

CONTRIBUTION TO THE HISTORY OF SCIENCE. MEMORIES ABOUT PROF. ACAD. CONSTANTIN MOTAȘ (1891 – 1980)

ȘTEFAN NEGREA, ALEXANDRINA NEGREA

Abstract. *Prof. Acad. Constantin Motaș was and remains for the posterity one of the most important personalities of the Romanian and European Biology. The authors present, firstly, his life and work, then, a series of memories from the period of 1956 – 1980, years spent beside the scientist within the framework of the “Emile Racovitza” Speleological Institute and then, until his death.*

Keywords: *Constantin Motaș, life and work, memories.*

Rezumat. Contribuție la istoria științei. Amintiri despre prof. acad. Constantin Motaș (1891 – 1980). *Prof. Acad. Constantin Motaș a fost și rămâne pentru posteritate una dintre cele mai proeminente personalități ale biologiei românești și europene. Autorii prezintă, mai întâi, viața și opera sa, apoi evocă o serie de amintiri din anii 1956 – 1980, ani pe care i-au petrecut în preajma savantului în cadrul Institutului de speologie “Emil Racoviță” și, după aceea, până la moarte.*

Cuvinte cheie: *Constantin Motaș, viața și opera, amintiri.*

LIFE AND WORK

Born on 8/20 July 1891 at Vaslui, C. Motaș followed the primary school and two classes at the gymnasium “Mihail Kogălniceanu”. He moved to the National High-school from Jassy in the second grade, where he was a colleague of the writer Cezar Petrescu and the actor Ion Manu. Even in high-school, he had shown his love for nature, an inclination for the sciences of nature and his talent as a painter. Qualifying for higher studies with “very good” (1911), he entered the Science Faculty from Jassy, where he studies with a series of brilliant professors, among which Paul Bujor, Ion Simionescu and Ion Borcea. After his degree (1915), he was named substitute assistant at the Zoology Laboratory of the faculty, led by Prof. Ion Borcea. During the First World War (1916 – 1918), he was an aviation officer. In 1921, he became chief of zoological applied works, and in 1925, substitute lecturer at Applied Zoology and Pisciculture. In parallel with his didactic activity, C. Motaș published, in 1923, the first paper concerning the hydracarians of Romania. Through his profound study of this aquatic arthropod study, he will become over the years, a world authority in this domain.

In 1920, obtaining a scholarship abroad by competition, C. Motaș worked firstly at the Zoological Institute of the Basel University (Switzerland) with professors F. Zschokke and C. Walter, then at the Institute of Pisciculture and Applied Hydrobiology of the Grenoble University (France). Here, he prepared under the supervision of Prof. Louis Léger, his thesis: “*Contribution à la connaissance des hydracariens français, particulièrement du sud-est de la France*” (374 pages). His diploma title of the Hydrobiology and Pisciculture High Education (1926) and the doctoral degree in Natural Sciences with a state diploma and the mention “très honorable, avec les felicitations du jury” (1928) made him an acknowledged personality in the domain of Zoology and Hydrobiology.

After his return in the country, C. Motaș continued his didactic and scientific activity at the Science Faculty from Jassy. In 1930, he was promoted docent in Zoology and full lecturer. In 1932, he was named aggregate in Applied Zoology and Entomology at the faculty of Agricultural Sciences from Chishinev and in 1936, as a professor at the same cathedra. Between 1936 – 1940, he was a probation professor of Descriptive Zoology, and from 1937 as titular professor at the Jassy Science Faculty. In the same time, he had a course in General Biology at the Normal Superior School from Jassy (1939 – 1940). Between 1940 – 1949, he was professor of Zoology at the Bucharest University. His intense didactic work materialized itself in courses and laboratory based on coloured plates and original drawings. The clarity and the logic of his courses, his talent in filling blackboards with drawings and diagrams in coloured chalk, the charm and vivacity of his speeches, attracted many students even from other faculties.

His untiring work as a university professor did not stop his scientific researches. After he returned from France, C. Motaș worked in three domains: Hydrobiology, Pisciculture and Entomology. Being a good organizer of the scientific research institutions, he proved to be a worthy successor of his predecessors: Ion Borcea, as director of the Natural History Museum from Jassy (1936 – 1941) and at the “King Ferdinand I” Marine Zoological Station from Agigea (1937 – 1941), of Prof. Andrei Popovici-Bâznoșanu as his successor at the cathedra and at the Zoological Station from Cumpătu-Sinaia (1941 – 1949); of Grigore Antipa, as a successor director of the Natural History Museum “Grigore Antipa” 1945 – 1949), of Emile Racovitza, as a director of the Speleological Institute, reorganized at nine years after the death of his founder (1956 – 1963). Everywhere, he left indelible marks, he organized and oriented the research and founded publications. As a specialist in hydracarians, he described, alone or in collaboration, hundreds of species, genera, subfamilies and new families. Together with his disciple, Victor Angelescu, C. Motaș published two fundamental papers: “*Valorification of the mountain waters*” (1939) and “*Hydrobiological researches in the basin of the Bistrița River (Eastern Carpathians)*” (1944), in which, he applied, for the first time in Romania, the modern research techniques learned in France.

At 15 May 1937, at the proposal of Emile Racovitza, C. Motaș was elected correspondent member of the Romanian Academy, while at 25 May 1948, at the recommendation of Dimitrie Voinov, full member at the death of Emile Racovitza, founder of the Biospeleology. In the same year, the Romanian Academy became the Academy of the Popular Republic of Romania, and on the members list, selected by communist criteria, C. Motaș was absent. As if this was not enough, on 21 May 1949, he was arrested for his anti-communist attitude, to be freed, after 7 years of heavy prison, on 25 April 1956. His quality, as a full member of the Academy, will be posthumously restored in 1990.

After his release, resuming his scientific activity within the Speleological Institute, C. Motaș formed a collective for the study of the phreatic waters. The results led him to the creation, in 1957, of a new branch of the Limnology, the *Phreatobiology*, and of a series of new ecological terms for the fauna of this subterranean aquatic environment. Among his many papers published in Romania and abroad on this theme, we mention the fundamental work, of nearly 400 pages, published in 1962, together with his collaborators Lazăr Botoșăneanu and Ștefan Negrea: "*Researches on the biology of the springs and the phreatic waters from the central part of the Romanian Plain*".

The scientific merits of C. Motaș were acknowledged abroad by his election as a member of some scientific societies and institutions, among which the International Society of Limnology, the Zoological Society of France, natural History Museum from Paris and the Pisciculture section of FAO. He was a member of the redaction committees of some international journals like "*Acarologia*", "*International Journal of Speleology*". He published over 500 papers in Romania and abroad, many of them in the "*Vasile Aadamachi*" *Scientific Revue* from Jassy, whose redactor he was from 1922.

A multilateral personality, with a vast culture, oratorical and literary talent, C. Motaș honoured his predecessors and contemporaries in Biology, warmly and charmingly describing them in conferences, papers and splendid books about them ("*Portraits of Naturalists*", 1960; "*Emile Racovitza*", 1969; "*Charles Darwin*", 1972).

The man C. Motaș was always at the level of the erudite scientist, the university professor and the accomplished orator. His civic courage, the perfect moral attitude, the authentic patriotism, his true friendship, optimism, healthy humour and fine irony marked his passage through our world "painting and poetry" were his only weaknesses, just like those of his disciple and collaborator Traian Orghidan.

MEMORIES, MEMORIES...

In the second part of our part, one of us (Șt. N.) will evoke some memories from the years 1956 – 1980, unforgettable years we spent beside the scientist: firstly, as researchers of the "Emile Racovitza" Speleological Institute, then, after his retirement, in 1963, as scientific disciples, collaborators and especially comrades in excursions through the country with our car. But first, let us see how we met.

During our years as a student at the Faculty of Biology of the Bucharest University – more exactly in 1951 – I was elected president of the first Hydrobiological Society for Students from Romania. In this quality, we spent daily some hours in the laboratory of the young lecturer Traian Orghidan who taught us this discipline. One day, I overheard without intention, fragments of a whispered discussion about a certain "Old Tică". I did not pay attention. In another day, I found a paper in which the authors, Jana Tanasache and Traian Orghidan, described a hydracarian, named *Phreatohydracarus mosticus*, a new, phreatobitic species, found only in Hunedoara. Being curious, I asked the Master (as we, the students, named Traian Orghidan): "*Why mosticus? Where does it come from?*" After he was sure no one hears him, he whispered to me: "*It comes from Old Tică, as we called Professor Constantin Motaș; he taught Zoology at our Faculty, but now he is in prison*".

In vain I tried to find out why he is in prison: the subject was tabu! Old Tică himself will tell me the reason, after some years, in one of our many excursions to the mountains when he was already retired and us biospeleological researchers in full ascendance. Our wives – Ștefănica and Didina – accompanied us in our excursions: four naturalists in love with the beauties of our country. As I supposed, it was a political reason: being in good relations with Titel Petrescu (P.S.D.R.), the incommode university professor had to be silenced. Only the pretext was missing. And one day, it was found. In the break of a course, an assistant asked him to give "a lion for Coreea", a country engulfed in a war of North against South. The Professor replied ironically: "*Why would I give?*" "*Because comrade Stalin said so*", replied the assistant. "*Who, the Apis ox?*", snapped the magister. It was enough: that night he was arrested. For seven years, he endured the communist prisons, beginning with the infernal Aiud. During those seven years, in order to avoid getting mad without books, pencil and paper, he kept his intellectual and moral condition by teaching his cell-mates oral Biology lessons and reciting from Eminescu, Baudelaire and other poets. In his turn, he learned there English. Among other horrific things, he told me that, a day after he got out of the prison hospital, he was ordered to wash the toilets and how, in a cell with a broken window, he woke up stiff, covered in snow and frost on his mouth. Also from his stories from our excursions (such a pity there were no means to record them), I have found out that the reason of his unexpected release after seven years of heavy prison, was an external one. Namely, the more and more powerful pressures made by the European zoologists and hydracarinologists, led by Karl O. Viets. That's why, in April 1956, Motaș was released from his cell, dressed in civil clothes and sent home. A few days afterward, he was received by the chief of the Communist Party, Gheorghe Gheorghiu-Dej, himself. After a few excuses for imprisoning him by "error", he proposed Motaș to choose between being again a zoology professor at the faculty of Biology in Bucharest or the director of the "Grigore Antipa" Museum of Natural History, a place had occupied before. Without hesitation, Motaș

declined both offers, asking instead to be appointed the director of the Institute of Speleology. Seeing the confusion of Gheorghiu-Dej, he explained that during his detention, a group of zoologists from the Faculty of Biology in Bucharest, passionate of Speleology, made by Margareta Dumitrescu, Traian Orghidan, Jana Tanasache and Valer Pușcariu (former assistant of Racovitza), are trying to reorganize, at a national level, the Institute of Speleology created by Emile Racovitza at Cluj in 1920 – an institute now in trouble after his death. The four had proposed a “central” in Bucharest and a “subsidiary” in Cluj, but their approaches had failed as they did not have a scientific personality to qualify as a successor to Racoviță. “*But now, immediately they have found out I was released – the professor ended his explanation – Orghidan came to me and asked me to be their director and I have accepted*”. Gheorghiu-Dej agreed with him. Thus, C. Motaș entered his office as a former convict barely released and emerged as the director of the Institute of Speleology. Or, as he will put it in a conference about Buffon held in 1957 at the Jassy University: “*I was in the dark and now I was made chief of the darkness*”.

The Institute of Speleology, in its reorganized form, was founded at 21 of June 1956. I was among the researchers selected by the director Constantin Motaș, together with his deputy Traian Orghidan and the chief of the Biospeleology section Margareta Dumitrescu. Coming to my post, I was burning to meet the famous hydrobiologist and hydracarinologist about whom I had heard so many things. The event took place two month later, on 13 September, when he returned from the marine Zoological Station Agigea, so dear to him. He no longer had the thick, yellowish moustache with twisted tips and he no longer smoked cigars – as he was appearing in a photograph taken immediately after his release from the prison. The bald head, with the white hair limited to a peripheric crown, the thick-framed glasses which enlarged his myopic eyes, the ever present lavalier – all gave him a distinguished appearance, that of a “classical” scientist. Talking with him, you could not but admire his erudition, his liveliness and healthy humour, the fine irony, all kept at 65 years just like in his youth, although seven were wasted in a cell. He was an encyclopaedic spirit, with an amazing memory (I listened to him reciting, for instance, “*Lucefărul*” and “*Scrisorile*” by Eminescu, with the enunciation and the intonation of an actor). He was prolific, up-to-date with his scientific and cultural informations. He was an excellent oratory and he painted on what he had with what he had in that moment. The result was dedicated to those around him. As a proof, I have at home many of his drawings and water colors made by him during the excursions done together in Bucharest (where he preferred the Botanical Garden and Expoflora from the Herăstrău Park) and in the country (where he preferred Sinaia, Bușteni, Cozia, Horezu and other localities in the piedmont of Oltenia).

I spent the first years at the Institute of Speleology beside Professor Motaș, Jana Tanasache, Lazăr Botoșăneanu and my wife, plus a dactylographer – all five in a room transformed in laboratory, in the building from Dr. Ștefan Capșa, near the Cotroceni Palace – the former rest and guest house of Queen Maria. As my place was beside the professor’s desk, I used fully his presence daily, except from Sunday, working from morning to evening, with a short lunch break. I have learned this working rhythm during my student years from our Master, Traian Orghidan, who, in turn, had learned it, as a student, than as an assistant, also from Motaș. Thus, the motto of C. Motaș, “*work is the most precious good of man*” was not an empty word. Only during the field trips (sometimes alone, sometimes accompanied by Motaș or Orghidan), lasting for a month, changed this rhythm. I do remember the first speleological campaigns. We did not have a nice “dowry” but we had the enthusiasm and energy of ten speleologists. What was the “dowry”? A “Molotov” truck with wooden boxes on which we slept, worked and ate. In these boxes, we kept the exploring materials and the protection equipment. Some thick cords, heavy hemp ladders with wooden steps, lamps with carbide with well-used bulbs, tents like sieves, ragged overalls, burnt in some places by the lamps flames, tired shoes, mining helmets. That was all. But what did we care? We were happy to explore and chart unknown caves and to study their fauna. We returned to the Institute laden with samples which we sorted and studied, side by side with Prof. Motaș, until late in the night.

Due to the fame of the great scientist and highly cultivated man which was C. Motaș, our laboratory saw and we met many people. For instance, I remember his former collaborator Victor Anghelescu, which came especially from Buenos Aires to see him again after tens of years. Or Ion Țuculescu, the famous painter who saw himself mainly as a biologist, a specialist on Protozoa and was proud about his monograph on Lake Techirghiol. In 1960, the professor introduced him to L. Botoșăneanu and me in order to collaborate on the fauna of the springs from the Romanian Plain and only his premature death, in the next year, stopped this project. In the end, we made this book on the springs and the phreatic waters from the Romanian Plain with the help of professor Motaș – a collaboration that honoured us and made us widely acknowledged abroad.

Sometimes, the professor was absent for days from the laboratory but we were not alarmed. We knew he was at home, working in peace at some paper. But if we needed an advice or a book from his personal library, we went upstairs, at the upper level, entirely occupied by the Motaș family (For those who do not know, it was not the Motaș family who was housed in the Institute but of contrary: until we got our own building, the Professor housed the Institute in the two rooms from the ground floor of his house. This provisory state will last for 18 years!). Entering his room, I was always finding him at his desk laden with manuscripts, books, revues, dictionaries. On the walls, there were pictures received from abroad and his own drawings and aquarelles. In this room he called me at the end of 1979, to give me the foreword I asked him to write for my book “*Prin peșterile lumii*” (“Through the caves of the world”). He wanted to give it to me personally so he would be able to tell me how much he had liked it, especially the pages evoking his childhood, pages he described as: “*There could not be a more beautiful writing. They show the author, being a*

Moldavian, as a very good narrator and an emulator of our great writer Ion Creangă”. Excited like a student after a difficult exam, I shook his hand and managed a few words of gratitude. I was not suspecting then how close his end was and that I will see him alive just once. What follows is absolutely original, being an excerpt from the personal diary.

Truly, on Thursday, 10 January 1980, when I visited him with Didina to tell him that my book was published, had a haggard look and breathed heavily. *“Dornescu thinks that the atrophy of the legs muscles has started: I am afraid I will paralyse”*, he told us. *“Do not listen to Old Dornescu, replied Didina, forgetting that the professor of Comparative Anatomy was younger than Motaș. Your cough will pass and, in spring, we will start gain the trips with our car”*. *“I would like to go even to Snagov or Băneasa”* he sobbed. As we left, I promised him I would come back on Sunday with the tensiometer and the first copy of my book with his foreword. *“At least in that way I will be published”*, wistfully commented the Professor, remembering the times when he published a lot. These were the last of his words and the last times we saw him alive. For on Sunday the Professor was no longer at home. On Friday he was hospitalized urgently with his wife at the clinic of the doctor Ion Emil Bruckner from the Colentina Hospital. His diagnostic was *“acute pulmonary edeme”*. Tuesday, 5 January 1980, at 19.00, a phone call jarred me from the microscope. It was Mrs. Motaș. Crying, she gave me the incredible news: *“Tică is gone he left me alone! He died today in my arms at half past 14. You are the first I am calling as Tică cared a lot about you, he saw you as his children. Give me an advice, what shall I do?”* Of course not only us, but the entire Institute, led by Traian Orghidan, rushed to her help. Friday, 18 January, the Professor Constantin Motaș, dressed up following the ancient way, left the building of our Institute following the road without a return to the Bellu Cemetery, the plot of the Romanian Academy, where, he rests beside his beloved wife, Ștefana, the granddaughter of the painter Octav Băncilă.

EPILOGUE

The Profesor C. Motaș is already remembered by the posterity as one of the most prominent personalities of the Romanian and European Biology. Disciple and follower of the famous Professor Ion Borcea from the Descriptive Zoology cathedra of the Science Faculty from Jassy and as director of the Marine Zoology Station from Agigea, C. Motaș was also appreciated by our great coryphaeus Grigore Antipa and Emile Racovitza. The destiny of this coryphaeus was that him was the follower of their creations: firstly he followed Gr. Antipa as a director of the Natural History Museum bearing his name, then, toward the end of his career, he followed E. Racovitza as a director of the Institute of Speleology which also bears his name. To support our affirmations, we quote the opinion of Gr. Antipa in relation to one of the leading works of C. Motaș, namely *“Valorification of the mountain waters”*, written together with Victor Anghelescu, famed Argentinian agronomist and hydrobiologist of Romanian descent. This is about one letter I only recently found out, sent by Antipa to Motaș at 16 September 1939. This is its content:

“My dear Motaș. Returning home from abroad, I have found Your beautiful book on the mountain waters which I wish to read in pace after I will finish my current work still unfinished because my trip (I was at Grenoble and there I thought about you with love). Three day ago, it was the turn of your book to be read and, I saw it was dedicated to me. A surprise both pleasant and flattering, as I know this attention comes from the heart and the beliefs of a competent person. I thank you with all my heart and please believe me I am happy to enjoy the consideration and the friendship of a person with the qualities which I so much appreciated along with Your scientific competence...I did not have the pleasure to meet Mr. Anghelescu which you choose as an “accomplice”. Please be my interpreter and send him my most sincere thanks. Yours devoted, Dr. Gr. Antipa.”

The last event that places Constantin Motaș among the great biologist of the world took place on 19 May 2005 at the Romanian Academy with the commemorative session at 25 years from the death of Prof. Acad. **Constantin Motaș**. The session was organized by the authors of these lines within the framework of the History of Science Division of the Committee of the Science and Technique History and Philosophy of the Romanian Academy. The following personalities spoke about aspects of the activity of the great biologist: acad. Petre Mihai Bănărescu (himself a world-wide famous biologist), prof. univ. Gheorghe Mustață (director of the the Marine Zoology Station “Ion Borcea” from Agigea), dr. Dumitru Murariu (director of the Natural History Museum “Grigore Antipa” and dr. Ionel Tabacaru (senior researcher I at the “Emil Racoviță” Institute of Speleology). Memories were recalled by Constantin Motaș jr. (the son of C. Motaș, who came from Paris especially for this event) and dr. Ștefan Negrea (then the chief of the Biospeleology Department of ISER and a close collaborator of prof. C. Motaș between the years 1956 – 1980). The final words came from dr. Cristian Goran (scientific director of the “Emil Racoviță” Institute of Speleology) who presented inedited papers from the “Constantin Motaș” archive from ISER.

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