific disciplines and curricula.

At the beginning of the 1830s, pharmaceutical staff in Serbia consisted of graduate pharmacists from outside, such as Serbs from Vojvodina, Croats, Checks, Slovacs and others. Later came domestic stuff educated in Vienna, Budapest, Prague, Gratz, Zagreb. The official proposal regarding the establishment of the Pharmaceutical Department at the Great School in Belgrade gave the Apothecary Society as early as 1896, but this effort was in vain, as preceded the activities in 1904, 1920, 1930 and 1937. The Pharmaceutical Department of the Faculty of Medicine in Belgrade was established in October 24th, 1939. Afterwards, the Pharmaceutical Department outgrew into the Faculty of Pharmacy in October 19th, 1945. In the last eight decades, the key roll in teaching and scientific activities at the Faculty of Pharmacy had the institutes that were later reorganised into departments. Many social changes when the Faculty worked on developing its teaching stuff also produced significant organisational reforms. Also, there were very important reorganisations of regime and study as well as those referred to the professional titles of graduate pharmacy students. Since the Faculty’s foundation until today the master diploma acquired 13440 students, while the academic and health specializations completed more than 2700 candidates. At the Faculty were defended 423 doctoral theses and 295 master of science theses. Scientific and research activities within the projects supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia were strengthened in the last decade of the Faculty development through bilateral and other international projects with foreign institutions and researchers. The Faculty of Pharmacy in Belgrade outshines with a few international projects carried out by itself. These projects are very significant for the development of integrated and postgraduate education of pharmacists in Serbia.

**The image of pharmacy of David Sheiba in Minsk (XVIII c.) in Belarusian art works**

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The 1st pharmacy in Minsk was created in 1748. The opening of the 1st pharmacy was permitted by the Privilege of The Polish-Lithuanian Commonwealth King Sigismund III Augustus (November, 28th, 1748). The king allowed the pharmacist and the member of Magistrate Yan David Sheiba to open it. It catered for clergymen and men of the world, and also people who arrived at the Tribunal in Minsk. The pharmacy was exempt from taxes and the opening of other pharmacies in town was prohibited.

In Belarussian archives there are very few documents about the work of Sheiba’s pharmacy. But the remaining information rouse not only historians’ interest, but also figures from the world of the arts.

Famous Belarussian writer Lyudmila Rublevskaya in her works of fiction described the history of Old pharmacy in Minsk: «Жених панны Дануси» (Minsk, 2012), and «Ночы на плябанскiх млынах» (Minsk, 2013). The protagonist is a pharmacist Joseph, a clever and common herbalist, studied in Prague and Sorbonne, who made miraculous medicines even for the King Sigismund III Augustus. It’s about Joseph’s hidden love for Yugasya, the great beauty of Minsk and the town councilor of Magistrate’s daughter. Unhappy love and excellent skills led to the tragic fate - life imprisonment in a town prison. According the order of Zavish, Minsk Magistrate, who was also in love with Yugasya, he made the medicine for immortality instead of medicine for rejuvenation. The medicine for immortality took away the youth, but gave an eternal life.

A Minsk artist, a member of Belarusian union of designers Lydia Lozovskaya depicted a pharmacist Joseph on one of her paintings. While painting she used Lyudmila Rublevskaya’s books and the information from the Internet about European pharmacies of that time. In the public pharmacy in Minsk (Trinity Suburb) visitors can buy souvenirs with the image of Joseph.

On 29th November, 2018 in Mikhail Savitskiy art gallery (Minsk) the presentation of cultural educational project “The history of pharmacy practice in Minsk”, in commemoration of the opening of the 1st pharmacy of Sheiba was held. The event was attended by pharmacists, historians, writers, poets and artists.

**The occupational poisoning issues in the works of Vilnius Stephen Bathory University doctors and hygienists**

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**Introduction:** The research on the occupational health issues that were carried by Vilnius Stephen Bathory university scientists were one of the most innovative of that time in Vilnius region and Poland. One of the fields of interest of the hygienist Kazimierz Karaffa-Korbutt (1878-1935) as well as a doctor, pathologist and toxicologist Sergiusz Leopold Schilling-Siengalewicz (1886-1951) was occupational poisoning.

**Materials and methods:** Our research is based on a primary and secondary historical sources which are being preserved in Vilnius university library as well as Lithuanian Central State Archives.

**Results:** Our research revealed the definition, causes and mechanisms of the occupational poisoning which were discussed in a scientific discourse of the interwar practitioners and hygienists.

**Conclusions:** The mechanisms and interpretations of the occupational poisoning which have been debated by the Stephen Bathory University’s scientists are relevant as a monument of the interwar toxicology as well as occupational hygiene.

**References**

1. Schilling-Siengalewicz K . Toksykologia Sądowo-Lekarska. Wilno; 1933: 73-83

2. Karaffa-Korbutt K. Zarys Hygieny. Wilno; 1924: 586-591

3. Karaﬀa-Korbutt K. Przemysł a zdrowie. Kraków; 1926: 1-10

4. Karaffa-Korbutt K. Hygiena: Podręcznik dla szkól zawodowych i technicznych kursów dokształsającyh. Wilno; 1932 :150-157

5. LCVA f. 175 ap. 3IXB b. 65

6. LCVA f. 175 ap. 3IXB b. 65 a

**Lаrge inspections of pharmacies in Belgrade and the newly liberated parts of Serbia since the late 19th century**

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**Introduction:** After the liberation and annexation of four counties with a population of 300,000 to the Principality of Serbia, in 1878 a cultural, economic and social upheaval took place in the country. A fundamental transformation of health policy was also under way. This paper is purposed to show the impact of the inspection of the quality of work in pharmacies on health policy development in Serbia at the end of the 19th century.

**Materials and methods:** The paper is based on the historical method and the documentary analysis of primary and secondary data sources.

**Results:** In 1881, a new Law on Health Care and Public Health Protection came into force, due to public pharmacies were under the supreme control of the minister of internal affairs (1,2). Ten years after the annexation of the newly liberated regions of Serbia, in March 1888, the first quality control reviewed six existing pharmacies in Belgrade. The inspection included as follows: the facility where the pharmacy was located, the pharmacy premises, the equipment and medicines whose quality had to comply with the regulations of the current pharmacopoeia. All expired drugs and illicit raw materials were immediately discarded. In 1889, ten pharmacies were inspected in eight cities that included newly liberated parts of Serbia. In 1892, nine pharmacies in five cities were inspected, while in 1894, thirteen pharmacies were inspected in ten cities. The inspection of pharmacies included the control of premises, equipment and apothecary work and services. The largest number of pharmacies fully met the requirements in terms of staff, equipment and space. A small number of irregularities were noted by pharmacists who had to correct them immediately or within a short time limit.

**Conclusions:** The results of the research indicate that the founders of the first pharmacies in all corners of Serbia operated in pharmaceutical care highly professionally in accordance with the legal regulations of that time and endeavoured to contribute to public health enhancement and strengthening medical profession.

**References**

1. Arsic J, Krajnovic D. Inspection visits of pharmacies in the Kingdom of Serbia at the beginning of the 20th century. The 44nd International Congress for the History of Pharmacy. September 2018: Washington, USA; 2019:71.

2. Parojčić D, Stupar D. The Emergence of Pharmacy in Belgrade. Acta

– Congressus Historiae Pharmaciae; 2001.

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**Lithuanian delegation at the third pharmaceutical congress (1899-1900)**

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Due to the development of the pharmaceutical industry, a pharmaceutical class was formed in Russia, which sought to consolidate itself on a professional basis. In 1803, a Chemical and Pharmaceutical Society was founded in Riga, in 1818 the St. Petersburg Pharmaceutical Society and in 1819 Vilnius Society of Pharmacists were founded, and later in Moscow, Kiev, Warsaw, Odessa and other major cities. The St. Petersburg and Moscow Societies initiated a series of pharmaceutical congresses. One of them, the Third All-Russian Pharmaceutical Congress, opened on December 30, 1899 in the assembly hall of Moscow University. The Congress lasted 7 days.

The geography of the “pharmaceutical family” that came together for the convention was very extensive. Transferred to the modern world map, there were delegates from Russia (245), Ukraine (58), Belarus (11), Lithuania (11), Latvia (11), Poland (9), Georgia (7), Estonia (6), etc. An Album of the delegates from the congress, which lists the names of at least 370 participants, is kept in the Russian Medical Museum of the National Research Institute of Public Health named after N.I. Semashko (Moscow).

The program of the congress included the following current issues: scientific reports on pharmacy and pharmacognosy, raising the prestige of the pharmaceutical profession, improving pharmaceutical education, and improving organization of pharmacy in the country.

The peculiarity of this congress was the participation in congress (for the first time) of two warring parties: pharmacy owners and employees. The meetings on class questions about improving the life of employees, reducing working hours, destroying pensions in pharmacies, and expanding the rights of pharmacists were especially lively.

At the congress there was also a report by the Vilna pharmaceutical employees on the theme “The decline of pharmacy: the reasons that caused it, and the measures that could be taken to eliminate it”.

The following pharmacists represented the Lithuanian delegation: I.V. Broyt, T.G. Kinkulkin, E.I. Maruhes, [E.Yu](https://vk.com/away.php?to=http%3A%2F%2FE.Yu&cc_key=). Tromshchinsky (Vilno); M.I. Wolf, G.W. Segal, S.G. Eliashevich; M.A. (Kovno); Gurvich (Shavli) and A.L. Lipshitz (Kurshany of Shavlensky district); BY. Bulavski (Verzhbolovo); Magister of Pharmacy V.V. Grüning (Palangen).

# PhD STUDENTS SECTION



# STUDENTS SECTION





# SCIENTISTS SECTION



# OTHER SCIENTISTS SECTION



**Approaches to the industrial pharmaceutical pollution problems in the world and domestic practice**

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**Introduction:** One of the key areas of research in the field of environmental safety is the analysis of pharmaceutical pollutants. A large number of studies show, that medicinal substances, as well as their metabolites, were found in surface water, groundwater, and drinking water around the world [1-2]. Environmental safety problems cannot be considered within one country, but at the same time, a detailed study of pharmaceutical pollutants in a particular territory is the task of individual countries.

Ukraine is the second-largest country in Europe and the 32nd most populous country in the world. There are more than 100 manufacturers of pharmaceuticals, which produce a large number of unique products for the treatment of various diseases.

The **aim** was to develop approaches to the detailed study of pharmaceutical pollutants in order to further develop appropriate pollution monitoring systems.

**Materials and methods:** Existing approaches to the study of pharmaceutical pollutants and the availability of appropriate pollution monitoring systems have been studied by analyzing literature and online sources.

**Results:** Today in Ukraine there is no proper system for monitoring environmental pollution by pharmaceutical pollutants, and the control system of industrial enterprises does not fully minimize the negative impact on the environment. We proposed a number of approaches according to which a detailed study and prediction of the dangers associated with pharmaceutical pollutants are possible.

So, at the first stage, it is necessary to conduct a detailed analysis of the production and consumption of medicines in Ukraine, especially those that are specific for Ukraine and produced only on its territory. This analysis will allow selecting the most promising objects for a detailed further analysis and suggesting possible risks. It is also necessary to consider not only the final pharmaceutical products, but also the possible harmful substances used in the synthesis and production process.

Based on the data obtained, a further detailed study of the environmental impact of the selected objects is necessary, as well as the development of methods for control the selected pollutants in the environment and forecasting approaches to minimizing and controlling pollution.

**Conclusions:** The described approaches to a detailed study of pharmaceutical pollutants will be used in the development of appropriate pollution monitoring systems.

**References**

1. Randhir P. Deo, Halden U. Rolf. Pharmaceuticals in the Built and Natural Water Enviroment of the United States. Water. 2013;5(3):1346-1365.

2. Daughton C.G. Pharmaceutical Ingredients in Drinking Water: Owerview of Occurance and Significance of Human Exposure. ACS Symposium Series, Vol. 1048; American Chemical Society: Washington, DC, USA. 2010:9-68.



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