

### **Professor Emanuel Emeryk Machek (1852-1930): Life and Contribution to Science**

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*The article presents the life and contribution to science of Professor Emanuel Emeryk Machek, a distinguished ophthalmologist and scientist who lived at the end of the 19th century and the beginning of the 20th century in Lviv. Professor Machek contributed greatly to local and international medical science, and was a founder of both the Lviv Eye Clinic and the Ophthalmology Department of the Lviv University.*

Galicia has been famous for its scientists in different fields for centuries. 2017 marked the 165th anniversary of the birth of Emanuel Emeryk Machek, a distinguished professor of ophthalmology who had contributed greatly to local and international medical science.

Emanuel Machek was born on March 7, 1852, in Sambir (a town near Lviv), where his father, Ivan Machek, was a bailiff. After a course at the gymnasium there, he studied at the University of Vienna, gaining his medical doctorate in 1877 [6]. He started practicing as a volunteer doctor at the Vienna Eye Clinic, where he worked under the guidance of professor Carl Ferdinand von Arlt (1812–1887), the head of the clinic, and professor Eduard Jäger (1818–1884), from 1877 to 1879. Professor Carl F. Arlt, a distinguished Viennese ophthalmologist and the author of the three-volume textbook on eye diseases, “Die Krankheiten des Auges” (including analysis of the symptoms of these diseases, patients’ examination results, and detailed disease course descriptions, and discussion on medical statistical methods of that time), greatly influenced Machek’s formation and development as a doctor and scientist [12]. Years later, many things regarding operation of the Lviv University Clinic were introduced and further developed by E. Machek much in line with the Viennese ideas and particularly those of professor Arlt.

Machek abandoned his initial idea of getting an appointment of a research assistant at the Department of Ophthalmology in the Vienna University, and left Vienna for Cracow, where he worked as clinical assistant at the Department of Ophthalmology, Jagiellonian University, under the guidance of Professor Lucjan Rydel from 1878 to 1883. Along this way, he completed a specialization course in ophthalmology at the Heidelberg University, under the supervision of Professor Otto H.E. Becker (1828–1890) in 1881.

At that period Machek was very busy with his clinical practice and preparation for his habilitation, including analysis of clinical material and publication of academic works. In addition, in 1881, he started taking part in medical congresses for which he delivered numerous reports on ophthalmological issues of the day. In 1883, Machek earned his Habilitation (venia legend in Ophthalmology), held a Privatdozent position at the Jagiellonian University in Cracow, and started giving his first ophthalmology lecture course.

In 1884 he moved to Lviv, and there he was busy only with his private ophthalmological practice for a rather long time. By the early nineties of the 19th century, Dr Machek had earned a strong reputation among the medical community of the city, and become active in the life of the Galician Medical Association and the Medical Society of Lviv.

In April 1891, the Austrian Emperor Franz Joseph announced the establishment of the Medical Faculty at the Lviv University. A cohort of experienced and skilled doctors contributed to the professional development of the faculty. On 2 February 1892, the National Department appointed E. Machek as Head of the Department of Ophthalmology at the Lviv General Hospital. That same year the National Department appointed him as a delegate to the Imperial and Royal Council in Healthcare [4]. During his headship of the department of ophthalmology at the Lviv General Hospital, professor Machek contributed greatly to the improvement of work conditions for doctors: new diagnostic and examination rooms were established, and the operation room was equipped with state-of-the-art technology for the time (particularly, with regard to surgical armamentarium), and the bed capacity increased

to 80. In addition, he was focusing research activities, material sampling and medical statistical analysis [7]. For its first thirty-five years, the department of ophthalmology was headed by professor Machek, and functioned very well.

The Eye Clinic at the Lviv Regional Hospital started functioning since 1897, and on 25 August 1898, E. Machek was appointed as ordinary professor and Chair of Ophthalmology at the Medical Faculty, University of Lviv. That day has been considered as a day of the establishment of the Department of Ophthalmology at the University of Lviv [2]. About 20 doctors were working under E. Machek at the Eye Clinic during 20 years after the establishment of the clinic. The clinic was equipped with state-of-the-art technology (e.g., stereoscopic loupe, astigmometers, ophthalmometers, photometer, siderophone, stereoscope, and etc.) for the time. In addition, it had a bed capacity of 40 (3 wards for women and 4 wards for men), an operation room well equipped for that time, and a study hall with an area of 90 sq.m. During 8 years after the establishment, the number of patients visiting the clinic each year increased from 3283 (1898-1899) to 6473 (1905-1906). During the period from 1899-1922, the total numbers of patients visiting the clinic, inpatients, and outpatients were 175526, 12167, and 132599, respectively. In addition, 16499 operations (including 4185 cataract operations) were performed. Patients practically from all over Europe were receiving treatment at the Lviv clinic. According to the international statistics reported by Nagel, in the eighteen nineties, the clinic was ranked fourth in the world for the number of eye surgeries performed annually, and was outranked only by the Berlin, Amsterdam and New York clinics [11].

The department of ophthalmology (Medical Faculty at the Lviv University) headed by professor Machek provided ophthalmology education for medical students of the university and was also focused for preparing students for a career in the field of ophthalmology.

Professor Machek's major areas of research and clinical interest involved diagnosis, clinical picture and treatment of cataract, trachoma and ocular tuberculosis and roentgen localization of intraocular foreign bodies (1890). In addition, he described herpes iritis (1895) known currently as Machek's disease, and developed new plastic surgery techniques for ptosis in the upper lid (1913). Furthermore, he was the first in Galicia to perform surgery for cataract, and in 1886 he presented his modification technique of cataract surgery without iridectomy. Finally, he published several papers on the history of ophthalmology [5, 6].

An opening ceremony for the Eye Clinic (Medical Faculty at the Lviv University) was held on 2 February 1892. The event was very well attended, and Machek delivered an introductory lecture, Influence of Novel Research Techniques on the Development of Present-Day Ophthalmology (Wpływ nowszych środków badania na rozwój dzisiejszej okulistyki), in which he presented a program for the development of ophthalmology in

Lviv. This event marked the beginning of a new era in ophthalmology in Lviv, and laid the basis for the development of an eye surgery centre in this part of Europe.

During a subsequent twenty-three year period, Machek enjoyed combining his teaching activities with his work in the Department of Ophthalmology at the Regional General Hospital in Lviv, and succeeded in completely implementing his vision of clinical activities. The operation of the eye centre was in line with the Viennese model of clinical departments, which was rather efficacious as the functions and activities of these departments were mutually complementary. Machek founded the Lviv School of Ophthalmology, and taught such well-known scientists as A. Bednarski, V. Reis, A. Szulislawski, A. Musial, D. Drak, and T. Kicki [1]. In addition, he founded the Lviv Medical Weekly (Lwowski Tygodnik Lekarski) in 1906, and co-founded the Polish Journal of Biological and Medical Science (Polskie czasopismo nauk biologicznych i lekarskich) and the Advances in Ophthalmology (Postęp Okulistyczny). During that period he was the head of the Lviv Medical Society, the head and honorary member of the Galician Medical Association, the member of the Cracow Medical Association and Polish Medical Association (Warsaw branch), and co-initiator of Polish ophthalmology congresses.

Professor Machek published more than 100 articles in Polish and German, and many of them are still valid. He had held different managerial positions within the University, including Delegate of the Academic Senate of the Medical Faculty (1901-1903), Dean of the Medical Faculty (1905-1906), Deputy Dean of the Medical Faculty (1907), and Rector (1920-21 academic year), and became Professor Emeritus in 1928. He was awarded the Polish Restitution Order (Polonia Restituta) for his outstanding services [8, 9].

In his inauguration address delivered at the beginning of the academic year 1920-1921, rector of the Jan Casimir University, Professor E. Machek, said: "Today I want to stress one more time that freedom may suffer in the absence of education and science. To be courageous and strong, a nation must be educated..." [10]. He called himself a "generation-to-generation link", possibly because he lived during a period of change and innovation for ophthalmology.

A rather funny event occurred in 1915, when somebody spread false news about professor Machek's death in Vienna, and several newspapers published obituaries of him. This event occurred 15 years earlier than professor's death.

On July 31, 1930, Emanuel Emeryk (Emeryk) Machek died in the accident. We would like to end this article with a few lines from the Helena Olszewska-Pazyrzyna's novel describing the place the professor lived in:

"Throughout my time in Lviv I lived at 11 Akademichna Street, in the stone house of a famous ophthalmologist, professor Emanuel Machek, who was visited by patients not only from all over Poland, but also from Vienna and

all over Austria. Professor with his wife occupied the entire first floor, twelve rooms with a nice grape-shadowed balcony. There was also a small professor's private clinic, where sometimes some famous patients were followed after having cataract surgery (in which professor was outstandingly proficient)" [3].

Professor Emanuel Machek was buried at the Lychakiv cemetery in Lviv, and his grateful descendants always come and lay flowers on his grave to honor him.

#### **Selected works of Professor Emanuel Machek:**

1. Ein Fall von Hypertrophie der Plica semilunaris // Klin. Monatsbl. für Augenheilkde. – 1881.
2. Ein neues Verfahren zur Transplantation des Ciliärbodens. Plastik des Lidrandes // Zentralblatt für praktische Augenheilkunde. – 1897. – T. XXI. – S. 39-47.
3. Mowa inauguracyjna wygłoszona na otwarcie roku akademickiego. – Lwów, 1921. – 16 s. – Osobne odbicie z "Gazety Lwowskiej" Nr. 68 i 69 z dnia 24 i 25 marca r. 1921.
4. O sprawach lekarskich wiedeńskich // Przegląd Lekarski. – 1879. – N 1. – 13-14.
5. O uszkodzeniu narządu wzrokowego, powstałych poza linią bojową z wybuchu odnalezionnej amunicji // Polska Gazeta Lekarska. – 1922. – N 23. – S. 463-465.
6. O zmianie refrakcji oka w rozpoczynającej się zaćmie podtorebkowej. (Cataracta subcapsularis) // Polska Gazeta Lekarska. – 1922. – N 23. – S. 463-465.
7. Ogólny pogląd na nowsze teorie jaskry // Przegląd Lekarski. – 1883.
8. Plastyka wolnego brzegu powiekowego. Zabieg operacyjny przeciwko wzrostowi rzęs // Przegląd Lekarski. – 1897.
9. Statystyka jaglicy w Galicji // Pamiętnik VII Zjazdu Lekarzy i Przyrodników Polskich. – Lwów, 1895. – S. 349-351.
10. Wiadomości o zabiegach leczniczych weterynarzy w starożytności // Przegląd weterynaryjny. – 1905.
11. Wpływ nowszych środków badania na rozwój dzisiejszej okulistyki // Przegląd Lekarski. – 1899. – N 10. – S. 127-128.

#### **References**

12. Zimenkovskiy BS, Lutsyk OD, Bobrovnyk AD, Riznychok SV. [History and present day of science schools of thought in the Danylo Halytsky Lviv National Medical University: ophthalmological school]. Acta Medica Leopoliensia. 2005; 11(3):209-10. Ukrainian
13. Zimenkovskiy BS, Hzhchotskiy MR, Mahlovanyi AV et al, editors. [Department of Ophthalmology]. In: [Danylo Halytsky Lviv National Medical University]. Kyiv: Lohos; 2014. pp.177-9. Ukrainian
14. Olszewska-Pazyryzna H. [My Lviv microcosm]. Ī [Internet]. 2008;52. Available from <http://www.ji.lviv.ua/n52texts/olszewska.htm>. [Access: December 11, 2017]. Ukrainian
15. [Professor Emanuel Machek's file]. In: [State archives of Lviv Oblast. Repository 26, Desc. 5, Case 1229]. Ukrainian
16. Semenova G. [On the history of the department of ophthalmology]. In: Pavlovskiy M, Datsenko I, Petrukh L, editors. [Lviv State Medical Institute]. Lviv: Slovnyk; 1994. p.180-4. Ukrainian
17. Brzozowski SM. Emanuel Emeryk Machek. In: [Polish Biographic Dictionary]. Vol. 18. Wrocław 1973. p. 630-1. Polish
18. Koźmiński S. Słownik lekarzów polskich : obejmujący oprócz krótkich życiorysów lekarzy polaków oraz cudzoziemców w Polsce osiadłych, dokładną bibliografią lekarską polską od czasów najdawniejszych aż do 1885 r. Warszawa. 1888. 294 p.
19. Kronika Uniwersytetu Lwowskiego. T. 1:(1894/95–1897/98). Zest. Hahn W. Lwów. 1899 : 1–17.
20. Kronika Uniwersytetu Lwowskiego. T. 2:(1898/9–1909/10). Zest. Hahn W. Lwów:Nakładem Senatu Akademickiego c. k. Uniwersytetu Lwowskiego; 1912:14–15, 173–174, 350, 381–384, 668.
21. Machek E. Mowa inauguracyjna wygłoszona na otwarcie roku akademickiego. Lwów. 1921:1–16.
22. Machek E. Okulistyka we Lwowie w latach 1772 do 1927. Polska Gazeta Lekarska. 1928;17:316–318.
23. Skowrońska R. Machek, Emanuel (1852-1915), Ophthalmologe Österreichische Biographische Lexikon 1815-1950. 1972; 5 (25):393.