

Motto: "...Work, Sincerity, Silence..."

REMEMBER GHEORGHE MARINESCU (1863–1938) PIONEER AND FOUNDER OF THE ROMANIAN SCHOOL OF NEUROLOGY

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The celebrated personality of the well-known Romanian scientist GheorgheMarinescu must not be forgotten. 80 years have passed since the passing of the founder of the Romanian school of neurology and his work is still relevant for the modern medicine. His discoveries in the clinical, histopathological and lab research fields are considered classics in the neurological sciences. We must not forget his contribution to the first medical documentary. The Romanian school of neurology and neurosurgery pays tribute to this great international personality whose work and accomplishments still lights the road to knowledge.

Key-words: Gheorghe Marinescu, neurology, Romanian medicine, history.

LIFE AND EDUCATION

"In our country there should be no young man, student, doctor, biologist nor a man who wishes to have a general culture and to know our countries cultural development that will ignore the life of this exceptional man. Indeed, it's about an extraordinary man, whose work represents the fruit of the nation's genius."

Acad. C. I. Parhon (1874–1969)
about Gheorghe Marinescu.

Recognized today as the father of Romanian neurology, Academician Gheorghe Marinescu (1863–1938) (Figure 1) is one of the Romanian personalities who advanced considerably the medical sciences both nationally and internationally.

He was born in 19th century Bucharest in a modest family from MahalauaArhimandritului. Being raised without a father, he tried to respect his mother's wishes to become a priest and so he joined the Central Seminaryof Bucharest at only 9 years of age in 1874. After graduating it, the need to research physical phenomena drove him to change

his career path but remained a devout Christian throughout his entire life [1,2].

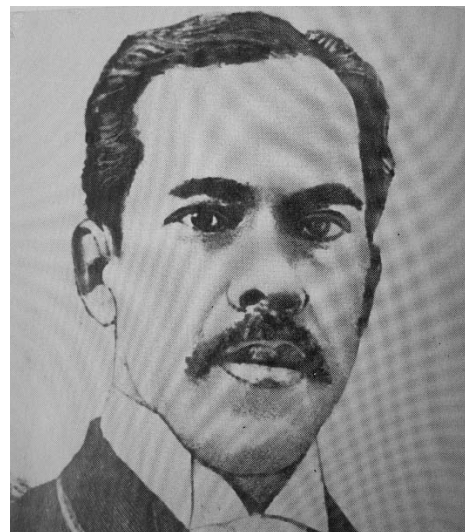


Figure 1. Gheorghe Marinescu, 27 years old.
(*Gheorghe Marinescu, Corespondența 1889–1928*,
Marinescu M, Bratescu Gh, Editura Științifică, 1968)

Why he chose this path is clarified in his book "Lourdes and Maglavit" [3]:

“Faith and science, although with a common origin, differ through their character, because, the first one is dominated by affectivity and the second by the need to question, observe and experiment, and even reproduce natural phenomena. The first one, under the form of religion, is addressed to the crowds, I would say humanity, because there is no nation without a form of religion. Science, from the contrary, is more or less the attribute of a small number of people which enjoy its benefits. In any way, faith and science are attributes of the human being, they evolve in time and space, and the environment and the culture in which the man lives have a huge influence in their development.”

“The scientific medicine did nothing more than to perfect the religious medical or magical practices”

In 1882 he enrolled to the Bucharest Faculty of Medicine and at the same time at the Bucharest School of Bridges and Roads. He frequented the latter only for a year dedicating the rest of his life to the study of medical sciences.

The foundation of his career was set by the start of his apprenticeship in Prof. Victor Babeş (1854–1926) laboratory of bacteriology and pathological anatomy in 1888. There he had the extraordinary opportunity to be part of the team of doctors who studied Mihai Eminescu’s brain for research purposes in 1889. The organ was sent for analysis by psychiatry professor Alexandru A. Sutu [2].

Gheorghe Marinescu was recognized next year by his student colleagues for his character, work ethic and involvement who appointed him the President of the Society of Medical Students. In the same year, 1889, he departed for the Paris School of Medicine where he was soon accepted to study neurology under Jean-Martin Charcot (1825–1893)

at Salpêtrière Hospital, thanks to the recommendations from Prof. Victor Babeş. At Salpêtrière Hospital he had the opportunity to meet the renowned neurology pioneers of the time: Pierre Marie (1853–1940), Joesph Babinski (1857–1932), Gilles de la Tourette (1857–1904) and Paul Oscar Blocq (1860–1896), etc. He maintained correspondence with them throughout his entire career and continued to collaborate with them in different research projects [4].

With a taste for adventure and numerous recommendations from his mentors, Gheorghe Marinescu, began his pilgrimage to the rest of the renown European Schools of Medicine. He traveled to Germany and Belgium for two years (1890–1891) and in 1896 to England, Belgium, Holland and Italy. In those countries he engaged in multiple medical activities such as [1,4]:

- presenting his work on hypertrophic pituitary gland in acromegaly at the International Congress of Medicine in Berlin together with Pierre Marie in 1890;
- working in the Berlin Institute of Physiology chaired by professor Du Bois-Raymond (1818–1896) after which publishing together with Prof. I. Gad a study of the bulbar respiratory centers in 1892 [5];
- becoming co-author of a histopathology atlas edited by P. Blocq and V. Babes in 1892 [6];
- receiving an award together with Serieux from the Belgian Royal Academy for their work in epileptics asylums;
- being invited as chairman at the International Congress of Medicine in Moscow, while being just a medical student, in 1897 (Figure 2).

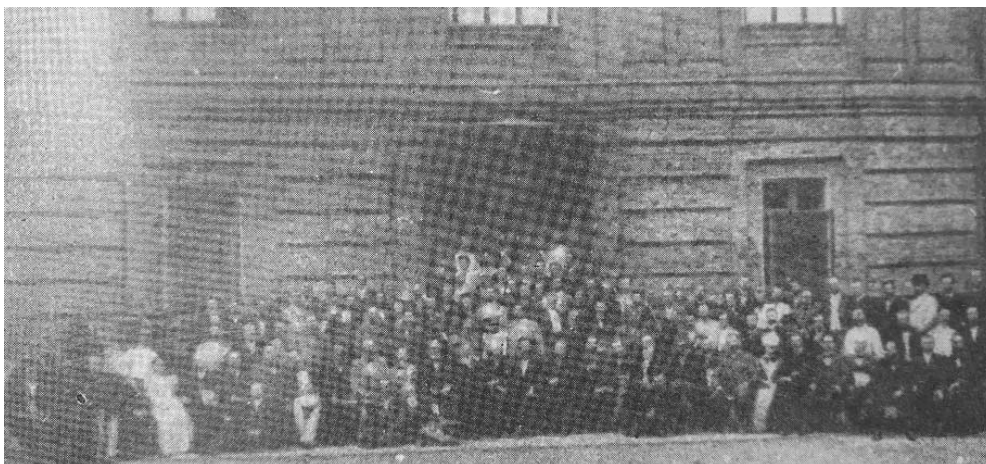


Figure 2. Group Figure of the Attendees of the International Congress of Medicine in Moscow, 1897. (100 ani de la naşterea lui Gheorghe Marinescu, Kreindler A. et al., Bucureşti, 1963)



Figure 3. Gheorghe Marinescu in his laboratory (public domain).

After graduating from the Paris Faculty of Medicine in 1897 with the completely original dissertation paper *Main succulente et atrophie musculaire dans la syringomyelie* [7].

He was offered to be the Chief of Nervous Disease Department from St. Pantelimon Hospital in Bucharest (Figure 3). A year later he became professor at the Nervous Disease and Electrotherapy Department of Bucharest Faculty of Medicine. In 1899 was nominated correspondent of the Romanian Academy at just 36 years old.

In August 1903 he began his life as a family man by marrying Mrs. Olga Vasilescu.

INTERNATIONAL PIONEER AND NATIONAL ROLE MODEL

[...] You know how much admiration and gratitude I always had for You and I wish to express those feelings again here [in this letter – Ed.] more alive than ever. – Fragment from a letter from George Enescu (1881–1955) to Gheorghe Marinescu 24 November 1931.

His work was rich and numerous. His studies over the pathology of the neuron, his magnifique analysis of the nervous system's senescence, his research on neurofilaments and many other interesting works will remain as definitive acquisitions for science.” S. Ramon Y Cajal (1852–1934).

Once he settled in Romania at St. Pantelimon Hospital in 1897 he began his true work on neurology, of course in collaboration with numerous colleagues from abroad.

As a corresponding member of the Romanian Academy, he pushes the Romanian medicine towards

the future. In 1906 he held the welcome speech of the Annual Romanian Academy Congress entitled *Progresses and trends of the modern medicine*.

After the Lumière brothers European tour meant to show their unique moving pictures to the public and record new ones which started in 1896 and included Bucharest in 1897, Gheorghe Marinescu was inspired by them to purchase his own camera and use it to study neurological subjects in the same year (Figure 4). And thus, the first Romanian camera crew was composed of Dr. Gheorghe Marinescu (stage director), two assistants Dr. Constantin Ion Parhon, Dr. S. Goldsetin and the cameraman Dr. C. Popescu (his interns) [8].



Figure 4. Cinématographe Lumière, the first video camera in the world (Public domain).

The stage was set in St. Pantelimon Hospital's yard, where they set up a large black screen as a background and the patients walked in front of the screen either naked or wearing white garments in order to enhance the contrast (black and white imagery). Some assistants wore national costumes while guiding the patients in front of the camera. Patients were often filmed in groups as pioneered

by Charcot in order to compare the archetypal types to the atypical ones (Figure 5). He filmed 3 movies of his patients and the with the help of Jean Neylies who sketched the patient's postures frame by frame published 5 studies between 1899 and 1902 about the use of cinematography in neurosciences which offered him international recognition [8,9,10,11].

The papers published in *La Semaine Medicale* about his use of the camera drawn the attention of Auguste Lumière himself who wrote two letters of appreciation to Gheorghe Marinescu in 17 January 1922 and 29 July 1924.⁴This makes him the only

Romanian to ever receive a compliment the Lumière brothers.

Passionate about new methods of research and diagnosis techniques, G. Marinescu was the first to take a radiograph of a hand pertaining to a patient with acromegaly in 1896 [12]. In 1923 he invited at the meeting of the Committee of Intellectual Cooperation from Geneva where many other famous scientists were invited –such as: Marie Curie (physicist and chemist, Nobel Prize recipient) and Henri Bergson (philosopher, Nobel Prize recipient) were present [4] (Figure 5).

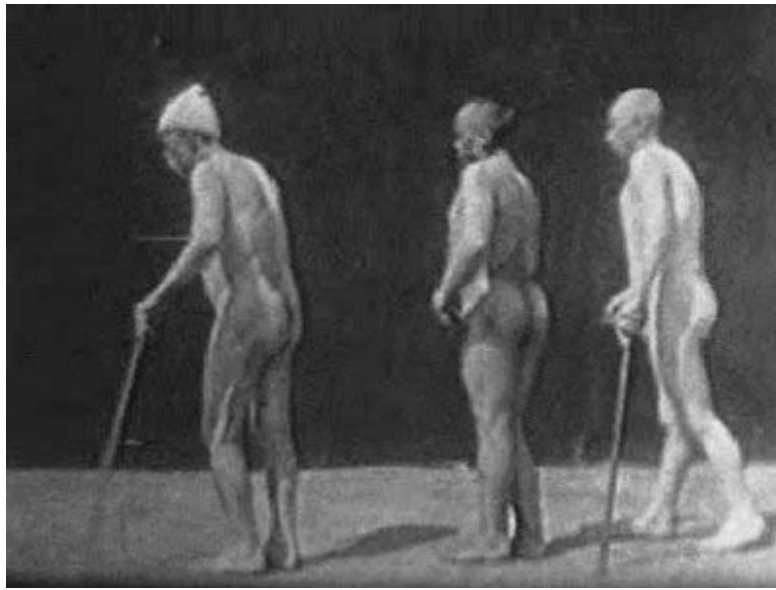


Figure 5. A frame from the film “Walking problems in organic paraplegia” by Gheorghe Marinescu *et al.* [10]



Figure 6. The Committee of Intellectual Cooperation. Arrows: Marie Curie and Gheorghe Marinescu
Gheorghe Marinescu, Corespondența 1889–1928, Marinescu M, BratescuGh, Editura Științifică, 1968.



Figure 7a (left). 1962 Commemorative Romanian Postal Stamp.
Figure 7b (right). 2013 Commemorative coin by the National Bank of Romania.

Interested in the correlation between signs and symptoms and the state of the nervous system, Gh. Marinescu described and completed the description of many reflexes and syndromes. In the case of the already known Babinski sign, he showed that not only the destruction of the pyramidal tract can produce the reflex, but also its compression [1].

In collaboration with A. Radovici he described the palmomentonier reflex in motor neuron disease. Marinesco–Sjögren syndrome is another example of G. Marinescu’s work. The syndrome is a rare autosomal recessive neurological disorder that causes cerebellar ataxia, mental retardation, congenital cataracts, muscle weakness, inability to chew food, thin fingernails and scanty hair. Gh. Marinescu in collaboration S. Draganescu and D. Vasiliu with described for the first time in 1931 four patients (four brothers) with onset of cataracts from 2 years of age, progressive retardation and cerebellar-extrapyramidal syndrome. They also correlated those findings with degenerative changes in brain biopsy. Further work by Sjögren and Garland in 1950 led to the final description of this syndrome [14,15].

In the field of neurosciences, Gh. Marinescu’s main focus was the study of neuronal pathology. In 1909 he published the treaty “La cellule nerveuse”, was prefaced by Ramon y Cajal, which represents a quintessential paper for neurology even today. He described the presence of two types of synapses: axo-somatic and axo-dendritic who have different roles in excitation and inhibition [16]. G. Marinescu was the pioneer of the concept of neurophagia and after multiple studies observed the correlation between oxidative stress in the neuron and its aging [1].

He died in 1938 in Bucharest. On his grave stone is encrypted “...Work, Sincerity, Silence...” (a quote from Scottish philosopher Thomas Carlyle). He was appreciated during his entire life both

internationally and nationally (Figure 7a,b). Thirty-six science forums appointed him as honorary member. Amongst them, he was member of many famous academies such as: Romanian Academy, Paris Academy of Medicine, Halle Academy of Sciences, Buenos Aires Academy of Medicine, Madrid Medical Academy, Maryland (Baltimore) Academy, etc. He was also member of over 10 Neurology and Internal Medicine Societies from: Paris, Prague, Wien, Berlin, New York, Warsaw, Rio de Janeiro, Buenos Aires, London, Philadelphia etc [4].

CONCLUSIONS

The disappearance of such a complex, encyclopedic personality represents a huge loss for both Romanian and international medicine. The complex neurological examination and the correlation of the entire array of neurological signs and symptoms in order to obtain a complete and correct diagnosis represents the key trait of Acad. Gheorghe Marinescu. The gathering of these exceptional clinical data and a renown scientific drive through the multiple publications in the entire world is specific to a great doctor and scientist: Gheorghe Marinescu.

For the Romanian medicine, he represented the key element in the foundation of the first school of neurology and his works remained as classics in this difficult in still not entirely known field.

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