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ENGLISH MEDICAL LEXICOGRAPHY: DIACHRONIC ANALYSIS

АНГЛОМОВНА МЕДИЧНА ЛЕКСИКОГРАФІЯ: ДІАХРОНІЧНИЙ АНАЛІЗ

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The article is devoted to the medical lexicography diachronic analysis in the context of historical development of English medical terminology. The research covers the period from 13 century to 2020 year. The corpus comprises 487 medical dictionaries (only first issue) of different types collected from the catalogues of National Library of Medicine, Simon Frazer University Library, The British Library, The Internet Archive, Library of Congress, WorldCat, National Ukrainian Library named after V.I. Vernadskyi.

The methodology used has a complex character and combines historical and etymological approach, comparative analysis and method of dictionary criticism. The study covered the observation of linguistic and extralinguistic factors. Among linguistic we distinguished the history of medical term, history of English, development of general and medical lexicography with its theoretical and practical features. As extralinguistic – the history of medicine and history in general taking into consideration the events specific for medical reference books (dictionaries) creation.

The juxtaposition of the results suggested such periodisation of medical lexicography in general and English medical lexicography (EML) in particular. The achieved results helped to divide EML into two periods: pre-lexicographic (XIII c. – XVI c.) and lexicographic (XVII c. – 2020). The lexicographic period (XVII c. – 2020) consists of developing (XVII c. – XVIII c.) (internationalization of medical terminology and terminography, the need for translation dictionaries, the birth of EML) and developed (XIX c. – 2020) (the development of EML, the creation of practical and theoretical instruments in EML).

The developed period was subdivided into 3 parts: 1. 19 c. – 1918 year; 2. 1919 – 1945 years; 3. 1946 – 2020 years. The results showed that English medical lexicography is a complex system developing in the context of global scientific and technical progress with its distinct features of each period in EML and helped to come to conclusion that EML has its rich history, but still needs the solution of some theoretical and practical issues for fruitful professional communication in medicine.

Key words: medical lexicography, English medical terminology, medical dictionary, periodisation, extralinguistic and linguistic factors.

Статтю присвячено діахронічному аналізу медичної лексикографії в контексті історичного розвитку англійської медичної термінології та лексикографії. Дослідження охоплює період з 12 століття до 2020 року. Корпус містить 487 медичних словників різних типів, зібраних із каталогів National Library of Medicine, Simon Fraser University Library, The British Library, The Internet Archive, Library of Congress, WorldCat, Національної бібліотеки України імені В.І. Вернадського.

Методологія роботи має комплексний характер і поєднує в собі історичний та етимологічний підхід, порівняльний аналіз і метод словникової критики. Дослідження охоплювало вивчення лінгвістичних та екстралінгвістичних факторів. Серед лінгвістичних було виділено історію медичного терміну, історію англійської мови, розвиток загальної та медичної лексикографії з її теоретичними та практичними особливостями. Що стосується екстралінгвістичних – історія медицини та історія з урахуванням подій, характерних для створення медичних довідників (словників).

Зіставлення отриманих результатів дозволило розробити періодизацію медичної лексикографії загалом та англійської медичної лексикографії (дала – АМЛ) зокрема. Досягнуті результати допомогли поділити АМЛ на два періоди: долексикографічний (XIII с. – XVI ст.) та лексикографічний (XVII ст. – 2020 р.). Лексикографічний період (XVII ст. – 2020 р.) складається із розвиваючого (XVII ст. – XVIII ст.) (інтернаціоналізація медичної термінології та термінографії, необхідність перекладацьких словників, народження АМЛ) та розвинутого (XIX ст. – 2020 р.) (розвиток АМЛ, створення практичних і теоретичних інструментів в АМЛ).

Розвинутий період було поділено на субперіоди: 1) 19 с. – 1918 рік; 2) 1919 – 1945 роки; 3) 1946 – 2020 роки. Результати показали, що англійська медична лексикографія є комплексною системою, яка розвивається в контексті глобального науково-технічного прогресу. Було виділено відмінні риси кожного періоду АМЛ, які продемонстрували, що АМЛ має свою багаторічну історію, але все ж потребує вирішення деяких теоретичних і практичних питань для плідної професійної комунікації в медицині.

Ключові слова: медична лексикографія, англійська медична термінологія, медичний словник, періодизація, екстралінгвістичні та лінгвістичні фактори.

Introduction. Medical lexicography (terminography) is a complex of activities concerned with the design, compilation, use and evaluation of reference works in the field of medicine [7, 93]. Could you imagine how it has become possible to create such a complex medical concept description in a medical dictionary (for example, *Dorland's Illustrated Medical Dictionary, 2012*), combining in one dictionary entry so many detailed information which embraces history of the term creation, orthographic, etymological categories, polysemy, illustrations, phonetic, grammatical and other types of information, that is codified on dictionary microstructure level? Of course, it is only due to long time accurate and hard work of doctors, linguists (lexicographers and terminographers), covering the long enough period since ancient times, when the first medical terms were registered on stones and clay tablets.

As an example, in Mesopotamia, the practice of medicine was regulated by the state. Malpractice was recognized and was punishable by law. *Hammurabi's Code of Law* specified: "If a surgeon performs a major operation on an 'awelum' (nobleman), with a lancet and caused the death of this man, they shall cut off his hands". Then the first Egyptian lists of medical remedies, different methods of treatment and then in Greek and Rome medical treatises.

So, medical lexicography has its rich history and needs the solution of theoretical and practical issues for fruitful professional communication in medicine. Especially now, when scientific and technological progress together with the globalization of the English language require researchers to timely and clearly address a number of issues in various fields of knowledge. Particularly urgent is

the problem of communication in the field of medicine at different levels.

The most important is to provide constructive and productive communication between specialists from different countries and, of course, effective consultations and treatment of patients. Specialists are trying to ensure fruitful communication between the doctor and the patient, between colleagues, scientists and practitioners in the diagnosis, treatment and prevention of diseases, that will definitely help with managing cancer, complications after *Coronaviruses, Ebola virus, Enteroviruses, HIV, Flu* (different types of Influenza) and other diseases at the global level.

Equally important is the quality of medical students training, taking into account their active participation today in international exchanges, conferences and taking qualification exams in English (KROK, CDKI, IFOM, STEP, etc.). All this requires from linguists, and in particular from lexicographers, not only the development of principles for the systematization and registration of terms taking into account the specifics of a medical term, but also the provision of this information in an accessible form for any user, depending on his level of language and knowledge of the terminological apparatus.

Background. In linguistics, there are a number of works devoted to the study of the features of the medical term [3; 13; 14; 19; 20; 21; 22; 24; 28], issues of general lexicography [2; 6; 8; 15; 17; 23], problems of terminography (LSP lexicography) of various fields of knowledge [1; 4; 8; 10; 11; 12], some particular aspects of medical lexicography [16; 18; 26; 27]. At the same time, the lacuna devoted to the registration of English medical terms in dic-

tionaries of various types remained unfilled and these issues remained without a systematic study in theoretical lexicography, so it proves the **scientific novelty** of our study.

The aim of the article is to carry out a diachronic analysis of English medical lexicography in the context of historical development of medical terminology and reveal its peculiarities. **The material of the study:** history of medical lexicography and terminology, the corpus of English medical reference works which comprises 487 medical dictionaries of different types was collected from the catalogues of National Library of Medicine, Simon Frazer University Library, The British Library, The Internet Archive, Library of Congress, World Cat, National Ukrainian Library named after V.I. Vernadskyi. Only first issue of each dictionary was included into study without reprinted ones. **The methodology** used has a complex character and combines historical and etymological approach, comparative analysis and method of dictionary criticism.

Results and discussion. The study covered the observation of the row of linguistic and extralinguistic factors. Among linguistic we distinguished the history of medical term, history of English, development of general and medical lexicography with its theoretical and practical features. As for extralinguistic factors we analyzed the history of medicine and history in general taking into consideration the events specific for medical reference books (dictionaries) creation. The factual material was taken from Linguistic Encyclopaedic Dictionary, Encyclopaedia Britannica, Languages for special purposes. Fachsprachen: ein internationales Handbuch zur Fachsprachenforschung und Terminologiewissenschaft [5; 25].

The juxtaposition of the results suggested the following periodisation of medical lexicography:

– Antique Medical Protolexicography (18th c. B. C. – 1st c.);

– Medieval Medical Protolexicography (2nd c. – early 15th c.)

(the creation of Greek and Latin tradition which is still strong nowadays);

– Early Modern Medical Prelexicography (mid.15th c.– 18th c.);

(the start of national lexicographies development in bilingual and multilingual dictionaries);

– Late Modern Medical Lexicography (19th c. – 1918);

(the rise of scientific medicine and, as a result, new terms formation and codification);

– Contemporary Medical Lexicography (1919 – 2020);

(the creation of wide range of different types dictionaries).

The study of English medical lexicography covers the period from the XIII c. to 2020, which was divided into two periods: *pre-lexicographic* (XIII c. – XVI c.) and *lexicographic* (XVII c. – 2020) with its subdivision.

The pre-lexicographic period (XIII c. – XVI c.) is specific for its proto-lexicographic formation with absorbing the traditions of antique period and for the birth of national lexicography. During this period the formation of English medical terminography was observed which was characterised by the development of protomedical Greek and Latin terminology and its codification first in herbals and manuscripts, then in medical glossaries and creation of monolingual English medical encyclopaedias and multilingual Latin-Greek-Hebrew-Arabic and Hebrew-Latin-Italian medical dictionaries. The examples of such works are *The Etymologies of Isidore of Seville* (615 – 630), *The Synonyma Simonis Genuensis* (*The Synonyms of Simon of Genoa*) (1288).

The lexicographic period (XVII c. – 2020) was divided into *developing and developed*:

1. *Developing* (XVII c. – XVIII c.) (internationalization of medical terminology and terminography, the need for translation dictionaries)/

2. *Developed* (XIX c. – 2020):

– 19th c. – 1918 (the rise of medical science, standardization of terminology and birth of EML);

– 1919 – 1945 (development of military medicine, medical terminology (field surgery, anaesthesiology, plastic surgery), intensive development of EML);

– 1946 – 2020 (English as a lingua franca in medicine, development of new technologies, outbreak of cancer, transplantations, aesthetic plastic, immunology, endocrinology, viruses, diagnostics, electronic / on-line / digital methods of coding the term, creation of wide range of med dictionaries).

The lexicographic period is characterised mostly by medical terms creation under the influence of scientific revolution with creation of first dictionaries and was differentiated into *developing* (XVII c. – XVIII c.) when *A Physical dictionary* (1657) was created and *developed* (XIX c. – 2020) with a huge amount of English medical dictionaries of different types registering specialised medical terminology.

The developing period was not very productive but demonstrates the creation of 31 dictionaries gathering the traditions of general lexicography and terminology. It started with monolingual dictionary *A Physical dictionary* (1657) Then goes the creation of compendiums, such as *Synopsis medicinae, or*

A compendium of astrological, Galenical, & chymical physic (1671), Ars chirurgica. A compendium of the theory and practice of chirurgery (1698) and bilingual dictionaries, such as Dictionarium medicum universale: or A new medicinal dictionary (1749) and others presented by factual and linguistic reference works.

The developed period demonstrates its productivity in creation of 456 dictionaries (only first edition without reprinted ones was taken into quantitative analyses), which we divided according to the method of term interpretation and description into *factual (56 reference works: nomenclatures, compendiums, codification systems) and linguistic (408 reference works)*. The obtained results show the prevalence of *linguistic dictionaries*. Among *linguistic* we observe the prevalence of *monolingual (229)*, next goes *bilingual and multilingual dictionaries (121)* and the last place goes to *encyclopaedic dictionaries (58)*.

The examples of *factual reference works* are presented by *medical nomenclatures (MN)*, for example, *Baseler Nomina Anatomica (1895), Jenaer Nomina Anatomica (1935)*. The critical analysis of MN shows that they are factual vocabulary guides with a rich history and performing functions such as collecting, organizing, standardizing, interpreting a medical term, and transferring knowledge in the field of medicine. The application of the historical-typological approach has demonstrated that MN, including its linguistic and non-linguistic parameters, are one of the most important functional units in the general lexicographic system and may be named as so-called repository of medical terminology and terminography.

The results of the lexicographic analysis of *medical nomenclatures* shows that MN are factual reference works and perform almost all the basic functions of terminographic dictionary guides, with the exception of explicatory one (no description of grammatical and orthoepic characteristics, codification of the polysemy of medical term and an illustration of its use in medical discourse. The comparative analysis of *histological, dental and embryological nomenclatures* revealed that they do not have significant differences at the level of mega- and microstructures in comparison with the anatomical ones. The studied nomenclatures were created using terminographic tools and principles which were first applied for anatomical nomenclatures.

The *monolingual lexicography* is presented by different dictionaries, but the brightest are Dorland's, Stedman's, Taber's traditions, for example *Dorland's Illustrated Medical Dictionary (2012), Stedman's medical dictionary (2006), Taber's*

Pocket Encyclopedic Medical Dictionary (1905). It has been revealed that main issues and features of English medical terms such as polysemy, synonymy, abbreviations and eponyms are mostly fully represented in them. In its turn, the problem of neologisms needs further consideration. Compilers of these dictionaries adhere to the principles of unification and standardization required for such type of dictionaries.

The main problems of medical lexicography are solved by the combination of linguistic and encyclopaedic parameters in dictionary entries. The issues of synonymy and polysemy of medical term are solved by the use of cross references and additional subentries. Etymological information helps to understand the meaning and use of eponyms. Various appendixes eliminate the difficulty of understanding special abbreviations and symbols. The systematic approach to medical term selection and its representation, the combination of linguistic and encyclopaedic methods allow achieving the most detailed codification of information about a particular medical concept.

The lexicographic analysis of *bilingual and multilingual medical lexicography* showed that lexicography tasks such as vocabulary selection, unification and standardization of the term, accessibility of the material for the user when registering all the features of the English medical term are successfully solved by bilingual and multilingual terminography tools. At the megastructure level, there is an informative preface, indexes, appendices with plates and tables, parallel registration of terms in the main dictionary and index dictionaries in multilingual med. lexicography. At the macrolevel – alphabetical construction with thematic organization in subentries, encyclopaedic information, illustrations, the use of signs, abbreviations, numbers and cross-references. At the microstructure level – the inclusion of grammatical characteristics, etymology, additional subentries and subsubentries. There are some examples of bilingual and multilingual dictionaries: *A dictionary of medical terms, English to Bengali (1912), Cousland's English-Chinese medical lexicon (1939), Medical dictionary: English-French-German (1950), Terminologia Medica Polyglotta (1979)*.

Conclusions. All about mentioned suggest us that English medical lexicography is a complex system developing in the context of global scientific and technical progress. The results showed the distinct features of each period in EML and helped to come to conclusion that EML has its rich history, but still needs the solution of some theoretical and practical issues for fruitful professional com-

munication in medicine. The main tasks of EML in future are connected with lexicographic description of abbreviations, neologisms, polysemantic terms in different types of medical dictionaries taking into account user needs.

The perspectives of the further research are in the detailed study of EML typology and development of lexicographic tools and methods for codification of all peculiarities and features of medical term unified for any type of dictionary.

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