New Research History of World Anesthesiology in Reflection of Collecting Media

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Abstract
The article presents the materials of the study devoted to the reflection in the means of collecting, such as philately, phaleristics and numismatics, data on the history of world anesthesiology, and about its heroes. The article is illustrated with images of postage stamps, artistic marked envelopes, original postmarks, medals, tokens and commemorative badges, their description and additional information to them are given.

Keywords: History of Anesthesiology; Renowned Anesthesiologists; Philately; Faleristics; Numismatics.

Introduction
Preserving history in the memory of descendants is a noble and demanded deed! Historical events in the history of medicine and, in particular, in the history of world anesthesiology, are chronicles of the struggle of mankind with pain and suffering, both physical and psychological, caused by diseases and, unfortunately, their treatment. From the very beginning of its existence, the struggle with pain has been one of the leading motives for curing a person from suffering. In every country, thanks to the efforts of many scientists - theorists and practitioners of medicine, chemistry, pharmacology and a number of other sciences, people have learned to deal with pain. They tested thousands and tens of thousands of different methods and methods of analgesia - natural, physical, chemical, choosing the most effective methods and means for practical application. In this new article, on the history of the development and formation of world anesthesiology and the fight against pain, we will talk about new people who have left their mark in this struggle, scientists from different countries and centuries. All text inserts will be colorfully illustrated using screenshots of philatelic, numismatic, faleristic and other collection materials that informatively and fascinatingly complement the narrative about people and important events in the history of world anesthesiology. This, the second article, is a logical and semantic addition to the earlier published first article on the history of world anesthesiology. It contains new, textual and illustrative materials not previously used by the author.

Aim of the Work
To present new, non-standard data about the history, formation and heroes of world anesthesiology and the fight against pain, through such means as a variety of collectibles and, in particular, postage stamps and envelopes, commemorative coins and medals, badges and awards dedicated to anesthesiology.

Material and Methods
In carrying out this research work, we used the method of in-depth literary-critical analysis of available scientific sources of information on the issue under study, using reference books, encyclopedias, catalogs, specialized periodicals, and Internet resources.

Result and Discussion
I would like to start my new article on the treatment of pain and the history of the pain relief process with a lyrical digression. Pain has always accompanied a person, causing him both physical and physical suffering. At one time, the famous Scottish poet Robert Burns devoted a whole ode to toothache, colorfully describing all his torment and suffering in the work "Address to the toothache" [1, 33]. A small selection of collection materials dedicated to Robert Burns is shown in Fig. 1 [25, 33].
Passing directly to the topic of the article on the history of world anesthesiology, I would like to note that there is a belief, actively supported by many historians of medicine around the world, that the medical term "anesthesia" was first used in the 1st century AD, by the Greek physician and philosopher Dioscorides Pedanius (43-90 AD) [7, 17, 25]. He did this by describing, in part, the healing effect of mandrake, a popular drug in early medicine. Dioscorides Pedanius, is the "father" of botany and pharmacognosy. He left behind a monumental scientific work called "De Materia Medica", which contains a description of more than 600 plants and more than 1000 different medicines [7, 17, 25]. A selection of collection materials dedicated to Dioscorides is shown in Fig. 2 [7, 17, 25].

![Collectibles dedicated to Dioscorides](image)

**Figure 2:** Collectibles dedicated to Dioscorides
In addition, it should be noted that in 1540 Paracelsus, working with various chemicals, established the analgesic effect of diethyl ether, which he used a lot in practice [2, 11, 16, 25]. He, like Ambroise Paré, used breathing / endotracheal tubes. The collection set dedicated to Paracelsus is shown in Fig. 3 [11, 16, 25].

Figure 3: Collection set dedicated to Theophrastus Paracelsus
A Chinese physician Hua Tuo, in the 2nd century AD, for the purpose of pain relief, prepared and gave his patients a medicinal mixture consisting of wine, a mixture of herbal extracts and marijuana - mafeisan. According to the preserved historical data, under this kind of oral anesthesia, he performed a gangrenous colon resection [23, 34-36]. He also actively used acupuncture as an anesthetic. In fig. 4, shows postage stamps and blocks of the People's Republic of China, dedicated to the physician Hua Tuo [23, 34-36].

Figure 4. Collectible materials dedicated to Hua Tuo

In the history of world anesthesiology, scientific discoveries in the field of chemistry and physics occupy an important place. So, of great importance, in this matter, was the discovery in 1774 by Joseph Priestley of oxygen, and by him, in 1772 - nitrous oxide [8, 9, 24]. The abundance of collectible materials is striking, especially the number of US First Day envelopes dedicated to J. Priestley and his discoveries of world significance! Collectible materials dedicated to J. Priestley are presented in Fig. 5 [8, 9, 12, 24].

Figure 5. Collectible materials dedicated to J. Priestley
In a separate section, I would like to present information about the contribution of Russian doctors in the 19th-20th centuries to the development of world anesthesiology. The first operation in Russia, using ether anesthesia, was carried out on February 7, 1847, by the famous Russian surgeon - Professor Fedor Ivanovich Inozemtsev (1802-1869), who later carried out, very successfully, several complex abdominal operations [3]. In fig. 4, there is a postage stamp of Ukraine dedicated to F.I. Inozemtsev [13, 25].

So, on December 7, 1909, for the first time in clinical practice, intravenous hedonal anesthesia was used, which was called "Russian anesthesia" [3]. On this day, at the clinic of Professor Sergei Petrovich Fedorov, the foot was amputated. This became possible due to the close creative cooperation of the scientist-surgeon S.P. Fedorov and chemist, academician of the Russian Academy of Sciences, Nikolai P. Kravkov (1865-1924) [25]. The method of using hedonal anesthesia was developed by A.P. Eremic. In this clinic, 63 surgeries were successfully performed using intravenous hedonal anesthesia. This paved the way for the use of non-inhalation anesthesia. [25]. Collectible materials dedicated to the founder of Russian pharmacology, academician N.P. Kravkov, are shown in Fig. 7 [3, 25].
A separate collection, in Fig. 8, presents numismatic and phaleristic materials dedicated to the famous Russian surgeon, founder of Russian urology, professor at the Military Medical Academy, personal physician of the last Russian emperor Nicholas II - S.P. Fedorov (1869-1936) [15, 19, 25]. During operations in his clinic, he actively used various anesthetics available in those years [15, 19, 25].

In 1915, he received the Nobel Prize in the field of medicine and physiology, the scientist Richard Willstätter (1872-1942), who used cocaine derivatives in his works, was the first to completely synthesize it, was engaged in the introduction of regional anesthesia [20, 25, 27,30]. A selection of collection materials dedicated to this scientist is shown in Fig. 9 [20, 25, 27, 30].
In America, Horace Wells (1815-1848), a dentist, experienced the analgesic effect of nitrous oxide during tooth extraction, and then himself applied it to 15 more patients [8, 13, 25, 27]. Since 1844, he began to actively use this gas as a general anesthetic. A postage stamp of Ukraine dedicated to Horatio Wells, as well as a bas-relief and a commemorative badge, are shown in Fig. 10 [8, 13, 25, 27].

**Figure 10: Collectibles dedicated to Horatio Wells**

English chemist, Sir Humphry Davy / Hemphrey / Humphry Davy (1778-1829), in his practical activity discovered the analgesic properties of nitrous oxide, calling it "laughing gas" [8, 10, 13, 25, 27]. On April 11, 1799, he managed to establish industrial production of pure nitrous oxide for medical purposes [6, 8, 10, 13, 14, 25, 27]. In fig. 11, a selection of collectible materials (lithographic portraits, commemorative medals, postcards and postcards dedicated to Sir Humphrey Davy) [6, 8, 10, 13, 14, 25, 27].

**Figure 11: A selection of collection materials dedicated to Humphrey Davy**

In fig. 12, presents a small collectible collection (marked postage envelopes and a commemorative medal of the USA) dedicated to the famous physician and pioneer of the use of inhalation anesthesia - Crawford Long [25-27].
In 1846, an English surgeon, Robert Liston, was the first in Europe to use ether as anesthesia and successfully amputated a patient named James Churchill. A small selection of collectible materials (a screenshot of R. Liston's book, a commemorative bronze medal and a postage stamp of Ukraine) are shown in Fig. 13[13, 21, 25].

The following fig. 14, presents a postage stamp and thematic, artistic stamped envelopes of Romania (1994) dedicated to the founder of the anesthesia service in this country, military doctor, MD, Matthias Musil (1806-1889) [4, 18, 25]. He, and another Romanian physician, MD, Joseph Siehs (1813-1850), were the pioneers of the Romanian Anesthesia Service, as well as active supporters of the use of ether anesthesia in surgical practice [4, 18, 25]. On Friday, February 5, 1847, in the garrison hospital of Timisoara, during an operation at the soldier Nikola Muntean, by surgeons Matthias Musil and Dr. Giess, ether anesthesia was applied [4, 18, 25]. Romanian doctors made their own essential inhaler from a drawing printed in London Illustr. Gazette " [4, 18, 25].

The next small collection is dedicated to a Japanese surgeon and anesthesiologist, an expert in Chinese herbal medicine and European (Dutch) medicine at that time - Seishu Hanaoka (1760-1835) [22, 24, 25]. He, the first in Japan, performed an operation under general anesthesia, performed amputations of limbs and removal of malignant tumors [22, 24, 25]. So, in particular, he performed more than 150 successful mastectomies, using general anesthesia caused by the remedy / drink he used from a mixture of herbs "tsūsensan," among other means, including belladona, which led to the patient's loss of consciousness, adequate prolonged anesthesia and relaxation of skeletal muscles [22, 24, 25]. The image of the flower of the Datura stramonium plant has become a symbol not only of the medical practice of Seishu Hanaoka, but also of the Japanese Association of Anesthesiologists [22, 24, 25]. In fig. 15, a selection of collectible materials dedicated to Seishu Hanaoka [22, 24, 25].
The following fig. 16, presents a small selection of commemorative medals and a screenshot of the painting dedicated to Oliver Wendell Holmes Sr. (1809-1894) [3, 25, 27, 29, 30]. It was he who introduced the scientific term "anesthesia" into medical practice [3, 25, 27, 29, 30].

In the history of the development of world anesthesiology, a special place is occupied by the practical application of such a method as spinal anesthesia in surgical interventions, one of the most important methods of using non-inhalation anesthesia. One of the active supporters of this method, who repeatedly used this method in his surgical practice, was the German scientist and practicing surgeon, Professor August Bier (1861-1949) [14, 30]. He performed his exemplary operation, using spinal anesthesia, on 16 August 1898, at the Royal Hospital, University of Keele [14]. A commemorative medal dedicated to A. Bier (obverse and reverse) is shown in Fig. 17 [6, 14, 25, 30].

A significant role in the popularization and introduction of spinal anesthesia into surgical practice was made by the famous Romanian scientist and practicing surgeon, with a worldwide reputation, Professor Thoma Ionescu (1860-1926), who himself performed more than 6000 operations using spinal anesthesia [5, 18, 25, 28, 31, 32]. A selection of collectible philatelic and numismatic materials dedicated to Professor Tom Ionescu, the "pioneer" of Romanian and world spinal anesthesia, are shown in Fig. 18 [5, 18, 25, 28, 31, 32].
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This concludes the next article devoted to the history of world anesthesiology and its heroes from different countries of the world. The author is preparing a new article, which will include materials from new scientific research on this topic.

**Conclusion**

1. The article presents new collection materials devoted to the reflection in the means of world collecting, albeit in a brief form, the history of world anesthesiology.
2. The presented illustrative materials can be used as an auxiliary informative tool in the study of such disciplines as "Anesthesiology" and "History of Medicine" in specialized universities and departments.
3. Modern collectibles, in all their diversity, quite fully, brightly and creatively, reflect the history of world anesthesiology and its heroes of different years, from many countries of the world.

**Conflict of Interest**

I have no conflict of interest.

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