

History of Ophthalmology

Ukrainian Ophthalmology in Names: Dr. Mykhailo Kos (1863-1930)

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Biographical science is of special importance when studying particular historical epochs, since it is the figures on whom biographical dictionaries are focused that, in some way, exert influence on the course of events. Mykhailo Kos, a military doctor and ophthalmologist, was one of such figures in the history of medicine.

The complex personality of Mykhailo Kos has been inadequately investigated in the history of medicine. Therefore, the purpose of this work was to highlight Kos' activity as that of an ophthalmologist, to analyze his scientific legacy, and to evaluate his contribution to the development of medicine. We believe that the figure of Mykhailo Kos is still waiting for efforts of a committed researcher.

Obituaries, science articles and popular science articles, and manuscripts (particularly, personal field journals) of Mykhailo Kos were used as a basis for research.

Mykhailo Kos was born in 1863 in the town of Komarno, Lviv region, where his father, also called

This paper highlights the complex personality of Mykhailo Kos, a Ukrainian military doctor, ophthalmologist, and an outstanding public figure. The authors described his life and contribution to science as well as articles in periodicals. His works on ophthalmology and articles directed at providing eye health information to the public were subjected to analysis.

Mykhailo Kos' legacy is wide and multifaceted, and his works require close attention of historians and ophthalmologists. The doctor's publications were directed primarily both at burning academic ophthalmological issues of that time and at providing health information and education to the Ukrainian public, with an emphasis on prevention of eye disorders.

In addition, he published biographical works on a number of famous figures in the field of medicine and, what is especially interesting, in the field of humanitarian law.

The multifaceted nature of Mykhailo Kos came out when he co-established and contributed to the development of the Ukrainian Medical Society which included Ukrainian doctors from eastern Galicia.

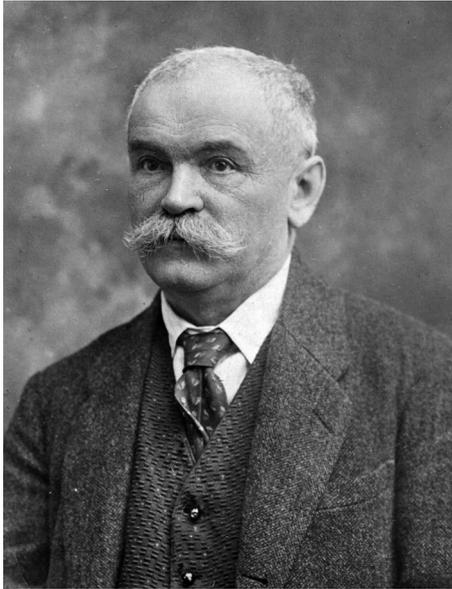
His military career is also worth the reader's attention. Although for most this career involved serving in the Austrian army, his patriotic spirit called him to the development of and service for the Ukrainian state in the early 20th century, in the years of the Ukrainian Liberation Struggle at western Ukraine.

Another proof of the estimation of his contribution to science we find in electing Mykhailo Kos a Member of the Shevchenko Science Society.

His personal field journals and notebooks written during World War I are of particular interest.

Mykhailo, was a mayor for two terms until 1895, and a co-founder of the local Prosvita library. His mother, Maria, was from a noble family of Lishchinskys. Mykhailo had three brothers. His elder brother Ivan chose to make a career of military medicine, served as a senior military doctor in an Imperial and Royal Tyrolean Rifle Regiment, but soon left practicing medicine and became practicing law. Another brother, Andrii, became a lawyer in Lviv, and subsequently was elected to the Austrian Parliament. The youngest brother, Joseph, studied at the University of Vienna and also became a doctor.

Mykhailo studied medicine at the University of Krakow, which he graduated from in 1888, and subsequently was a resident at hospitals in Graz and Vienna. Since he had deep knowledge not only in medicine, but also in other areas such as literature, history, geography, etc, his friends called him a walking encyclopedia [1].



Др. Михайло Кос (1863-1930)

For most of his life (1888–1917), Mykhailo Kos served as a military doctor in the Austrian army. He was commissioned Senior Lieutenant (Oberarzt), and started his career in Graz in 1888. In 1889, he served in the 16th Rifle Regiment in the Croatian towns of Bjelovar, Trebinje and Kamenica. He was promoted two years later to the rank of Captain (Regimentsarzt) 2nd Class, and, in 1894, to the rank of Captain (Regimentsarzt) 1st Class. In 1898, Mykhailo was transferred to the 90th Rifle Regiment in the town of Jaroslaw. He was posted as Head Doctor at the Garrison Military Hospital, Peremyshl, in 1900. In 1904, he obtained the rank of Major (Stabsarzt), and in 1909, the rank of Lieutenant-Colonel (Oberstabsarzt) 2nd Class. Mykhailo Kos was promoted to the rank of Lieutenant-Colonel (Oberstabsarzt) 1st Class, and awarded with the Bronze Medal of Honor (Bronze Militärverdienstmedaille am Bande Militärverdienstkreuz) in 1915 [2].

During the years of the Ukrainian Liberation Struggle and the West Ukrainian National Republic, he served as “supervisor of all the municipal sanitary departments” in the detachments of the Ukrainian Galician Army located in Peremyshl. Subsequently, he dealt with the humanitarian issues with regard to Ukrainian prisoners of war and internees. After retirement, he had a private medical practice as an ophthalmologist in Peremyshl [1].

His vast medical practice and expertise enabled Mykhailo Kos to demonstrate a distinguished performance in science. He published his works in Ukrainian science journals such as Collection of Works by Members of the Section of Mathematics, Natural Science and Medicine of the Shevchenko Science Society in Lviv (On Skiascopy (1899), Ocular Defects in Recruits for the Army (1903), Treatment for Trachoma and Other Inflammatory Conditions (1903)) and Transactions of the Ukrainian Science Society (Kyiv) as well as popular magazines and

newspapers (Dilo and Peremyshl Reporter). In particular, Mykhailo’s Peremyshl Reporter articles on selected topical themes (e.g., Doctor’s Fee (1910) and Marital Fame (1912)) [1] were of special interest. In addition, some of his articles were published in periodicals of the Austrian War Department such as Wiener medizinische Wochenschrift [3] and Der Militärarzt [4].

A substantial article, Ocular Defects in Recruits for the Army, discussed the issues of medical assessment of conscript soldiers. Based on his personal medical experience, the author analyzed challenges for the ophthalmologist examining a recruit for the army and the ways for overcoming these challenges. Special attention was given to ocular defects feigned by recruits, emphasizing that the latter were not interested in cooperating with the examiner: “First, it is important to take into account that, in conscript soldiers, assessment of the visual function is much more difficult than in clinical patients whose complaints may be mostly regarded as made in good faith. However, before the examination begins, conscript soldiers ... already have a plan for misleading the examiner ...” [5].

In addition, the author made a detailed analysis of the behavior of examination subjects, taking into account their social background and aptitude: “The behavior of the conscript soldiers which I had to examine depended on whether they were from the local rural Galician population or from intelligentsia..” [5]. A substantial section of the article was devoted to methods for making an “objective” diagnosis without patient cooperation. Mykhailo Kos provided statistical data on vision defects in draftees, with myopia and hyperopia being the two most common (47.7% and 14.5%, respectively). Of particular interest are the data on the numbers of recruits found fit or unfit for service. Thus, of the 655 recruits examined, 385 (58.7%) were found unfit for service with troops; 31 (4.7%), unfit for any form of military service; and 54 (8.2%), fit for support positions. In addition, of the 185 recruits found fit for military service, 63 attempted to feign illness [5]. Mykhailo Kos had been examining draftees in garrison hospitals of Jaroslaw and Peremyshl over three years.

His pre-war articles focused mostly on providing health information to the public, particularly concerning visual health (Use of Spectacles (1900), Cataract (1901), Strabismus (1901), History of Spectacles (1902), Walleye (1904), Farsightedness in Children (1905), and Night Blindness (1910)) and popular health science (History of Spectacles (1902), Smallpox Vaccination (1902), Immunity Against Disease (1903), Destructive Instinct (1904), Medicine Four Thousand Years Ago (1906), Stars: Why They Are Shaped the Way They Are (1907)) [2].

His article Use of Spectacles drew attention to the fact that people including doctors avoided using these appliances. The author expressed the opinion that this could be explained by an inadequate approach to lens fitting: “... so far, for these people, it has been very difficult, if not impossible, to fit good spectacle lenses

well for themselves, because a good spectacle lens fitting can be done only ... by an ophthalmologist. Traditionally, an individual used to fit lenses himself... This approach could actually result only in deterioration of vision" [6]. In that discussion he explained in detail the difference between nearsightedness and farsightedness, stressing that each of these diseases requires different type of spectacles for correction. He also emphasized that a nearsighted person should not fit spectacle lenses himself or herself: "... because they (patients), especially young individuals, commonly prefer choosing overpowered spectacle lenses. This is partly due to lack of proper knowledge, and partly due to naughtiness, in an attempt to look like "scientists" [6]. The author believed that spectacle lenses should be fitted only by an ophthalmologist, and only taking into account not only the particular vision defect, but also the purpose they are intended for (e.g., reading).

Mykhailo Kos recommended watching for children in order to note vision defect early enough to address it: "Junior schoolchildren often like seeing through their grandfather's or grandmother's spectacles and reading prints they could not see without spectacles". In such cases, the doctor recommended consulting an ophthalmologist to have proper spectacle lenses fitted for everyday use [6].

Mykhailo Kos' article Cataract introduced his readers to this condition. The author shortly characterized the causes of cataract: "... inflammation of the cornea and iris, detachment of the neural retina, and, what is most important, lens opacity" [7]. The doctor pointed to the changes which the eye undergoes in cataract, and elaborated on the treatment, particularly, surgery, for the disease. He stated that the success rate of cataract surgery was about 98%. According to Mykhailo Kos, cataract accounted for 7-8% of all ocular disorders registered, and most of cataract patients were 50 to 70 years old. In addition, congenital and traumatic cataracts, and those developed as a complication of another eye disorder, accounted for approximately one third of all cataracts.

The author, while discussing the treatment for cataract, stressed on the importance of vision in our life: "Loss of vision seems to be the second most severe potential loss after loss of life" [7]. The last portion of the article is a brief overview of the history of treatment of cataract in the world. The doctor wrote that ancient Egyptian manuscripts of the 16th century BC were the first to contain a rather accurate description the disease. In addition, cataract surgery is mentioned in one of the foundational texts of Ayurveda, was well known to the ancient Romans and Arabs, but It was only since 18th century that it became widely practiced in Europe. The author believes that it "... is or at least, should be known in every village" [7].

Mykhailo Kos' article Strabismus was published in the newspaper Dilo in 1901 and introduced his readers to this eye condition. He noted that, in strabismus, the eye ceases to be a "mirror of human soul" [8]. The article described, what the disease was, and pointed to possible causes of the disease, with an emphasis on brain disorder

and hereditary factor. Pediatric strabismus was given special attention. The author dispelled the popular myths about causes and inadequate methods of treatment of pediatric strabismus, such as vision correction with the use of nutshell, and explained in detail why these methods are ineffective. Mykhailo Kos, through this article, aimed to convince readers that wearing special spectacles was the best method for correction of strabismus in juniors, whereas only surgery could correct strabismus in children of 10 to 12 years: "... any other methods of correction for strabismus are ineffective and waste time and money" [8].

He also published biographical articles about notable persons, such as Manuel Garcia (1905), on the famous Spanish singer and composer, the inventor of the laryngoscope, and Henri Durant (1910), on the Swiss philanthropist, co-founder of the Red Cross and winner of the first Nobel Peace Prize [2].

After World War I, articles by Mykhailo Kos were published in a Peremyshl weekly named Ukrainskyi Golos. The most important works of that period included On Ocular Trauma (1920), On Doctor's Care (1920), Whether and When It Is Appropriate to Use Venesection (1920), Saccharin and Hair in the Eye [2].

The first of these articles discussed the potential dangers and ocular traumas relevant to peasants involved in harvesting. Thus, a piece of straw or wheat spike could get into the eye, and a piece of metal could get there during scythe or sickle whetting. Any such event could result in a serious eye injury, with consequences as severe as blindness. The article described the way in which the eye receives an injury, and provided a generalized overview of the changes the eye undergoes after having being injured. Mykhailo Kos stressed that although an individual may himself remove a foreign body from his eye in most cases, the best way is to seek medical care: "If an individual visits the doctor with an eye injury caused by a foreign body, the doctor will remove the thing which has got into the eye and irritates it, and all will end well..." [9]. The author emphasized that small pieces of metal which have got into the eye are especially dangerous, since they can hardly be seen without a loupe and can get stuck deep in the eye so firmly that will require the use of special instruments for removal.

In 1920, Mykhailo Kos co-established the Ukrainian Medical Society which included Ukrainian doctors from eastern Galicia. In 1914, he was elected a Member of the Shevchenko Science Society [10].

The military doctor's scientific legacy and oeuvre included, in particular, his personal field journals and notebooks written in German during World War I [11].

Dr Mykhailo Kos died in Peremyshl in 1930 at the age of 67.

Further research of the history of Ukrainian medicine is warranted, especially with regard to such prominent figures as Dr Kos, and would enable unravel the mysteries hidden by time. This paper just marks the beginning of a long way.

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