

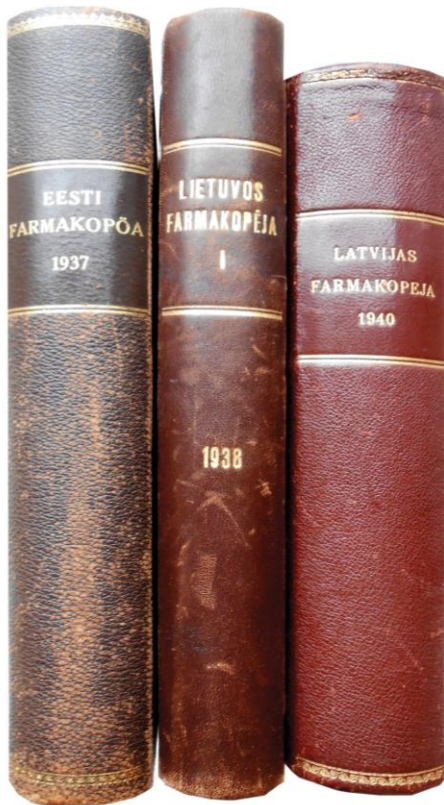
## **Estonian, Latvian and Lithuanian national pharmacopoeias**

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After Estonia, Latvia and Lithuania proclaimed their independence in 1918 and began to create their national health care systems, one of their stated priorities was the formulation and publication of national pharmacopoeias. In order to accomplish this, work groups as well as commissions composed of pharmacists, medical specialists and even linguists (because it was necessary to create a terminology for the national pharmaceutical medical materials or *materia medica*) had to be formed.

In 1925, at the First Baltic Pharmacy Congress in Riga, the Latvian pharmacy delegate D. Blumental (1871–1937) proposed to create a common pharmacopoeia for Estonia, Finland, Latvia and Lithuania, and translate it into the respective national languages. But this idea was not approved and each country chose its own distinctive path.

The Estonian pharmacopoeia was published in 1937, the Lithuanian in 1938, and the Latvian in 1940. After the Soviet occupation and annexation of the three Baltic States following World War II, pharmacists in these countries were obliged to use the Soviet pharmacopoeia. However, unofficially, they also made good use of their national pharmacopoeias.



Estonian, Latvian and Lithuanian pharmacopoeias

### **Pharmacopoeias used in Estonia, Latvia and Lithuania before the formulation of national pharmacopoeias**

From the 18<sup>th</sup> century until 1918, Estonia, Latvia and Lithuania were a part of the Tsarist Russian Empire. Russian and German pharmacopoeias and manuals were used in pharmaceutical practice at that time. The first Russian pharmacopoeia the *Pharmacopoeia Rossica*, was published in 1778, the second in 1871, the third in 1880, the fourth in 1891, the fifth in 1902, and the sixth in 1910. The seventh edition of the *Pharmacopoeia Rossica* appeared in Soviet Russia in 1925, and its supplement in 1933. In 1946, the eighth edition was published.

For several years after the Baltic States regained their independence in 1918, the Russian 6<sup>th</sup> edition (1910), the Russian Military (1913), and the German 6<sup>th</sup> edition (1926) pharmacopoeias were used as main references by pharmacists in the Baltic republics. It is interesting to note that until the new national pharmacopoeias were published in the Baltic republics in the 1930s, the Tsarist Russian 6<sup>th</sup> edition pharmacopoeia (1910), rather than the newer and slightly revised Soviet pharmacopoeia (1925), was officially recognized and used in those countries. The latter was described by Hugo L. Salasoo, the head of the Estonian pharmacopoeia's compilers group,

thusly: *The [Soviet] Russian pharmacopoeia (1925) is out of date. It lacks a whole number of modern preparations and at the same time contains a lot of articles which have long gone out of print. Descriptions of many of the preparations in the [Soviet] Russian Pharmacopoeia do not meet present-day requirements.*

### **Publishing the national pharmacopoeias**

In the early 1930s, a decision was made by the Estonian, Latvian and Lithuanian pharmacy organizations and the respective government agencies regulating their activities to prepare national pharmacopoeias. Responsible persons were appointed to accomplish this task. Later, funding was provided and the plan was to complete the task in a few years, but it took much longer than anticipated.

Before the appearance of national pharmacopoeias, Estonia and Latvia published pharmacy manuals in their native languages. They appeared as follows: in Estonia in 1923 (with later editions in 1924 and 1937) and in Latvia in 1927.

In 1937, Hugo Leopold Salasoo introduced the new edition of the Finnish pharmacopoeia and reviewed the chronology of publication of pharmacopoeias in other countries. He wrote: *The Pharmacopoeia Helvetica V and the Pharmacopoeia Jugoslavia appeared in 1933, the Pharmacopoeia Hungarica IV in 1934, the second edition of the USA pharmacopoeia and the Portuguese pharmacopoeia in 1936, and finally in 1937– the French, Polish and Finnish pharmacopoeias. It should be noted that today there are 27 pharmacopoeias in the world. 21 European states have pharmacopoeias of their own.*

**Estonia** was the first of the three Baltic countries to publish its own national pharmacopoeia – the *Eesti Farmakopöa*. Effective and fruitful work started in 1933 after Hugo Leopold Salasoo (1901-1991) was appointed head of the work group. Salasoo (until 1931 Sogenbits or Sogenpits) was born in 1901 in Tartu County and died in Australia in 1991. He received his undergraduate degree in pharmacy (1927), his master's degree in pharmacy (1928), and his doctoral degree in pharmacy (1932) from the University of Tartu. He was a member of the editorial board and the editor-in-chief of the journal *Eesti Rohuteadlane* (Estonian Pharmacist) from 1928–1933. In 1933, Dr. Salasoo became the founder, general manager, and head of the editorial commission established to formulate the *Pharmacopoeia Estonica I* (1937) as well as the author of many of its monographs.



Editor of the *Estonian Pharmacopoeia* Hugo Leopold Salasoo

The *Pharmacopoeia Estonica* was compiled and published during an extremely short time – from April 1934 to January 1937. In April 1934, six special committees were formed to prepare monographs for the pharmacopoeia. The final manuscript of the pharmacopoeia was presented to the State Health Council (the *Riigi Tervisenõukogu*) in June 1936 and was accepted right away. The work was printed and made ready for distribution in January 1937.

Several sources were used to compile the Estonian pharmacopoeia. They were: the 5<sup>th</sup> edition of the Swiss Pharmacopoeia (1933), the 6<sup>th</sup> edition of the Russian Pharmacopoeia (1910), the 6<sup>th</sup> edition of the German Pharmacopoeia (1926) as well as selected articles from other national pharmacopoeias, such as the Hungarian Pharmacopoeia (1934). Monographs from the 5<sup>th</sup> edition of the Swiss Pharmacopoeia (*Pharmacopoeia Helvetica*) served as a model for the Estonian Pharmacopoeia. The *Pharmacopoeia Helvetica* was the result of 16 years of hard work. The correspondence between Dr. Hugo Salasoo and Prof. Johannes Stamm lets us presume that the Swiss Pharmacopoeia was chosen as a model because it was available and being used at the

Department of Pharmaceutical Chemistry of Tartu University. The most complicated problem was pharmaceutical terminology. Special terms that did not exist in the Estonian language had to be created. The main task for the editors was to reconcile monographs drafted by different committees terminologically, linguistically, stylistically and structurally.

The compilation of **the Latvian Pharmacopoeia** took 17 years. While it was being compiled, the 6<sup>th</sup> edition of the Russian Pharmacopoeia (1910) and the 5<sup>th</sup> edition of the German Pharmacopoeia (1910) were used by practicing pharmacists in Latvia. These pharmacopoeias did not reflect the rapid progress and innovations of 20<sup>th</sup> century pharmacy. Latvian pharmacists intended to compile a pharmacopoeia based on current research.

In 1923, the University of Latvia professor Jānis Maizīte (1883-1950) became the head of the pharmacopoeia formulation working group. He began his pharmacy career as an apprentice at the Vjazma Apothecary in Smolensk. In 1901, he passed the exam for pharmacy assistant at the University of Tartu and, in 1908, received his pharmacy degree there. In 1920, he was appointed Assistant professor of Forensic Chemistry, and a year later Assistant Professor of Pharmaceutical Chemistry at the University of Latvia. He was the Head of the Department of Pharmaceutical Chemistry until his death. His textbook on the introduction to practical pharmacy (1946) to this day is the only book in Latvian on drug technology.



Editor of the *Latvian Pharmacopoeia* Jānis Maizīte

Special committees were set up by J. Maizīte to compile the pharmacognosy, chemical, galenical, and pharmacology monographs. In 1924, he wrote in a Latvian pharmacy journal about the methodology to be used when compiling a pharmacopoeia and quoted the principles proposed by the Swiss pharmacist Alexander Tshirch in his article *Die Pharmakopöe, ein Spiegel ihrer Zeit* (1904): *pharmacopoeia methods should be cheap, correct, and use a small amount of substances and reagents, should not require a lot of time and expensive equipment, and should not be too sensitive*. Prof. J. Maizīte recommended that these principles be followed when formulating the Latvian pharmacopoeia.

Pharmacy graduate students were used to verify and compare the medicinal preparations and analytical methods already in use. Information from German, Russian, British, USA, Belgian, Swiss, Italian, Romanian, Spanish, and Swedish pharmacopoeias was used by these students. Almost all their degree work was supervised by Professor J. Maizīte.

Compilation of **the Lithuanian Pharmacopoeia** also took a long time. Two working groups were set up (one in 1925 and the other in 1929). Each failed to meet the deadline. Thus, in 1934, a management change was made. Steponas Nasvytis (1883-1976), a head officer in the Pharmacy Section of the Department of Health, took over the lead of the working group from the pharmacist, researcher and educator Prof. P. Raudonikis (1869-1950). In 1907, S. Nasvytis graduated from Kharkov University as an assistant pharmacist, and in 1918 received his pharmacy degree from Moscow University. That same year he returned to Lithuania, and together with three other colleagues, established a drug warehouse in Vilnius. He was a founder of Lithuanian professional associations, such as the Society of Lithuanian Pharmacists as well as one of the founders and editors of the journal *Farmacijos žinios* (*Pharmacy News*). In 1944, Nasvytis and his family fled from the Red Army to the West. They first lived in Austria and Germany and then emigrated to the USA in 1948. He was active in Lithuanian-American cultural and political activities and died in Cleveland, Ohio.



Editor of the *Lithuanian Pharmacopoeia* Steponas Nasvytis

In order to hasten the preparation of a pharmacopoeia in Lithuanian, Nasvytis proposed to translate the Soviet pharmacopoeia, whose content he considered appropriate. Thus, the Lithuanian Pharmacopoeia is a translation of the 7<sup>th</sup> supplemented edition of the Soviet Pharmacopoeia (1933). As stated in the introduction to the Russian language pharmacopoeia, the compilers made use of pharmacopoeias from the USA, UK, Germany, Holland, and Japan, among others. They also took into account the international requirements discussed and approved at the congresses devoted to the international standards for pharmacopoeias held in Brussels in 1902 and 1925 (the Brussels Conventions). In the 7<sup>th</sup> edition (1933) of the Soviet pharmacopoeia 116 new preparations were added, while 112 which were in the 6<sup>th</sup> edition (1925) were deleted. Comprehensive articles about quality control, adulterated and counterfeit drugs, and other topics were prepared. It took about five years to translate the Russian text. The Lithuanian Pharmacopoeia was published in 1938. The cost of its preparation and publication was over 15000 Lt. During the course of its preparation, practicing pharmacists actively made suggestions to the editorial group through the press, and did not feign from criticizing their procrastination.

Estonian pharmacists also continued to have heated discussions, even after their pharmacopoeia was published. Soon after its publication, articles appeared in professional journals such as

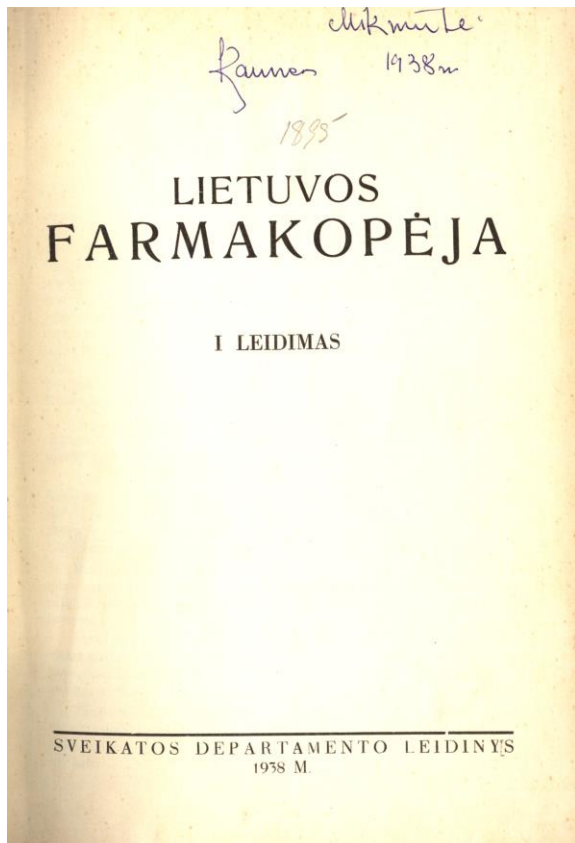
*Pharmacia* and *Eesti Rohuteadlane* (Estonian Pharmacist) pointing out mistakes found in the monographs of the pharmacopoeia, which were later corrected. Specific pharmaceutical problems were discussed in these journals even before the pharmacopoeia was compiled. Since several new analytical methods were described in the pharmacopoeia, H. Salasoo suggested that special courses should be organized for the pharmacists of Tallinn and Tartu in order to better acquaint them with these new methods.

All three pharmacopoeias were divided into three major parts or sections: [I] General information (standards, measures, descriptions of solutions and reagents, and methods of sterilization, including drawings of various kinds of apparatus/equipment and containers); [II] Special information (monographs on therapeutic agents arranged alphabetically by their Latin names and next to the Latin names are synonyms and names of those materials in the native languages, standards for their strength and purity and their formulation); and [III] Appendices/tables (the largest single amount or daily dose of poisonous and strong acting materials, medicines in the A and B lists, the specific gravity of solutions, and so forth).

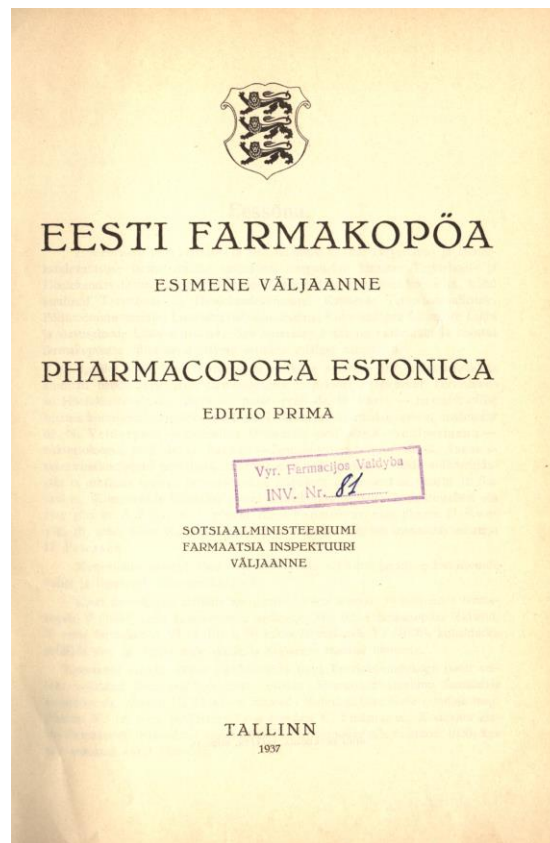
The Estonian Pharmacopoeia is 751 pages long with 26 pages of general information, 805 monographs, and 76 pages of appendices including 16 tables. The Latvian Pharmacopoeia is 964 pages long with 41 pages of general information, 658 monographs, and 155 pages of appendices including 11 tables and 6 drawings. The structure of the Lithuanian Pharmacopoeia is different not only from the Latvian and Estonian ones, but also from the Soviet Pharmacopoeia from which it was translated. The Lithuanian Pharmacopoeia is 528 pages long. There is a short introduction by the publishers followed by the special part with 616 monographs. The general information is combined with 47 pages of supplements.

In all three national pharmacopoeias, the monographs were similar because they were based on older Russian, German and Swiss pharmacopoeias, which adhered to international standards for pharmacopoeias set at the International Congresses of Pharmacy in Brussels in 1902 and 1925. Even the Soviet Pharmacopoeia, which was translated by the Lithuanians, was based on earlier Russian pharmacopoeias and followed the Brussels Conventions. The Lithuanian pharmacopoeia differed the most from the others because very little attention was paid to general information.

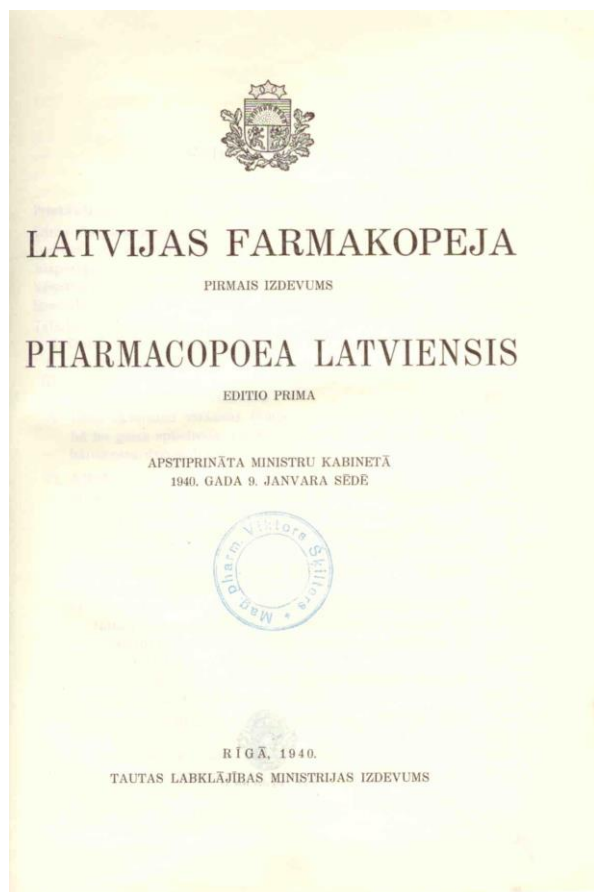




Title page of the *Lithuanian Pharmacopoeia*



Title page of the *Estonian Pharmacopoeia*



Title page of the *Latvian Pharmacopoeia*

The compilers of these national pharmacopoeias faced a number of difficult tasks. One of the most difficult problems was the creation of a new terminology in their native languages. There were also organizational and financial problems. The Estonian and Latvian working groups had to decide which monographs to choose from a number of sources. The Lithuanian compilers chose a different path, namely to translate an already published pharmacopoeia, the 7<sup>th</sup> supplemented edition of the Soviet Pharmacopoeia (1933). Despite all of the difficulties, all three countries managed to compile their own national pharmacopoeias. After the occupation and annexation of the Baltic States by the Soviet Union following World War II, pharmacists in those countries were required to use Soviet pharmacopoeias, but many continued to use their national ones as well.

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