

LUDOVIC MRAZEC, THE MODEL OF A PATRIOTIC SCIENTIST*

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Abstract. The article evokes the personality of Ludovic Mrazec (1867–1944), the founder of the Romanian Geological Institute, of the Mineralogy Department of the University of Bucharest, and of the Romanian Geological Society. He is the author of several treatises on mineralogy, crystallography, petrography of magmatic, metamorphic and sedimentary rocks. He opened new horizons for the mining industry and petroleum geology and organized the Third International Oil Congresses (1907).

Keywords: professor, University of Bucharest, mineralogy founder of institutions.

Résumé. L'article évoque la personnalité de Ludovic Mrazec (1867–1944), le fondateur de l'Institut Géologique Roumain, du département de minéralogie de l'Université de Bucarest et de la Société géologique roumaine. Il est l'auteur de plusieurs traités sur la minéralogie, la cristallographie, la pétrographie magmatique, les roches métamorphiques et sédimentaires. Il a ouvert de nouveaux horizons pour l'industrie minière et pour la géologie du pétrole et il a organisé du troisième congrès international du pétrole (1907)

Mots-clés: Professeur université de Bucarest, minéralogie, fondateur des institutions.

Today, underneath the Dome of the Academy, we are attempting to shed light on the life of a great Romanian scientist and patriot, Ludovic Mrazec, a century and a half after his birth. According to geologist Mircea Ilie (1957), who knew him well and who perhaps wrote the most beautiful memoirs about Ludovic Mrazec, the life of scientists can rarely be accurately conveyed by professional biographers, and it can only be properly given justice by those who knew them closely, by their colleagues and their students.

In June of 1964, when the Faculty of Geology at the University of Bucharest commemorated 20 years from his passing, I was a third-year student. In July of 1967, upon the anniversary of 100 years from his birth, I was an assistant in the Mineralogy Department he had created and I had the honour, both times, to be designated to speak on behalf of a generation that was having its first encounter with the geological sciences. The professors and distinguished academics that outlined the personality of Ludovic Mrazec through their interventions were then speaking from their first-hand experiences of the great professor. Today, yet another half-century later, neither his colleagues nor his students are among us anymore. The generation of geologists I am a part of is around 80 years old and we, those that had the opportunity to have our academic formation moulded by Professor Mrazec's former colleagues and students, now, in turn, have a duty to convey to future generations the testimonies of Ludovic Mrazec's direct disciples.

Two men, of very different social backgrounds, yet both very close to Professor Mrazec, have helped me better understand his personality. The first, Academician Dan Giușcă, a distinguished scientist in his own right, had been in turn Professor Mrazec's most favoured graduate assistant, teaching assistant, associated lecturer and senior lecturer, and the one person to whom he entrusted the completion of his final fundamental work: *The General Course of Minerals and Rock Formations*. Professor Giușcă was my own doctoral supervisor, and many a time, whilst I was presenting the thin sections of the rocks collected in the field to him under the microscope in his study, he would evoke

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moments of his mentor's life. The second, Ion Hedeşiu, was a Transylvanian peasant, tall and well-built, who had been a field liaison during geological prospecting. Brought into the Faculty of Geology as a laboratory technician, he had also become the trusted advisor of the solitary professor whom he would support with boundless devotion. When I joined the Faculty, he was acting Head of Laboratory Technicians. We would work late into the night, and old Hedeşiu – who lived in a room in the basement of the Faculty, – after checking on the laboratories and apparatuses, would come into the X-ray laboratory to light himself a cigarette and tell us stories about himself and his idol that had departed this world.

Last evening, I visited the Catholic section of Bellu Cemetery to lay a wreath of flowers at Ludovic Mrazec's grave. It was getting dark, the cemetery was deserted and a thick layer of snow covered the marble plaque that read "Professor of Mineralogy, Director of the Geological Institute" – to which was later added, to the honour of the Academy, a line mentioning that Ludovic Mrazec had also been the President of the Romanian Academy.

I remembered that those two people that I mentioned above were, together with a priest and two undertakers, the only people who attended Ludovic Mrazec's funeral. It is said that death can sometimes transform a life into a destiny. The destiny of Ludovic Mrazec seems akin to that of a King Lear bereft of country. It is hard to imagine that a man who had held some of the highest offices in the country – President of the Academy, Government Minister for Mines and Geology, the founder and director of the Geological Institute, the founder and Head of the Mineralogy Department at the University of Bucharest, the initiator of the Geological Society – would have come to such an end. Despite this, were Ludovic Mrazec to have been watching his own funeral from somewhere above, he would have surmised that it wasn't too far removed from the stipulations he had left in his will. He who had often listened to many emphatic speeches as Member of Parliament, had asked his peers not to hold any kind of speeches at his funeral, and that the money for wreaths and flowers be instead handed out to the poor.

On that day, the 9th of June 1944, the personal destiny of Ludovic Mrazec would dramatically intersect the destiny of Europe and that of the entire world. World War II was nearing its end. Over the previous five years, Death had had its hands full in Europe and across the world; yet, from April 1944, it had been busy in Bucharest as well. The images of destroyed and torched houses, filmed across various cities in the world and which the residents of Bucharest had only seen at the cinema now also included reels of well-known buildings in Bucharest. The bombing campaigns of the Anglo-American air force, which started with runs on the 4th, 15th, 21st and 24th of April, continued on May 2nd, 3rd in the lead-up to Professor Mrazec's death, and then later between the 9th–10th of August; they were followed by bombing runs by the German Luftwaffe on the 23rd of August. Through a tragic thread of fate, the rain of bombs would strike at all the places to which the life and career of Ludovic Mrazec had been tied, all the locations that represented the legacy he had laboriously built to entrust to posterity. During the bombing of Bucharest, roughly 5,500 people died, 3,500 were wounded, 5,000 homes were destroyed – among them, Mrazec's own house near Cişmigiu Gardens, which was completely levelled by the first bombings in April. With it vanished not only the money destined for the Mrazec Fund – which was intended to finance the technological modernization of the Faculty of Geology and which he had kept, according to testimonies from those close to him, in amongst the books in his library. The ensuing fire also consumed the manuscripts of his final works. Professor Mrazec spent the final months of his life in a sanatorium on the periphery of Bucharest, in horrible pain. The disease he suffered from was never fully diagnosed, and today would possibly be classified as a form of auto-immune disease, that particular category of maladies that modern medicine can neither explain nor cure. Originally a pharmacist by training, Professor Mrazec would concoct himself various combinations of medicine which, rather than helping, likely accelerated his demise. Ion Hedeşiu, who decided to remain in the bombed-out city while the vast majority of the population had either fled or taken refuge in bomb shelters, would travel daily to the sanatorium to ready Professor Mrazec's warm bath – the only way to ease his suffering – and took care of him until his final moments.

The 15th of April saw the bombing of the University of Bucharest. Large-calibre bombs and incendiaries destroyed the Faculty of Chemistry. The amphitheatre where Ludovic Mrazec had taught his first courses on Mineralogy to the students of the Faculty of Science as well as the laboratories found in the basement of the Faculty of Chemistry, where he had held his practical seminars, were completely destroyed. The fires spread to the Department of Mineralogy which housed Professor Mrazec's office, and to the Museum of Crystallography and Mineralogy in which he had collected valuable samples from Romania and from other countries he had travelled. The same Ion Hedeşiu put out the fires, gathered the exhibits up and stored them as safely as he could. It was later the opportunity of our generation to reorganize the Collections and to rewrite their labels; and among them, we found several older ones bearing the calligraphic writing of Professor Mrazec.

During the bombing runs of late April, the building on the corner of the intersection between Elisabeta Boulevard and Calea Victoriei – the headquarters of the Cartea Românească Publishing House – would also be destroyed. With it, the entire print run of the *General Course on Mineralogy and Rock Formations – The Constitutive Substances of Earth's Crust* – being a synthesis of Mrazec's research on minerals, rock formations and the way in which they constitute the natural resources of human societies – went up in flames. When I was asked to hold a course on Mineralogy by the Faculty of Geology, retired academician Dan Giuşcă invited me to his office, and presented me with the 10 remaining copies of Professor Mrazec's manual which had been sent to the Department by the publishing house as proof copies, and asked me to carefully safeguard them. I have with me today one of these rescued copies of Professor Mrazec's seminal work, which I will donate to the Library of the Academy, where it will take its deserved place. In the preface to the work, Ludovic Mrazec extends his thanks to his former associate, Dan Giuşcă, who would become a distinguished member of the Romanian Academy.

How cruel a destiny to have when not only life leaves you, but when you also get to see your life's work go up in flames before it! Especially in the case of a man who had dedicated all his time and energy to his profession and who, as Mircea Ilie (1957) wrote towards the end of the work he dedicated to the great professor, "had wanted to depart modestly, as he had lived, driven only by a desire for continuous and fruitful activity in the broad fields of Earth sciences for which he had sacrificed his family, his friends and his personal life."

Remembering these events, we are reminded of the close of Shakespeare's drama, *King Lear*, and in particular of the final remark before the curtain closes, that of the Duke of Albany upon the death of the unfortunate King: "We must bear the burden of these unfortunate times, and speak as we feel, not as we should." I will thus veer slightly away from the solemnity required of academic speeches, in order to add to that which we know that which we feel when evoking a scientific personality that was, at the same time, a person of rare character, entirely committed to the progress of science and of his country.

I have spoken about the life of Ludovic Mrazec in terms of the intersection of his personal destiny with the destiny of a world dragged into a horrible war. We can just as well view the life of the illustrious professor as the intersection between his personal destiny and our national destiny. This beneficial convergence began when, following a brilliant PhD at the University of Geneva, Professor Louis Duparc, who had supervised his research into the Mont Blanc massif, offered him the chance to remain at the University of Geneva as an assistant. After a year working at the Department headed by Louis Duparc, upon hearing that the Department of Geology at the University of Bucharest would be divided with the creation of a new Department of Mineralogy and Petrography, Ludovic Mrazec decided to return to Romania and honour the call for applicants. He easily won the competition – which was being organized by the University of Iaşi in order to ensure maximum objectivity in the selection of candidates – and became the first Professor of Mineralogy at the University of Bucharest.

This was the first moment in which he unveiled his vocation as a creator of institutions. He had the great opportunity to work for the betterment of the country at a time when Greater Romania was rapidly and radically being transformed. He was the founder of the Geological Institute, of the Romanian Geological Society, he organized International Congresses on Geology that, due to his international prestige, he was able to host in Romania. He opened new horizons for the mining industry and petroleum geology. He was a founder of institutions, which he created from the ground up almost from nothing. He was confronted with a lack of machinery, of adequate laboratories, of experienced people... and he surpassed these challenges with extraordinary energy and perseverance, managing to erect new buildings, to create new laboratories equipped with state-of-the-art technology, but most importantly to draw to his side scores of devoted people, young researchers who would each go on to have stellar careers.

For all of them, Ludovic Mrazec was a worthy role model. And he remains a role model to this day, because he successfully passed through all the phases that anyone who truly devotes themselves to science can ideally achieve. First, to become a specialist in a field in which you can then prove your brilliance. Then, to be able to perceive the connections between your discipline and those surrounding your direct field of study. After which, to be capable of understanding the complexity of the Ensemble of Sciences and finally to be able to envision the broader role of Science in human culture and civilization. Mrazec had gone through each of these phases, one at a time. Going through the extensive list of his scientific works, we can see how he gradually went from authoring treatises on mineralogy and crystallography to the petrography of magmatic, metamorphic and sedimentary rock formations; he unravelled the complexity of geological structures, later that of tectonic architecture, and ended his life by writing the history of Romanian geology, and the history of those institutions that he himself created and integrated into the social fabric, going from the solace of the library and laboratory to daring forays into the wilds of nature, accumulating along the way invaluable experience in administration and in politics. He was one of the last great representatives of what the Renaissance termed a *uomo universale*. Wherever he went, he managed to sow trust, engender competence and to harness the formation of excellent students. Under his tenure, through the doors of the Department of Mineralogy passed such personalities as Gheorghe Munteanu Murgoci, Popescu Voitești and Ionescu Bujor, who would later head research departments of their own – and all of whom represented the pinnacle of world geology at the time. Their combined prestige was enormous. The World Oil Congress, when held for the first time in Europe, was held in Romania. Gheorghe Munteanu Murgoci presided over the First World Congress of Pedology, also held in Romania. One of the best-known names in petrography in the 20th century, Albert Streckeisen, was a student at the Department of Mineralogy at the University of Bucharest. Ludovic Mrazec skilfully used the advantages gained by being a creator of institutions in his own country, which he served as a true patriot. He sacrificed his personal life on the altar of science, he gave up on having a family and on those lengthy and pleasant conversations with friends of the cultural elite of the time, in order to dedicate as much time as humanly possible to scientific research and to the creation of new institutions.

More difficult to understand today, perhaps, are his upright correctness and his reaction to the difficulties faced by a leader of an institution at the end of their mandate. At the time, the respective directors of both the Museum of the Romanian Peasant and the Museum of Natural Sciences lived within the institution itself, which they considered not only their creation, but also their home. When he was summarily pressured to retire from his position as Director of the Geological Institute, at the age of 62, Professor Mrazec left without further commentary and returned to the Department of Mineralogy he had built from the ground up. He was pressured to retire from there as well, and he then poured that same drive and determination into the workings of the Geological Society. Until he passed

away at the age of 77, he continued to compile the history of Romanian geology, and has left us with the most eloquent rendition of the initial 50 years of development of the science of Geology in Romania, to which he himself had greatly contributed from his earliest steps until the end of his life.

We often decry a lack of role models. Perhaps we should ask ourselves: What to do with them if they are already there? 54 years ago, when Professor Dan Rădulescu, the Chair of the Student Association of Mineralogy, asked me to share a few words at the commemoration of Ludovic Mrazec, I think, in my youthful enthusiasm, I said something about the flame of science that is handed down from generation to generation and which we, the youth, must endeavour to pass on in turn. A few years later, among the commemorative texts published on the hundredth anniversary of the birth of Ludovic Mrazec, the same Professor Rădulescu, our mentor – who, it must be said, had not personally met him – seized on an even more profound emotion: “that which Ludovic Mrazec had accomplished during his life and for a long time afterwards was to create a bridge between generations, one based not only on the passion for research but one that was also grounded on moral principles.” It is important to be a great scientist, but it is equally important to have a great character – to be someone in service of their ideals, and not just use them as a means to an end; someone that serves the institutions they are a part of, and does not merely make use of them. I believe that this is the moral legacy that Ludovic Mrazec has left to future generations.

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