

VINTILĂ CIOCÂLTEU (1891-1947): PHYSICIAN, BIOCHEMIST, POET AND PROFESSOR

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Abstract

Among the ambassadors of Romanian science and culture, we include the doctor Vintilă Ciocâlțeu. Along with Victor Babeș, Nicolae Paulescu and George Emil Palade, Vintilă Ciocâlțeu contributed further, by the reagent which he prepared together with Otto Folin, to the completion and deepening of the knowledge of cell biology within the medical agricultural, horticultural research or industrial chemistry.

A multi-faceted personality, V. Ciocâlțeu was also a remarkable poet, who entered into an unjust and hopeless conflict with the communist regime. Just like many of his compatriots, he was deleted from medical or literature books, was expelled from the department of Medicine in Bucharest and was charged with offences that he did not commit. But his name could not be deleted from the laboratory methods which used - the Reagent Folin-Ciocâlțeu!

Today, doctor Vintilă Ciocâlțeu continues to promote the fame of the Romanian medicine in the world.

The name of Vintilă Ciocâlțeu is better known abroad than in his country!

This is the conclusion you reach when you find out that his “*Protein Measurement with the Folin Phenol Reagent*” published by Oliver Lowry in 1951, in the Journal of Biological Chemistry is considered the most quoted scientific paper in the world, being used in documentary work nowadays, by about 228,000 of reviewers or researchers (the author uses even from the first page the devoted term “*Folin-Ciocâlțeu phenol reagent*”).

About Vintilă Ciocâlțeu the poet, we know very little altogether despite the fact that in 1935, he competed on an equal footing with Lucian Blaga, George Bacovia, Vasile Voiculescu or Otilia Cazimir for the great award of the Romanian Academy .

Vintilă Ciocâlțeu was born in 1890 at Plenița, in the Dolj district, in the house of the teacher Mihai Ciocâlțeu. He attended high school in Craiova, and he graduated the Faculty of Medicine “Carol Davila” of Bucharest in 1920.

He stood out as a student by the passion and rigor with which he solved the practical work and the wealth of data gained from the bibliographical study, surprising his teachers during exams with his answers. Thus, he earns the right to be elected chief of the medical students in the university. He works during 1915-1920 as intern of

Eforie Hospitals in Bucharest, under the guidance of some famous doctors: Thoma Ionescu, Ernest Juvara, Gheorghe Marinescu and D. Gerota. After graduating university, he goes to Berlin in 1920 and specializes in biological chemistry, with the teachers E. Salkowsky (Salkowsky test to determine cholesterol), Leonor Michaelis and Peter Rona (medical chemistry textbook authors).

In the country, his activity is noticed by the scientist Ion Cantacuzino and teacher D. Danielopolu and is given the references required to obtain a Rockefeller scholarship. He arrives in 1925 at Harvard Medical School and becomes a collaborator and close friend of Otto Folin (father of medical biochemistry, 1867-1934). The professor Otto Folin, Head of Department of Biochemistry, encouraged his young research assistants, who arrived in America through the Rockefeller scholarships, forging lasting friendships with them.

The collaboration between the American professor and the Romanian physician was perfect, the founder of modern biochemistry, Otto Folin, said about the Romanian, “I know him very well. He is an enthusiastic researcher, tireless, with a lot of critical spirit and of an absolute honesty. I shall have perfect confidence in anything he will publish in the future.”

Vintilă Ciocâlțeu was part of the so-called “**Boston Harbour Group**” (so named because on weekends they went fishing in the Boston Harbor), along with other young researchers who in turn will become famous: Yellapragada Subbarao, scholar of Indian origin (1895-1948, found the

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mechanism of muscle contraction), and James Sumner (1887-1955, Nobel Prize for pioneering research in enzymology). In the two years during which he worked in the laboratory of Otto Folin in Boston. 1925 to 1927, Vintilă Ciocâlțeu gained international recognition by making the "Folin-Ciocâlțeu Reagent". The technique of serum dosage of proteins from the serum and other cell hydrolysates or highlighting proteolytic enzymes of the phenolic compounds and other antioxidants, are currently carried out with Folin-Ciocâlțeu. This is a remarkable Romanian contribution to the development of medical biochemistry, paving the way for functional assays at the cellular and molecular level in early detection and preventive treatment of diseases, nowadays the use of *RFC* today expanded in pharmaceutical, agricultural, food and industrial fields.

His rise in career continued, and after returning home he insisted on extending the research in medical chemistry, either as chief lecturer at the Medical Clinic I in Bucharest or university lecturer and university lecturer at the Faculty of Medicine in Bucharest (1931). In fact most of the works published by the scholar belong to Medical biochemistry. His bibliography includes a work of internal medicine, *Uterine fibroids*, published in 1919, while the rest of his work is devoted to numerous researches devoted to cellular chemistry: *The ammonia - the cause of uremic phenomena (colab. 1923)*; *Statistical notes on glycosurie phloridzinique (colab. 1923)*; *Quantitative determination of the tryptophane through the reaction Adamkiewicz-Hopkins (1946)*; *Aspects referring to the complex combination between copper trinitrosorciniquet and tryptophan (1947)*.

In 1938 Vintilă Ciocâlțeu became Professor of General Chemistry, Faculty of Medicine, and in 1941 Dean of the Faculty of Medicine of Bucharest. Under his leadership, the subject of general medical chemistry becomes the medical biochemistry of today). Vintilă Ciocâlțeu campaigned for performing a minimal set of biochemical investigations, together with standardization and harmonization of analytical methods in health network. The medicine of the early XX century was based on the anatomo-clinical diagnosis and very little on the paraclinical diagnosis. With a strong knowledge of the cellular physiological processes as well as Western medical experience, V. Ciocâlțeu opened in 1932, with his wife, Cornelia Ciocâlțeu a modern medical laboratory of analyses in the Rosetti Square in Bucharest.

This is the professional side of the physician and scientist, during the great period of his destiny! The other side is the literary, artistic, of the guessed but unspoken truths; the scientist found the solution to express them metaphorically without barriers to rational thinking. In the poem "Silence" (1934) the author tries to define himself: "I raise the world just like Atlas, from the pages the Little Infinite in Space the great nothing!".

Proud and enterprising nature, but also stubborn, he

follows his own way, despite the advice of his wife and that of some colleagues.

His literary debut in 1925 in the magazine "Thinking" where he publishes the poem "Alone"; the poem will appear in the booklet "Deep hardened" in 1932. In 1934 he publishes a new volume entitled "Poems". "Thinking" was a cultural magazine of traditionalist nature in interwar Romania. Around the journal run by Nichifor Crainic, the ideological current of "Thinking" was formed, which closely got together important names of Romanian culture: Octavian Goga, Ion Barbu, Lucian Blaga, Mateiu I. Caragiale, Oscar Walter Cisek, Radu Gyr, Vasile Voiculescu, Tudor Vianu and others. Sociable by nature, V. Ciocâlțeu is close to the circle of intellectuals from the magazine "The Morning Star", a good friend of Octavian Tăslăuanu, which he called "animator of the entire generation of The Star", editor and director of the magazine, a promoter of Romanianism in the world. In 1935 he takes part in the competition for the Grand Award of the Romanian Academy for poetry (worth 100,000 lei) with Lucian Blaga, George Bacovia, Vasile Voiculescu, Otilia Cazimir and others. The award is won by Lucian Blaga. The Writings of V. Ciocâlțeu have not gone unnoticed by critics of the Romanian literature. Both G. Călinescu and E. Lovinescu consider him as a poet of "Wallachian expressionism", an elitist voice; the poet was considering the "desert of life", "deep hardened" and contrasts them the certainties of science, using irony and sometimes eliminating the divinity solution: "*Meteors extinguished in time, Flames light and it rains, Black gold over fields, Old Clay new life (Midnight, 1934)*; *Come reader, close the book, And sleep, it's time to rest, Why should you learn what spin death yarns, When life is full of stories*" (Afterword, 1934). I already mentioned before that in the family, the doctor was more supported than the poet.

Understandably so, as the wife Cornelia and son Vintilică were also doctors. Aware of the knowledge capital and human ideas of the man around whom they lived, they were less sympathetic with the meetings of the literary circle and the meetings at the Writers House, whether it was D. Barbilian or O. Goga! His wife, Cornelia Ciocâlțeu, came from a family of intellectuals from the Drăgănești of Olt. Her parents, Ioan Mihăilescu and Athena Mihăilescu were in 1890 teachers in the only school in the Drăgănești of Olt. The County of Oltenia included before World War I "Banatul Craiovei" having social Administrative center at Craiova. The teacher Mihail Ciocâlțeu of Plenița and Professor Ioan Mihăilescu from the Drăgănești of Olt met through their professions, long before their children. The discussions between parents encouraged marriage even since they were students, their only child, Vintilică Ciocâlțeu, was born immediately after graduation, in 1921, in Berlin.

A scientist full of ideas, bold and inspired poet, but naïve in contact with the political reality and the social changes after 1944! The establishment of the Communist regime meant complete and systematic elimination of elites and changing values radically, the only thing that mattered was the social background and commitment to Marxism. Important discoveries were overlooked because they were not to the liking of the new authorities. The Professor Vintilă Ciocâlțeu was on the list of people who were not liked. Very soon, in 1945, he is changed from the position of dean. In his place, despite pressures, another great scientist was chosen, Gr. T. Popa (who discovered in 1930, with Australian Una Fielding, the port hypothalamic-pituitary vascular system).

Then, for two years, he was continuously harassed and accused of contacts he had in the Western world or memberships with the Legion rulers. He did not have time for politics, and correspondence with scholars from abroad was essentially for research purposes.

Beginning with 1947, he was asked for the resignation from the position of head of department. As he did not like detours and ambiguities, he requested again explanations from the Faculty management. Gr. T. Popa (in turn, purged and hunted by Communist commissars, is sacked in 1947 and died under house arrest in 1948), called for the faculty senate. In front of a fearful and silent audience, Vintilă Ciocâlțeu does not find another fault for himself than that of presenting his name in the history of medical biochemistry! By the end of his appeal there were not any applauses or whistles, and many familiar faces there hurried to leave the room. The disappointment, after two years of tension and false hopes must have been huge.

At that very moment a stroke was triggered, the scientist crashing over the council table. He died at the age of 57 years leaving behind both the scientific and literary work unfinished (Poems in manuscript and studies involving tryptophan in the biosynthesis of chemical mediators of nerve impulses). Unfortunately, his son died 10 years later in 1957, and his wife in 1961.

It remained however a “bottle” with a clear yellow solution, which will soon turn 88 years of “career” in laboratories around the world.

“I will raise the world like Atlas” ... Certainly by this metaphor Vintilă Ciocâlțeu perfectly defined himself, his work being a notable contribution to the progress of science and especially medical science.



1. Personalities of Romanian medicine:

- Dr. Cornelia Ciocâlțeu (1890-1961), wife of Vintilă Ciocâlțeu (first of left);
- Dr. Hermina Walch Kamischi (1864-1946), first manager of the State School of Nursing, founded in 1913;
- Dr. Nicholas Hortolomei, Chief of surgery at the Hospital Clinic Colțea, Professor at the Faculty of Medicine;
- Professor Gr. T. Popa, discoverer of the hypothalamic-pituitary tract (near V. Ciocâlțeu);
- Dr. Vintilă Ciocâlțeu, coauthor of the Folin&Ciocâlțeu Reagent (near Trancu Martha Rainer);
- Dr. Marta Trancu Rainer (wife of Fr. Rainer), first female surgeon in Romania, personal physician of Queen Mary;
- Dr. Francis Rainer, anatomist and anthropologist world-renowned Professor Department of Anatomy, Faculty of Medicine, Bucharest (right).



2. The Ciocâlțeu family at Mrs. Ciocâlțeu's brother's wedding (1921). Mrs. Cornelia Ciocâlțeu (first on the left), her father Ioan Mihailescu and professor Vintilă Ciocâlțeu in the back, Laurentiu Steinebach, administrator of the royal stables, his daughter Ella and colonel Mihailescu.



3. Vintilică Ciocâlțeu (1921-1957), physician at Colentina Hospital in Bucharest. The photo was taken in 1927 at the family home in Stone Street pit, no. 5, sector 1, Bucharest .

*Photo archive contains copies of original photographs held by the authors of this article.

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