

DOI: <https://dx.doi.org/10.18454/RULB.10.12>Олехнович О.Г.¹, Ольшванг О.Ю.²^{1,2}Кандидат филологических наук, Уральский государственный медицинский университет**ВЛИЯНИЕ ЕВРОПЕЙСКОЙ НАУЧНОЙ МЫСЛИ НА РАЗВИТИЕ РУССКОЙ МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ***Аннотация*

Российско-европейские медицинские связи начали складываться в XVII веке. Деятельность европейских врачей, приглашенных в Россию, повлияла на создание медицинской науки в России. Становление медицины в России сопровождалось появлением новых медицинских документов с привлечением огромного количества интернациональных терминов. В то время в европейской медицине активно использовался греческо-латинский медицинский словарь. Иностранные медицинские специалисты следовали этой традиции в России. Статья посвящена лингвистическому исследованию медицинских документов «Дела Аптекарского приказа» (XVII в.). Именно в них представлена вся медицинская лексика того периода. Анализ терминов показал, что развитие русской медицинской терминологии происходило в результате сложного контакта и взаимодействия между местным словарным материалом и международной терминологией, основанной на греческо-латинских терминах. В «Документах...» зафиксировано огромное количество новых интернациональных терминов греческо-латинского происхождения, которые стали основой для развития русской медицинской терминологии. Российская медицинская терминология распространялась не только количественно, наметилась ее дифференциация. Начали формироваться новые тематические группы, появление которых способствовало активизации русских суффиксальных образований и синтаксических моделей. Активно вводились в оборот новые медицинские документы: рецепты, «сказки» (истории болезней), росписи, которые заполняли иностранные врачи на латинском языке, поскольку это могли сделать только специалисты с высокой квалификацией. Каждый вид документа ограничивался не только содержанием, он имел определенную форму и структуру. Автор документа при формировании текста не должен был выходить за рамки существующих правил и определенных формулировок. Русская медицинская терминология эффективно использовала более развитые западноевропейские стандарты с максимальным привлечением внутренних языковых ресурсов, поэтому система медицинского языка в России сформировалась достаточно быстро.

Ключевые слова: греческо-латинский медицинский словарь, русская медицинская терминология, российско-европейские медицинские связи.

Olekhovich O.G.¹, Olshvang O.Y.²^{1,2}PhD in Philology, Ural State Medical University**THE INFLUENCE OF EUROPEAN SCIENTIFIC THOUGHT ON THE DEVELOPMENT OF RUSSIAN MEDICAL TERMINOLOGY***Abstract*

Russian-European medical relations started to arise in the in the 17th century. The activity of the European doctors invited to Russia influenced the creation of medical science in Russia. The development of medicine in Russia was accompanied by the emergence of new medical documents with the involvement of a large number of international terms. That time the Greek and Latin medical vocabulary was actively used in European medicine. Foreign medical specialists followed this tradition in Russia. The article is devoted to the linguistic research of medical documents, "Documents of the Pharmaceutical Order" (17th century). They contain all the medical vocabulary of that period. The analysis of the terms revealed that the development of the Russian medical terminology arose as a result of complex contact and interaction between local vocabulary and international terminology based on Greek and Latin terms. In the "Proceedings..." there is a large number of new international terms of Greek and Latin origin, which became the basis for the development of Russian medical terminology. Russian medical terminology extended not only quantitatively, its differentiation was also outlined. New thematic groups began to form, the emergence of which enhanced Russian suffixal formations, and syntactic models. New medical documents - prescriptions, "tales" (case history), and inventory were introduced into circulation. They were filled in by foreign doctors in Latin, as only highly qualified specialists could do it. Each type of document was not only limited to content, it had a certain form and structure. When building the text, the author of the document should not go beyond the existing rules and certain formulations. Russian medical terminology effectively used more developed Western European standards, so the medical language system in Russia was formed quite quickly.

Keywords: Latin-Greek medical vocabulary, Russian medical terminology, Russian-European medical relations.

Почта авторов / Author Email: olgaolech@yandex.ru

In Russia the 17th century is an intermediate stage between the ancient Russian system of knowledge and national science. This fully relates to medicine. Despite the fact that folk medicine still occupied the leading position, professional medicine quickly began to develop, which required not only the development of medical terminology, but formation of medical texts on its basis. Certainly, these two interrelated processes (medical language) depended entirely on the development of science itself. Medicine of the 17th century was proto-terminological or pre-terminological. It only sought ways of its scientific field. For the language of medicine it was a period of development, when a large amount of terminological material

accumulated and basic ways for its formalization were found. In the 17th century there were several ways for it – there were plenty of alternatives to one term. It was necessary to choose the most suitable one.

The linguistic situation in Russia influenced on the formation of the language of medicine. On the one hand, the lack of literary language slowed the terminological process. On the other hand, a high degree of normalization of Greek and Latin terminology enabled the development of a new terminological system. It was during this period that “its enrichment with international terms perceived not only through Greek, but also through the scholar international

language of medieval European science, Latin language,” begins [2, P.190].

The language of medieval European medicine, which, unlike Russia, had a scientific basis, played an important role in the formation of the language of medicine. In Europe, medical science had sufficiently high scientific status, in almost every country there were schools, where medical specialists of high qualification were trained. In Russia, there was no national specialist who would be able to provide medical training.

It was during this period that Russian-European medical contacts began to emerge.

The Western European concept, mostly German concept, was adopted in Russia. Germans were easier to get to the Russian service, as since the end of the 16th century the management of Pharmaceutical Order – Chief Medical Institution in Russia – was performed by former inhabitants of the German Principalities. Professionals from Germany (Dr. Johann Kustr, Alchemist Peter Peel), from Holland (Andrew Fanast), from England (Samuel Collins, Roman Biu), from Austria (Yagan Gregory), from Italy and other countries arrived in Russia. But Germans were there for a long time.

The activities of European professionals invited in Russia influenced on the creation of medical science in Russia. In Europe, the medicine used Latin. Foreign medical professionals followed this tradition in Russia. All people who arrived in Russia and had medical knowledge were in charge of Pharmaceutical Order. The latter was in charge of medical care of the Tsar's family, the Tsar's court officials, and foreigners. The first tsar's pharmacy, established in 1581, was the starting point of formation of the pharmaceuticals in Russia. In Russia before Peter the Great the tsar's pharmacy was the only pharmaceutical and medical center.

The Pharmaceutical Order itself invited foreign physicians and pharmacists in the Russian service, and chose them with great care. Unauthorized arrivals were almost always sent back.

The arrivals were required to provide good references and diploma of education, without which they were not allowed to carry out medical and pharmaceutical practice. Sometimes they were hired for another job. For example, the Dutchman Bremberg, despite his claim that he could serve as a physician, a surgeon and a pharmacist, took a position of the medical assistant. And Willie Thomas, despite the fact that he was sent by the King of England, due to lack of the diploma, was not recruited. Even if there were all the necessary documents, doubts about knowledge of foreign professionals could rise. Then the Pharmaceutical Order arranged an exam. The Pharmaceutical Order preserved documents about the exam “on pharmaceutical healing art” for the pharmacist Philip Britier, arrived in Moscow with letters from the King of England. Dr. Artemius Dius, who served previously as a personal physician of the King of England and studied medicine in Oxford, examined him. During the exam, the pharmacist was asked 23 questions on the pharmaceuticals and drugs formulation and 22 questions on healing art.

The Pharmaceutical Order established a special exam for all foreign pharmacists and physicians, regardless of their presented certificates and references. The foreign doctors got large salaries and privileged position in society. The Pharmaceutical Order supervised knowledge of physicians and pharmacists; it regulated the nature and composition of drugs, the set of the required pharmaceutical equipment.

Knowledge of Latin was mandatory for both physicians and pharmacists. L.F. Zmeev, without providing references, indicates that in the 16th-17th centuries in Russia there were examples where visiting “doctors” who did not know Latin, were not recognized and were sent back [4, P. 29]. Knowledge of Latin of the doctor coming from Europe was confirmed with a special diploma. Richter provides a translation of an extract from the patent, composed in Latin, which suggests about language training of the physician Arthur (Artemius) Dius who was “taught German, French, Ugric, English, Polish language” [7, P. 27]. Russian doctors in the 17th century could only work as nurses. One attempt to train national pharmacists was described by N.A. Soboleva. In 1678, 4 students of the Pharmaceutical Order (1 foreigner and 3 Russian) were sent to the German settlement to the teacher of Lutheran School Y. Pontanus to learn Latin and German [5, P. 35].

The great demand for drugs by the time of the reign of Aleksey Mikhailovich necessitated their free and open sale to the public. Later in 1672 a “new” tsar's Gostinyi dvor pharmacy was opened in Moscow with free sale of medicines to the public. This institution was to supply the people of all ranks and classes with drugs. The “Inspector-supervisor” Johann Guttmensh was appointed to manage the pharmacy, and another German – Christian Jaeger, Guttmensh's friend – became a consultant. All pharmacists and pharmacy distillers had to be the Germans. The most famous of them were three: Eichler, Gantsland, Gutbir. Vinnius was the Inspector-manager in two tsar's pharmacies. During the reign of Aleksey Mikhailovich, Laurentius Alferovich Blumentrost contributed much to the development of medicine in Russia. He was the personal doctor of the tsar and arrived with the recommendations from the Dresden Elector. His children – Johann Gottlieb Theodore and Robert Lawrence – also actively worked in the medical field. Later, in the early 18th century, one was the personal physician of Peter I, the other was a talented organizer of Science and the first president of the Russian Academy of Sciences.

Medical language in its entirety was presented in the “Documents of the Pharmaceutical Order” (DPO). Linguistic analysis of the documents showed that the development of Russian medical terminology was based on the international language of Latin and Greek origin. During this period a large number of new terms were assimilated, which became the basis for the development of Russian medical terminology.

Russian medical terminology expands, not only in amount, but its differentiation is also observed. On the basis of more advanced European system of medical language, new thematic groups are formed. Terminology models are effectively used. All this contributed to the activation of Russian word formation and syntactic systems.

Before the 17th century, clinical terminology was limited to popular names of diseases and names of symptoms of the diseases, during the 17th century there was its expansion and differentiation; new scientific disciplines and professionals, medical instruments appeared and naturally replenished medical terminology mainly with the words of Latin and Greek origin. Here are some terms-neologisms: medicine, anatomy, Alchemist, pharmacist, doctor, distiller, ophthalmologist, tool, lancet, screw. The pharmaceutical terms were actively borrowed: in addition to the names of plants, the generic terms – syrup, pill, potion, elixir, prescription, alcohol – appeared.

The main sources of borrowings were “Vertograds”. It is a medical encyclopedia with a variety of information on

medicine, biology, pharmacology, mineralogy. Among medical manuscripts, doctor books and herbal books were mentioned. They could be translated into Russian language from Latin, Polish, German, Greek, but Latin terminology was maintained anyway. In Russia, originally it was just transcribed in Russian, which allowed to get acquainted with Latin vocalization of the terms without regular “Latin” education.

The first medical manuscript, translated in 1588 from Polish into Russian language, was a so-called doctor book (“vračebnik”). The name of each herb was given first in Latin, then in Russian, it was indicated where and how it grows, its properties, method of preparation and use [5, P. 49]. At the end of the manuscript about one hundred of Latin terms in Russian transcription with translation into Russian are provided: “асма ‘asthma’ – gasp, аполексия ‘apoplexy’ – quick death, артрит ‘arthritis’ – sick joints, калкулос ‘calculus’ – stone, епатыкус ‘hepatica’ – liver disease, эпилепсия ‘epilepsy’ – a great sickness, hemorrhoid – fibers in the anus, латаргия ‘lethargy’ – forgetfulness, подагра ‘gout’ – body pain” [5, P. 51].

As B.A. Starostin writes about this, “the descriptions of herbs and disease entities became more and more detailed and visual in herbal books and doctor books. Gradually Latin nomenclature begins to penetrate in herbal books” [8, P.135].

The library of the Pharmaceutical Order was constantly updated with new books; some experts from Europe brought a huge amount of literature. It is enough to say that in Vinius Andrew’s personal collection (he was the translator of the Ambassadors Order since 1664); there were books and dictionaries for different sciences including medicine in Dutch (70%), German (15%) and French (5%) languages, several editions in English and Greek.

In the 17th century in Russia, the doctrine by A. Vesalius became famous. His essay “Epitome” which is a brief extract from the author’s works “On the structure of the human body” was translated in 1657-1658 by the prominent Russian educator Epiphany Slavinetzky. He graduated from the Cracow University and taught at the medical school, which was opened at the Pharmaceutical Order in Moscow. E. Slavinetzky was the author of translations of many works by Byzantine and West European authors, including “Cosmographia” by I. Bleu (1670), which contained a lot of medical information, and later he became the author of “Complete Slavic-Greek-Latin lexicon”.

In 1602, the catalogue of potions appeared in Moscow that was brought from England by the pharmacist Frensham Jacob. In this manuscript, in contrast to the previous one, Latin terms are provided next to the Russian terms or Latin terms transcribed with Russian letters (we quote them in short): *Корень еринги в сахаре* ‘Confectio eryngae’, *Слива белая в сахаре* ‘Confectio prunorum’, *Масло гвоздичное* ‘oleum Caryophyllorum’, *витри оли* ‘Oleum vitrioli’, *Масло миндальное сладкое* ‘oleum Amygdalarum’, *Водка розолис* ‘Aqua vitae’, *Спиритус вини* ‘Spiritus vini’ [7, P. 432].

Orientation into Latin was even in routine registration in journals of the Pharmaceutical Order “*gray grass, which make the stomach cold, are called in Latin: Baraga grass, Pulterlaka grass, Ponternela grass*” [3, P. 45].

Of course, in Russia of the 17th century, rather limited number of people knew “medical” Latin and Latin language, many of whom were foreigners. However, the systematic translations of “doctor books” as well as the formulating practice, linguistic aspect of which was anyway known to the government, and to the patients, created gradually but

steadily in the public mind the desired perception of Latin, which later was related to the information explosion of Peter’s reforms.

Arthur Dius, the court physician of Tsar Mikhail Fedorovich, wrote in 1629 a treatise “Fasciculus Chemicus”, where he set out the whole technology of pharmaceuticals, and although this book was published in Basel (1629) and in Paris (1631), but the fact that this work was written in Russia in Latin was one of the first indirect precedents forming public opinion in favor of the latinization of Russian science.

The Documents of the Pharmaceutical Order contain decrees on foreign doctors. Thus, in 1676 the ophthalmologist Johann (Yagan) Tirih Shartling arrived from Hamburg, it is known that in Moscow he healed the daughter of Prince Yakov Nikitin Odoevsky – “who could not see and now can see”. Among the doctors there were many foreigners who got a medical degree at universities in Europe (before the 18th century it was impossible to do it in Russia) and were obliged to “teach Russian students with all diligence to everything they could”. Among the healers there were more Russian doctors who could be trained in the medical (“healing”) school which was opened in Moscow at the Pharmaceutical order in 1654. The creation of school was associated with the need for regimental doctors (it was the war with Poland), and the need to fight against epidemics. The textbooks in school were herbal books, doctor books and numerous “doctor tales” – case history.

In the second half of the 17th century the Pharmaceutical order began to play a more prominent role in civilian medicine. By this time, there were necessary conditions for the opening of the first public pharmacy in Moscow with free sale (creating significant stocks of drugs, availability of skilled professionals). This pharmacy was named “New Pharmacy”.

The Pharmaceutical order developed the nomenclature of drugs of “New pharmacy” and “Order book” is the first chemist fee.

In March 1672 a decree of Tsar Aleksey Mikhailovich was issued about the opening of the pharmacy with free sale of drugs in the new premises of the Gostinyi dvor. In August of the same year the construction of the pharmacy in the busy part of Moscow on Ilyinka street was basically completed. A foreign pharmacist Yagan Gutmensch was appointed a manager. He was in charge of supplying troops with medicines (previously the tsar’s pharmacy was engaged in it).

Vasily Shilov, the Pharmaceutical order guard’s son, was taken there in 1670 as a disciple. Together with the pharmacist Roman Biniyan he was sent to England to procure pharmaceutical materials. In 1673 he was transferred to New pharmacy. Later he managed apothecary gardens. In the pharmacy V. Shilov was trusted to be in charge of “pharmaceutical and alchemist works and the spillback of any vodka and alcohol,” he was in charge of acceptance of pharmaceutical products, he knew well the medicinal herbs, directed their procurement, i.e. performed the same work as the foreign pharmacists. Nevertheless, he was considered for a long time to be a pharmacist’s student. This was explained by existing opinion about the inferiority of national professionals. Upon admission to the New pharmacy his annual salary was 33 rubles, while foreign alchemists were paid 100-134 rubles.

Pharmacists and alchemists were involved in direct manufacturing of medicines prescribed by doctors from the starting materials. The formulation was presented by a wide variety of pharmaceutical forms: ointments, patches, powders, extracts, solutions, tinctures (“Vodka”), infusions, alcohols,

teas, etc. The publicans were in charge of supervision of the pharmacy cashier, inventory replenishment, and control over the sale of alcoholic beverages. In pharmaceutical laboratories, sulfuric and nitric acid, aqua regia, copper sulfate, and alum were prepared, sulfur was cleared and substances were distilled. In addition, at the pharmacy there were doctors on duty round the clock who examined the patients for a fee, and wrote prescriptions. In 1677, this was done by three doctors and four healers. We can say that the first public pharmacy with free sale of drugs was the first dispensary. Funds from the sale of drugs in New pharmacy provided important revenues for the Pharmaceutical Order.

Special literature was required for medical training of doctors, and for the daily practice of pharmacists. The Pharmaceutical Order replenished its library from a variety of sources. In 1670 the pharmacist Roman Binian was sent to England specifically for the acquisition of medical books. In 1678, the healer Gorsten who went abroad was requested to purchase for the Pharmaceutical order "books by the best authors, who wrote about healing". Books from other orders, particularly from the Secret Order, as well as from private collections were given to the Pharmaceutical Order. The staff of the Pharmaceutical Order included its translators who translated foreign literature into Russian.

But the progress of civilization is a planetary phenomenon, and by the mid-seventeenth century the public institutions in Russia were quite prepared for the perception of medicine as a system of knowledge and practical skills. So, there should appear Russian people who mastered the wise science of medicine.

The clerk of the Ambassadors Order Vasily Timofeevich Postnikov appointed his eldest son Peter to the recently created Slavonic-Greek-Latin Academy, in 1692 he was allowed "by the decree of the great sovereign tsar Peter the Great to study liberal arts in Potavinskaya Academy". Postnikov diligently studied anatomy, surgery, pharmacy, and at the same time he attended a philosophy course. After two years of training, he was subjected to biased exam, where he surprised university professors with his knowledge of

medicine, philosophy and languages – Greek, Latin, Italian and French – and shrewd replies and his speech. In August 1694 the Russian student at the Italian university was recognized as a doctor of medicine and philosophy with the right to teach science and give academic titles.

We have information about medical prescriptions, which were translated into Russian immediately after preparation for security reasons.

In DPO (Documents of the Pharmaceutical Order) there are prescriptions written by doctors Laurentius Blumentrost [3, P. 814], Michael Graman, Johan Rosenburg. The prescription is written according to certain rules – special verb forms, the official name of the drug or its components, the obligatory indication of the amount of substance. The tradition of the prescription in Latin is still preserved in Russia.

Besides prescriptions, there are other medical genres – "Reasoning" about the benefits of coffee and tea, about the medicine "electuarium" [4, P. 734] and "Reasoning" about health protection" [4, P. 344] by the doctor Collins in Latin and Russian.

Tales become more diverse in their content. Previously, there were only case histories. Then, tales became advice on the treatment of diseases (Tale by doctor Belau and Graman about the treatment of the disease "sore throat" [3, P. 131], Tale about how to treat a throat disease [3, P. 133]; scientific reasoning about the medicinal properties of drugs – Tale by the doctor Collins about the healing properties of valerian herbs and burdock [3, P. 341], medical reports (tales about inutility for service as doctors) [3, P. 768]. Moreover, in DPO there are numerous inventories of medicines and pharmaceutical items, medical instruments, there are authentic registers of medicines in Latin and Russian [3, P. 22].

Thus, in the 17th century in Russia, thanks to West European professionals, work on development and implementation of medical terms was activated, as a result of contact between the local vocabulary and international terminology formed on the basis of the Latin and Greek.

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Зеркина Н.Н.¹, Ломакина Е.А.²

¹ORCID: 0000-0003-0305-3899, доцент, кандидат филологических наук, ²ORCID: 0000-0003-3303-2984, кандидат филологических наук,

Магнитогорский государственный технический университет

ЛИНГВИСТИЧЕСКОЕ И ИНФОРМАТИЧЕСКОЕ СОВРЕМЕННОГО ИНФОРМАЦИОННО-ЦИФРОВОГО ПРОСТРАНСТВА

Аннотация

Статья фокусирует внимание на взаимосвязи лингвистических и информатических моментов современного цифрового информационного пространства. Смещение акцентов в сторону лингвистики или информатики позволяет открыть новые ракурсы исследования языка как знаковой системы передающей информацию во времени и пространстве «реальным» и «виртуальным» способами; позволяет выявить и обозначить особенности текстов виртуального пространства, которые становятся неотъемлемой частью индустрии производства информации; выявить особенности создания текстов виртуального пространства и их противопоставление текстам массовой информации по характеру отношений между создателем и получателем позволяет выделить их в особый вид. Компьютерная и корпусная лингвистика обозначаются как элементы, тесно связывающие лингвистику и информатику. Авторы рассматривают влияние цифровых технологий на процесс обучения языкам.

Ключевые слова: лингвистика, информатика, текст, контент-текст, цифровое пространство.

Zerkina N.N.¹, Lomakina Ye.A.²

¹ORCID: 0000-0003-0305-3899, Associate Professor, PhD in Philology, ²ORCID: 0000-0003-3303-2984, Associate Professor, PhD in Philology,

Nosov Magnitogorsk State Technical University;

LINGUISTIC AND DIGITAL CHARACTERISTICS OF MODERN INFORMATION ENVIRONMENT

Abstract

The article focuses on the interaction of the linguistic and digital points of modern information environment. The shift of the accents to the direction of linguistics or digital features can open up new perspectives for the study of language as a sign system transmitting information through time and space by means of "real" and "virtual" methods. Besides it allows revealing and distinguishing features of texts in virtual digital environment which become an integral part of information industry; the way of creating the texts in the Internet and their opposition to texts of mass information on the basis of their relationship between the creator and the receiver that allows their differentiation into a special kind of texts. Computational and corpus linguistics are referred as closely linking elements to linguistics and computing. The authors examine the impact of digital media on the language teaching process.

Keywords: linguistics, computing, text, digital text, digital environment.

Почта авторов / Author Email: leakaty@mail.ru, agatik01@mail.ru

In the modern world information takes an important part not only in the real world but also in the virtual one. The informational digital environment has great impact on present life and this influence is mainly viewed in its forms of information, teaching, entertaining, connecting or even uniting. One of the essential forms of the digital impact on humanity is informative and educational, as far as nearly all of them are partly or wholly expressed by the language by the linguistic means. The interactions of linguistic and digital aspects are quite interesting and relevant issues to study.

1.1 Linguistic points of computing and digital environment

Linguistic challenges of digital environment, therefore, begin where computer science begins itself. These challenges are concentrated in the area of the contact between a human and a machine. Linguistic challenges of digital environment are related to the role of language and text units in the process of understanding, from the smallest components of these units to larger entities – associations of units at different levels. There have not been created any universal linguistic

theories to explain language as a whole and its separate levels or subsystems in digital environment, and it is unknown whether such theories could be elaborated. Therefore, some particular characteristics and aspects of language activity are exposed to modeling and study.

A distinctive feature of our time is the increasing role of information processes, in particular, the creation of an entire industry of information that leads to "information explosion".

The concept "information environment" can be defined as a set of information, information and communication processes, participating in which people can use the information accumulated by society collected by other participants both individual and collective, to interact with them both directly and indirectly.

Computing science is broadly understood as the science of recording, storing, processing, transmitting and using information with the help of modern ICT, and one of the sign systems which transmits information within time and space is language. It is an integral part of mass communication. Digital texts are the part of internet content, together with the