



**Professor ECATERINA CIORĂNESCU-NENITZESCU
(1909–2000)**

*Dedicated to the memory of
Professor Ecaterina Ciorănescu-Nenitzescu (1909–2000)*

CENTENNIAL OF ACAD. ECATERINA CIORĂNESCU-NENITZESCU'S BIRTHDAY

This presentation will be structured in a factual enumeration of Professor Ecaterina Ciorănescu-Nenitzescu's scientific achievements, to be followed by four personal, less formal, reminiscences, and continuing with the list of her publications, and of the Ph. D. theses that she had supervised.

1. PROFESSOR ECATERINA CIORĂNESCU-NENITZESCU'S SCIENTIFIC ACTIVITY

Family details will be presented in a following section by physicist Ecaterina Teleman, Ph. D. (née Ciorănescu), who is Professor Ecaterina Ciorănescu's niece. Here will be presented only Ecaterina Ciorănescu's scientific and educational activities. During her life (1909-2000), she inspired with her lectures and textbooks many of her students to embrace the pharmaceutical chemistry branch of chemical engineering.

After graduating from the Physico-Chemical Faculty of the Bucharest University in 1932, she embarked on a Ph. D. study under the supervision of Professor Costin D. Nenitzescu. The title of her thesis which she defended in 1936 was "Syntheses catalyzed by aluminium chloride in the series of aliphatic and alicyclic hydrocarbons". At that time, this field of research was systematically covered by the research group around Professor Nenitzescu, resulting in a steady flow of papers published in the main German chemical journal; however, whereas the "Nenitzescu indole syntheses" may be considered to be in continuation of research results connected with Professor Nenitzescu's doctoral studies in Munich, the AlCl_3 -catalyzed reactions in non-aromatic chemical compounds was a novel area opened up in Roumania. Dr. Ciorănescu's diligent research ended with yet another name reaction, the "Nenitzescu-Ciorănescu reductive acylation of alkenes" affording saturated ketones (No. 2 in the List of Publications). Many more collaborative publications followed, including complicated steroidal skeletons. After their marriage, she continued to use her maiden name because she had already published several papers signed with that name, so that only seldom did she use the hyphenated Ciorănescu -Nenitzescu name.

She followed Professor Nenitzescu when he moved from the Bucharest University to the Polytechnic Institute (now called "University Politehnica"), but for a few years she was a professor at the Bucharest Institute of Oil, Gas, and Geology (nowadays it functions as University Oil-Gas Ploiești), climbing gradually all ranks of university faculty.

Starting with 1950, after having taught for several years a university course on pharmaceuticals, she decided to publish her textbook "Synthetic Medicinal Drugs", in two editions (1957 and 1966), which has remained till now an admirable source of inspiration, despite the rapid progress and inherent changes in this field. Her own research area involved finding alternative syntheses of pharmaceutical drugs such as sulphathiazole, chloromycetin, and various tuberculostatics such as nicotinic acid hydrazide. She also investigated the possibility of targeting malignant cells by associating cytotoxic groups with hormones aimed at organs containing these cells.

As shown in the list of publications at the end of this presentation, her research during the later years opened up new areas such as kinetic *versus* thermodynamic control of carbenium ion rearrangements, providing arguments for the existence of a "retro- π -route" in solvolyses of diol esters. Together with M. D. Banciu and other coworkers, she published several papers describing the synthesis and properties of new valence isomers of dibenzoannulenes.

When heading the Chair of Organic Chemistry in the Bucharest Polytechnic, and as Director of the Center of Organic Chemistry which is now one of the Roumanian Academy's research institutes, she proved to have the scientific authority and the human understanding for allowing a smooth functioning of these collective units.

After the terrible 1977 earthquake which destroyed the Bucharest University's Faculty of Chemistry, she generously offered for several years a suitable working space in the rather small building of the Center of Organic Chemistry for all the 'now homeless' organic chemists.

Professor Ecaterina Ciorănescu-Nenitzescu was awarded several distinctions, such as her election as corresponding member of the Roumanian Academy in 1963, and as titular academician in 1974.

2. A VERY PERSONAL AND UNCONVENTIONAL INTRODUCTION TO THE CENTENNIAL ANNIVERSARY OF PROFESSOR ECATERINA CIORĂNESCU-NENITZESCU'S BIRTHDAY

(by Alexandru T. Balaban)

In 1951 I was a student in the second year at the Faculty of Industrial Chemistry in the Polytechnic Institute Bucharest. At that time I was staying in the house of my maternal aunt. Having been fascinated by the splendid manner in which Professor Costin D. Nenitzescu presented his course of Organic Chemistry, I had had the audacity of following the invitation to come to his office for consultations, asking various questions that were burgeoning along when reading his *Elementary Treatise of Organic Chemistry*. This was the title of the edition we were using at that time – several other editions were going to follow during the following decades. Probably he had seen that I was deeply interested in this beautiful and challenging science, and he included my name in the list of the three students from our class who were invited to join his research group – my good friends Florin Badea and Ștefan Isbășoiu were the other two. We were assigned tutors/supervisors from the Organic Chemistry teaching staff, and for me it was Dr. Ileana Necșoiu, who directed my first steps to the original literature and laboratory techniques. We came to this extra-curricular activity during afternoons, after attending lectures in the morning, and we were assigned small research projects. It was in such evenings that the Magister (as we all called Professor Nenitzescu) was meeting his coworkers and the students who happened to be present.

To my surprise, one day in May 1951, the Magister invited me to have lunch in his home on Maria-Hagi-Moscu-Street on the following Sunday. There I met for the first time Professor Ecaterina Ciorănescu-Nenitzescu, and I realized that it happened to be the Orthodox traditional day "Emperor-Saints Constantin and Elena", that is the "namesake day" of the Magister. Luckily, I had come with a flower bouquet.

Then, during the fourth year of my studentship, having chosen the section Dyestuffs and Pharmaceuticals, the course for Medicinal Drugs was presented by Professor Ecaterina Ciorănescu-Nenitzescu. By then, it was likely that I might be selected, together with my colleague Florin Badea, for joining as Assistants the staff of the Organic Chemistry group (Chairman Professor Nenitzescu). Again, it was a pleasant surprise that in 1953 I could enroll with a special license for the entrance exam in the recently reinstated doctoral system, which entitled me to a 3-year fellowship. During those years, like all the other collaborators of the Magister, we often went for advice to Professor Ciorănescu-Nenitzescu, whom we called "Doamna" – *i. e.* "The Lady". She knew that at that time the Magister (who together with Professor Emilian Bratu came exhausted and irritated from his fights with the authorities in order to find funding for chemical research) treated sometimes his coworkers brusquely, and could always find soothing words for calming the spirits. The Institute named ICECHIM was born from these efforts, and the corresponding organic chemical research group worked initially for several years, along with the teaching staff, in the Polizu-Street building of the Bucharest Polytechnic.

The closely-knit group around Professors Nenitzescu and Ciorănescu-Nenitzescu included chemists who had obtained their Ph. D. degrees with them: Margareta Avram, Ludmila Birladeanu, Aurora Bucur, Ilie Dinulescu, Maria Gavăt, Alice Glatz, Viorica Ioan, Ileana Necșoiu, Iuliu Pogany, and many younger additions who were on the way of obtaining their Ph. D. degrees – only a few will be mentioned here: Florin Badea, Mircea D. Banciu, Doina Constantinescu, Angela Dumitru, Mihai Elian, Petru Filip, Gheorghe Mihai, Sorin Roșca, Iosif Schiketanz. A special mention should be added for Gheorghe D. Mateescu, who joined the research group to take care of infrared spectra and the helped in the design and supervision of the construction work for the Center of Organic Chemistry.

Now a brief digression is needed. When I was six-seven years old, my parents rented the second floor of a two-level house in Bucharest on Alexandru Constantinescu Street No. 40. At No. 50 the Teleman family had five children and the oldest of them, Silviu Teleman, who was only a few months younger than me, became my best friend. We shared many interests, including being amateur chemists, but gradually Silviu's interests shifted towards mathematics. Even when my father, Teodor Balaban, moved away with our family to Petroșani in 1945, I kept the contact with Silviu by mail, and when I returned to Bucharest to enroll as a student, I was glad to meet Silviu again. His parents had a set of drawbacks (nationalization of Silviu's father's enterprise and house), which was compounded by the fact that Silviu had to register as an "attendance-exempt student" at the Faculty of Mathematics of the Bucharest University. For my first "dabbling" in chemical graph theory, Silviu provided sound advice and in 1958 I published a paper in *Studii și Cercetări de Chimie ale Academiei Române* mentioning that it was in part a collaboration with Silviu Teleman.

In 1955 I married Cornelia Florea (Nelly), a fellow student, and in 1958 our son was born. For his christening as Teodor-Silviu we had the *Magister* (accompanied by *Doamna Ciorănescu-Nenitzescu*), as well as Silviu Teleman, to be his godfathers.

Often during the following years, Nelly and I took our bicycles with a special basket for our Silviu, and we also invited our friend Silviu Teleman to join us. Sometimes he also brought a friend of his who worked in the same institute, the namesake and niece of Professor Ecaterina Ciorănescu-Nenitzescu, and we hoped that they would marry – and were happy when this happened.

Although I was a member of the teaching staff in the Organic Chemistry Department (or Chair, the equivalent of a Department), after 1957 I had taken a second position in the recently founded Institute of Atomic Physics (IFA), involving the Laboratory for Isotopically-Labelled Compounds, and one of the research topics that I had chosen was the synthesis of scintillators for detecting nuclear radiations. Some of the best scintillators are derivatives of 2,5-diphenylxazole (known as PPO). At that time, *Doamna Ciorănescu-Nenitzescu* with Ludmila Bârlădeanu ("Lily") had published two papers on the discovery of a new synthesis of α -aminoketones by acylamino-acylation of aromatic hydrocarbons, using azlactones as electrophiles and anhydrous aluminium chloride as catalyst. Thus was born my scientific collaboration with *Doamna Ciorănescu-Nenitzescu*: hippuric acid azlactone (2-phenyloxazolin-5-one) and aromatic hydrocarbons in the presence of AlCl_3 , afford α -benzoylaminoketones that upon dehydration lead to 5-aryl-2-phenyloxazoles. With Lily Bârlădeanu and my collaborator from IFA, Petre T. Frangopol, we published four papers in collaboration with *Doamna* between 1961 and 1963. With her and with Professors Iosif Schiketanz or Mircea Banciu, two other papers in this field were published in the 1980s.

Then a puzzling observation was solved by noting that aluminium chloride as catalyst behaves differently when it is perfectly anhydrous (Lewis acid) from the case when it has traces of water (Brønsted acid). This time, in 1962, the collaboration involved as authors E. Ciorănescu, L. Bârlădeanu, A.T. Balaban and C. D. Nenitzescu (Influence of water in the AlCl_3 -catalyzed reaction of unsaturated azlactones with aromatics).

In March 1963, an unexpected event happened at the Roumanian Academy. Three corresponding members in the Chemistry Section were elected as titular members, joining our *Magister*, namely in alphabetical order: Eugen Angelescu, Coriolan Drăgulescu, and Cristofor Simionescu. Most interestingly, new corresponding members were elected in this section, namely Cornel Bodea, Emilian Bratu, Ecaterina Ciorănescu-Nenitzescu, Mircea Ionescu, Victor-Emanuel Sahini, Claudiu G. Suci, Ioan Zugrăvescu, and (astonishingly for me), A. T. Balaban – at that time I had recently been promoted from assistant to associate professor, while all other corresponding members were full professors. I learned that only Nicolae Iorga had been elected at an earlier age. I do not know the details of my nomination and election, but rumour has it that Horia Hulubei (the Director of IFA) and the *Magister* had been involved in this unexpected honour. This changed my life, bringing advantages and various duties – including a higher self-imposed standard. Professor Nenitzescu mediated my move to the Chair of General Chemistry, as a full professor. I was involved in many activities – the effort to take care of the emerging new Laboratory of Labelled Organic Compounds at IFA, to write my first research papers, many of which were with Professor Nenitzescu, and of course various family duties, although Nelly tried to help as much as she could. She continues to do so for more than half a century.

In 1966 the Roumanian Academy authorized three chemists (C. D. Nenitzescu, E. Ciorănescu-Nenitzescu, and myself) to participate with presentations at the IUPAC Conference on Organic Chemistry in Cork, Ireland. The airplane travel had a stop over in Paris, and we had a lunch together with Alexandru

Ciorănescu, who had come from Tenerife to meet his sister. In Cork we became acquainted with a professor of chemistry, José Jaz, who had been born in Roumania and lived in Louvain, Belgium. He came later to Bucharest, and even worked there at the UNESCO Center. The Cork newspapers featured a photo of the four chemists from Roumania and Belgium.

In 1967 another unexpected event occurred. Professor Hulubei nominated me for a 3-year appointment at the International Atomic Energy Agency (IAEA) in Vienna, and when this was approved I took a leave of absence from my teaching duties, but continued to supervise the research activity of my small research team in IFA. At that time in Roumania there were six working days in a week, but only five at IAEA, so that I was able to fly once every six weeks for an extended weekend in Bucharest. Every time I also paid a visit to Strada Școalei 8 for talking to Magister and Doamna, learning about the fights with ill-intentioned political authorities that had little understanding for high-level basic research. The Organic Chemistry Research Center that was directed by Magister and built according to his instructions built to the huge ICECHIM building was threatened to become industrially-oriented, and with much effort Professor Nenitzescu succeeded in making it dependent of the Ministry of Education. And when my appointment in Vienna ended in 1970, I learnt that Magister had recently died.

Soon after my final return to Bucharest, I was summoned in 1971 by the Rector of the Bucharest Polytechnic, Professor Suzana Gâdea, who had been an eminent researcher and professor in metallurgy, but had now abandoned her scientific activity and had become a prominent political figure. She told me confidentially that I was to assume the leadership of the Organic Chemistry Research Center (CCO), and later also the Chair of Organic Chemistry, and I was expressly told not to tell anyone about this. However, how could I do this to my mentors? The next morning, I went to Professor Ciorănescu and told her the whole story. I saw that she did not like this development, and then I proposed for us two to go immediately to the Secretary (Minister) for Education, Professor Mircea Malița, in whose suborder were all the universities, and tell him that I declined the offer about CCO (by chance, I knew personally Professor Mircea Malița who shared my enthusiasm for graph-theoretical applications). This was done, and Professor Ciorănescu was appointed as Director of the Organic Chemistry Research Center, which she led through difficult times. (In passing, it must be mentioned that I was never forgiven by Suzana Gâdea, who appointed Professor Margareta Avram as Chair Person for Organic Chemistry in the Polytechnic. After the fall of the communist regime, the Romanian Academy cancelled Dr. Suzana Gâdea's title of Academician because she had become too implicated in political activities).

Professor Ecaterina Ciorănescu-Nenitzescu knew how to appreciate and stimulate the best of her coworkers, among whom I shall only mention Mihai Elian and Mircea D. Banciu. Most of her later papers were published in collaboration with Mircea Banciu. When Mircea and I decided to write our book "C. D. Nenitzescu: His Life and His Work" (in Roumanian), Editura Academiei Române, Bucharest, 1995, 'Doamna' provided considerable help.

Professor Ciorănescu's humour was proverbial. I recall what I learned from my fellow-student Claudiu Matasa, who was arrested for political dissidence at the start of the senior (fourth) year. After several months at the Danube – Black-Sea Canal (a kind of concentration/extermination camp for political undesirables), he was released just before the exam session. He did not have time to prepare seriously for the Synthetic Medicinal Drugs test, but he hoped to be able to deduce logically how one can synthesize various structures (he had succeeded to learn only the names and structures of medicinal drugs). After the first of three topics that he had to present, Doamna asked: "How do you know about this synthesis, which I did not present in my lecture?", to which Claudiu replied that he had read it in a book – he could not attend the lectures, having being imprisoned. A similar situation happened with the second and the third topic. Then Doamna said: "You know nothing about pharmaceuticals, thus you get a 0, but you are 'juggler' with synthetic organic chemistry and therefore you get a 10, so that the average is the passing grade of 5. Are you satisfied?"

After 1970, the political and economical atmosphere in Roumania became more and more unfavorable to basic research, and in 1974 I remained only with my teaching job, moving back to the Chair of Organic Chemistry, now headed by professor Margareta Avram, after abandoning my second position in IFA, because research was frowned upon, and the only tolerated activity there was the manufacture of labeled compounds for medical applications. With Professor Ciorănescu's approval, I had the possibility of collaborating with a few chemists in CCO (Dr. Cornelia Uncuța, Dr. Petru Filip, Drs. Ileana and Valeriu Drăguțan). Also, my son Teodor-Silviu was one of Professor Ciorănescu's Ph. D. students in CCO.

I am deeply grateful to Professors Costin D. Nenitzescu and Ecaterina Ciorănescu-Nenitzescu who made it possible for me to pursue and enjoy a career of research and teaching in Organic Chemistry.

My thanks go to Professor Luminitza Pârvulescu for her help in preparing the list of publications and of Ph. D. theses.

*Alexandru T. Balaban
May 2009*

3. RECOLLECTIONS ABOUT MY FAMILY

(by physicist Ecaterina Telean, Ph. D., née Ciorănescu)

Ecaterina Ciorănescu-Nenitzescu was born on August 15th 1909 in Moroeni (Dâmbovița County), as the fifth child of a school teacher couple, Ion and Ecaterina Ciorănescu, my paternal grandparents. Her four older siblings were Ana Ciorănescu-Stănică (1900-1969, who was a teacher of history and geography), Nicolae Ciorănescu (1902-1957, professor of mathematics at the Polytechnic University of Bucharest), Ioan Ciorănescu (1905-1926, poet and writer, who died at a young age to the deep regret of his family), and Constantin Ciorănescu (1907-1949, engineer, who was my father); the close ties between my father and his younger sister account for the fact that I am bearing her name, which happened to be also the name of both my grandmothers. The four younger siblings who followed were Alexandru Ciorănescu (1911-1999, assistant and collaborator of the famous Roumanian historian, writer, and political figure Nicolae Iorga; after the 2nd World War he was a professor of French literature at Universidad de la Laguna, Santa Cruz de Tenerife), Maria Ciorănescu (1913-1995, pulmonary physician), Elena Ciorănescu (1916-1981), and George Ciorănescu (1918-1993, lawyer, poet and historian, who like Alexandru left Roumania after the 2nd World War and lived in München).

The Moroeni village where all nine children were born is situated on the river Ialomița in a beautiful hilly region, but then was fairly poor. From the city of Sinaia, which had a special royal rail-station, Moroeni was readily accessible by crossing mountain Păduchiosul on foot or by horse-cart. Also one can reach Moroeni from Pietroșița, an active market-town, following the downcourse of the river Ialomița. Between the two World Wars, the village Moroeni became accessible by a mountain narrow railway used for carrying logs or gravel, and occasionally also passengers.

The Brook (as people used to call the upper Ialomița) flew nicely downhill through huge boulders forming dangerous whirlpools. The watermill with its enchanted deep pool was the favorite place for the village children who practiced uncommon swimming styles. In Ialomița's upper course there was plenty of fish and my grandfather's brother, Costea Cioranu, also a teacher, showed proudly his catch – big trout with orange- and turquoise-colored dots. My grandfather had built a house in 1942 in which his hunting trophies were displayed in the living room. Nowadays no more trout is to be found there, and many newer houses have been built towards the Păduchiosul. The little railway still existed in 1964 when I took there my older son for a visit.

Due to the mild climate and clean air, in 1930-1938 a modern hospital for pulmonary patients was built on the hilltop. Tuberculosis was an ever-present threat for villagers whose main source of income was selling homespun fabric – cloth, tapestry, carpets, etc. Women worked at their looms in their “free time”, that is when they were not cooking, cleaning, washing, taking care of the children, milking the cow, or feeding the pigs and the chicken. Many men knew how to spin thin yarn for cloth or thick yarn for carpets (my father was one of them), but their main job was to take to the market the products, which included also sheep cheese, smoked goat cheese, or plum brandy. Tourists who drive nowadays from Sinaia towards the Bușteni Mountains often see on the highway farmers selling such products; when asked where do they come from, they often reply that they are from Moroeni, as I found out in 2005, the most recent date when I revisited Roumania.

In the world that I have described (maybe with too many details) all the nine members of the Ciorănescu tribe spent their childhood. The parents had instituted a strict discipline in order to be able to cope with such a large family, and during weekdays, to be away teaching at the Moroeni school. Everybody had duties to fulfill, and this included reading, which was highly prized. However, there remained a lot of time for children to play, and sometime even for “adventures”. With their talent as teachers, my grandparents were able to “keep the engine running” without slapping naughty children – although they could find other

punishments (such as throwing a wooden log full of snow between two brothers into the bed where they were fighting).

During those times, an 8-year-old girl was supposed to fulfill various tasks in the household. My grandmother used to say “When at home, you don’t sit with your hands in your lap, you have to do something”. And thus, when “Tota” – as the whole family used to call her – reached her 9th year, she became responsible for raising the youngest brother, George, and continued to do this till he was 11 years old. They became close friends, and his death in 1993 after a tormenting sickness was a blow from which Aunt Tota never recovered.

All Ciorănescu children had to leave Moroeni for going to high school: the three older brothers went into boarding schools, but the younger siblings born after 1909 did not have to do this because the whole family left Moroeni after the 1st World War. My grandfather moved to Bucharest where he built a house at 12, Maria-Hagi-Moscu Street. It still stands, with high windows decorated with heads of Hermes-Mercury (as was fashionable then), and it has inscribed on the frontispiece the owner’s initials and the year “I. C. 1922”. Life in Bucharest was easier, and the girls went to the Central Girls Lyceum. Despite the economical crisis during the early ‘30s, the population prospered. Ecaterina Ciorănescu-Nenitzescu graduated in 1932 from the Faculty of Physics and Chemistry of the Bucharest University, where she met Professor Costin D. Nenitzescu. Under his supervision, she obtained in 1936 the Ph. D. degree with a thesis entitled “Syntheses in the Series of Aliphatic and Alicyclic Hydrocarbons Catalysed by Aluminium Chloride”. Her encounter with C. D. Nenitzescu proved to be of utmost importance because their marriage changed not only her life, but also the life of the next generation of cousins born between 1937 and 1942.

The period between 1930 and 1940 in Roumania was favorable for those who kept away from political agitators. The organic-chemical research group at the Bucharest University and then at the Polytechnic Institute (present name “University Politehnica”) was centered around professor Nenitzescu, who was called “Magister” by all coworkers and even by the adults of the Ciorănescu family. In the chemical laboratories of the building on Polizu Street the activity started early in the morning and continued, with a short lunch break, till late in the evening – around 9 p. m. My father visited there his sister at least once a week, and often took me there with him in the evening when I was about 5 years old. I was delighted to look at the chemical glassware and to breathe the “scents” of the experiments that happened to be under way. This intense research and teaching activity went on with just one interruption during the war time, when the American bombing on the 4th of April 1944 destroyed most the North Railway Station, part of the Polytechnic (but not the chemical laboratories), the German Headquarters, and the administrative building of the Roumanian Railways, where my father was working.

Soon afterwards, schools were closed and many people from Bucharest left the capital city. Our family succeeded to become reunited in Moroeni, in the house that had been recently reconstructed after my grandfather’s master plan. From Bucharest to Moroeni, the journey took several days because only freight trains were available, and railway stations continued to be bombed. Happily, we all came there alive, and in the big house with surrounding accommodation for livestock that included swine, chicken, cows and dogs, all children found a long, pleasant, and exciting holiday. However, parents, aunts and uncles followed apprehensively the events, including airplane fights above us. I also recall that all our large family was terribly afraid when looking from the windows of the living room at the Red Army marching on foot or in carts confiscated from Romanian households.

Soon after the 23rd of August 1944, when Roumania joined the Allied Forces against Germany, life started to become normal again. The Organic Chemistry group resumed again its activity in the Bucharest Polytechnic, despite all the damages. I will not dwell on the events during the few years after the end of the 2nd World War, and I will arrive at the main topic of my story after such a long introduction. In 1949, after several deaths, divorces, and forced separations or emigrations caused by the political situation, the remaining Ciorănescu family was faced with four parentless children: two of them with no father, and two without both parents. The oldest child was 12, and the youngest one 5 years old. My father (Constantin Ciorănescu) had died in 1949; Călin Reștea was Elena’s son; Sanda and Neluș Ciorănescu were Alexandru’s children.

Owing to communist-inspired expropriations and nationalizations, the family was in dire economical situation. Under these circumstances, my aunt, Ecaterina Ciorănescu-Nenitzescu, and professor Nenitzescu (we, the children, called him “Uncle Costin”) took upon them the difficult task of caring for these four children (I was one of them). Aunt Tota and Uncle Costin did this without any hesitation, official declaration, or fear of future difficulties. They assumed the responsibility of raising these four children, educating them, allowing them to reach their goals and to acquire a normal and equilibrated maturity. They

provided for us substantial material help, inspired and embellished our life. Every summer from 1949 till 1960 (and even later for those of us who chose to do so) they let us have long holidays in Bușteni, a tourist residence dominated by the Caraiman Peak in the Carpathian Mountains. In August, during their one-month summer holiday, they joined us, and often they brought also a few of their scientific coworkers. Thus, with our backpacks, our large and noisy group climbed the Bucegi Mountains, not only on easy paths but sometimes also on dangerous precipices where we were terrified – but it always was beautiful. Often we were joined by an inspired story-teller, always full of good humour, namely professor Șerban Țițeica, the famous physicist, son of the famous mathematician George Țițeica, and friend of Uncle Costin.

Aunt Tota and Uncle Costin, although both being first-rank scientists, insisted that we benefit from enlarging our humanistic horizon, and that we become proficient in foreign languages by hiring teachers to help us study French, German, and English languages and literature. Even today I relish reading not only Roumanian literature, but I enjoy also reading books in these languages. When I was a teenager and had more time at my disposal, I looked at an unread book as a challenge.

Moreover, by their personal example, I learnt that one can love one's occupation not as a duty but as a hobby. I saw how passionately they enjoyed their research, so that even during the holidays, when it rained outside, they were working – writing student textbooks, and reading from scientific books and journals.

After my three cousins left Roumania and professor Nenitzescu passed away in 1970, Aunt Tota devoted most of her energy to chemistry, but remained a support for her sisters who lived in Romania, constituting a stronghold for what had remained from the Ciorănescu family.

For my two sons – now adults – she continued to provide unequalled summer- and winter-holidays in her Bușteni house. She was delighted that she could now protect her nephews, as she had protected their mother. Thanks to her, my sons could see her coworkers – professors at the Bucharest Polytechnic, and research chemists from the “C. D. Nenitzescu” Center of Organic Chemistry of the Roumanian Academy, learning how dedicated they were to their activities. I talked to my sons, and they agreed that my Aunt Tota has played a huge role in their lives too. Without her, their lives would have been poorer or less attractive, and certainly their personalities would have been different. Perhaps she even pampered them too much. They authorized me to state that they loved and respected her as much as I have loved and respected her.

The ending is rather sad – I left Roumania with my husband and two sons in 1986. In her generous and forgiving nature, she accompanied us to the North Railway Station and when the train left, we were afraid we would never meet again. We did see each other again three times till 2000, and I am deeply grateful to all who supported her in my absence: especially Sanda Theodorini, M. D.; Doina Constantinescu, Ph. D.; Mina and Aron (who had been her driver when the Roumanian Academy had provided her with a car). Probably there are many others and I thank all of them from the bottom of my heart.

*Ecaterina Teleman
29th of April 2009
Albany, NY, USA*

4. THREE ENCOUNTERS AND AN EPILOGUE *(by Gideon Engel, chemical engineer, a former student)*

In June 1952, when I was a student in the third year at the Faculty of Industrial Chemistry in the Polytechnic Institute Bucharest, a “political purge” swept over Roumania, and I was expelled because I had acknowledged in my mandatory autobiography that before enrolling as a student, I had been an active Zionist in 1946-1948. To Sandy Balaban and two other fellow students who asked me if I would like them to make an official protest, I replied that they would not help me, but harm themselves considerably. Since then, I had kept away carefully from any political activity.

In July 1952, having a family, I found a job as technician in a Bucharest pharmaceutical factory, ICF4. Two years later, my superiors in that factory encouraged me to continue my studies providing letters of recommendation. I was admitted as an “attendance-exempt student” continuing to work at ICF4. One of the exams was about “synthetic medicinal drugs” and there I met Professor Ecaterina Ciorănescu for the first time. To my pleasant surprise, the topics I chanced to draw, chloramine and benzenesulphonamide, were quite familiar

because they were made at ICF4. When I presented with details these syntheses, and having explained why I knew them so well, Professor Ciorănescu-Nenitzescu's rather stern face opened in a big smile.

After a few more years I was supposed to prepare a master thesis for graduating. At the beginning of 1958, there remained no time to prepare the laboratory part of the thesis for the spring session, and I intended to wait till the autumn session. However, my wife insisted that I should ask Professor Ciorănescu-Nenitzescu if it would be possible to be exempted because at ICF4 I was leading the pilot station for the manufacture of the pharmaceutical described in my thesis. With some hesitation, I went for my second meeting with her, but she made me happy by accepting immediately without any reservation.

In February 1958, we were four attendance-exempt students for the spring final exam session. I presented my thesis, and then with the other candidates I was nervously pacing in the corridor waiting for the verdict. Many minutes passed and nothing happened. We were hearing from time to time Professor Ciorănescu-Nenitzescu's voice as she was arguing furiously with the members of the commission. Finally, after one hour, we were called inside, and the president of the commission (Professor Ianu, the Dean of the Faculty) congratulated three of us, ... and also me at the end. My God, was I happy! The secretary of the commission, Associate Professor Teodorescu from the Inorganic Chemistry Department (Chairman Professor Petre Spacu), took me apart and told me in low voice: "For the three other students, the debate took only 15 minutes, but for you it took 45 minutes. Professor Osias Solomon wanted to give you a failing grade, but Professor Ciorănescu-Nenitzescu fought like a lioness for you." Then Professor Solomon told me grinning malevolently: "I wanted you to flunk now the final exam, so that in the autumn session you might get a better grade". I knew, however, that he was an evil obedient communist.

In August 1958, a new wave of "political vigilance" swept over Roumania, and with my unfavorable past, I was laid off as an "enemy of the people". Had I not graduated with the engineer diploma in February, I would never have had this opportunity again, and I would have remained in an "unfinished" state for all my life. In 1960 I immigrated to Israel where I worked for 32 years at the Haifa oil refinery as a chemical engineer, before my mandatory retirement.

Epilogue – In 1997, after a 37-year absence, I returned to Bucharest at the invitation of my university colleagues during 1949-1952, Nelly and Sandy Balaban, as a guest in their apartment. Sandy arranged for me to meet the 88-year old Professor Ciorănescu-Nenitzescu in her house on Strada Școalei 8. She appeared fit and bright-minded, but very lean. I reminded her about the episode in February 1958, telling her that by opposing Professor Solomon's politically-motivated evil intentions, she had changed my life. I also cited a motto: "Whoever saves one soul saves the whole world" (an Old Hebraic tradition). I saw her eyes filling with tears when hearing this, as it happens to me now, when I write these words.

*Gideon Engel
Israel
April 2009*

5. RECOLLECTIONS ABOUT PROFESSOR ECATERINA CIORĂNESCU-NENITZESCU

(by Doina Constantinescu, Ph. D.)

During the 50s, as a student in the last (4th) year of the Organic Chemistry Class (in the Faculty of Industrial Chemistry of the Bucharest Polytechnic) I first saw Professor Ecaterina Ciorănescu-Nenitzescu when she was lecturing on "Pharmaceutical Products". Her natural elegance and distinction, combined with the clear and logical manner in which she was presenting a somewhat difficult course, with many drug names that had to be memorized in association with their structures, made this course an attractive one for students. Moreover, the fact that the classification of pharmaceuticals was based on their physiological activity facilitated the learning process.

In four previous semesters Professor Costin D. Nenitzescu had ironed into us the logic of organic chemistry, which acted as a magnet for me, orienting my choice in the 2nd year of studentship towards the organic-chemical specialization. Then, in the 3rd year I was offered the chance to do "extra lab work" in the laboratory of Organic Chemistry under the chairmanship of the Magister and the guidance of Dr. Maria Gavăt. I am very grateful to her not only for what she taught me, but also for the special way she treated

me – a run-of-the-mill student from a provincial city without “relations” in Bucharest or in the Faculty of Industrial Chemistry.

In the laboratory of Organic Chemistry we were together with faculty from the Chair of Organic Chemistry headed by the Magister, and with chemists whom he had recently recruited into the Center of Organic Chemistry of the Roumanian Academy that he had succeeded in founding. Taking into account also the students doing “extra lab work”, those working for their final diploma, and the future Ph. D. students, the rooms were fairly crowded. However, to be admitted to do “extra lab work” was a great honor, based on exam results: we were able to learn the “trade secrets” from our seniors and to help them in performing real research, so that staying the lab from morning till evening during the “free time” was a pleasant experience.

Dr. Maria Gavăt was attempting to obtain a simple hypnotic-sedative, chloral hydrate, by a different route than the classical one discovered by Liebig starting from ethanol, namely starting from acetaldehyde that could be obtained industrially by a cheaper route. Therefore my diploma thesis (“Synthesis of Chloral and Related Compounds”) was performed under the supervision of Professor Ecaterina Ciorănescu-Nenitzescu and led to my graduation. In 1956, after a few tribulations caused by my “bourgeois” origin (my father was a priest), I was granted the special opportunity of being invited by the Magister to become his collaborator (first as an assistant in the Polytechnic for one year, and then for 36 years in the Center of Organic Chemistry till my retirement in 1993).

I started working in the research group around Professors Margareta Avram, Dr. Ilie Dinulescu, and Dr. Maria Maxim concentrating on the chemistry of cyclobutane. I also chose to work for my Ph. D. degree in this area (“Investigations on Benzocyclobutadiene”, 1968). Due to the fact that my handwriting was readily readable, Doamna Ciorănescu-Nenitzescu “adopted” me for helping her with the 2nd edition of the textbook “Synthetic Medicinal Drugs” which was published in 1966: in my free time, I was drawing formulas on the typewritten manuscript, for which I also did the proofreading and the compilation of the index. Often during weekends (or during the weeks when I was on maternity leave before and after I had my second child) I went to the Ciorănescu-Nenitzescu house on Strada Școalei 8 for helping with this textbook. While the Magister was working in his study, Doamna and I were using the Florentine table in the living room (I liked this table also because my middle name is Florentina). The quiet and calm atmosphere in that house was quite enticing for studying.

Soon after obtaining my Ph. D. degree, the Magister offered me the chance of a one-year post-doctoral stay in the Institute of Organic Chemistry of the Karlsruhe University, where the director was Professor Rudolf Criegee. Between Professors Nenitzescu and Criegee there had been an intense correspondence in the 1950s because both had performed high-impact research in the synthesis of cyclobutadiene and its derivatives. During 1959-1960, a “gentleman agreement” was reached according to which the Karlsruhe group concentrated on substituted cyclobutadiene derivatives, and the Bucharest group on unsubstituted cyclobutadiene and benzocyclobutadiene. It is my modest duty to mention that along with the papers published by C. D. Nenitzescu and M. Avram on cyclobutadiene and its dimers, several papers on benzocyclobutadiene for which I was a coauthor (as Doina Dinu, my maiden name) are among the most-cited post-war papers of the Nenitzescu research group

At the initiative of the Magister, the Roumanian Ministry of Education addressed an invitation to Professor Criegee for visiting with his coworkers the Bucharest Polytechnic and the Center of Organic Chemistry in August 1970. However, fate decided otherwise because on July 28, 1970 Professor Nenitzescu passed away in his sleep unexpectedly because of a heart attack. There was a wide consternation in the Polytechnic and the Organic Chemistry Center, and nobody knew what would happen to the research initiated by our Magister. Professor Criegee announced that under the circumstances, there would be no visit. The only person who found a way to overcome her grief and to find a solution was Doamna Ciorănescu-Nenitzescu, who proposed that the visit should take place as had been decided by the Magister. For continuing and developing the close relationship between the two institutes, it was essential to have a week’s seminar with scientific communications and discussions for exchange of information. She called me, dictated a letter that was sent to Professor Criegee, and the visit did take place as planned by the Magister. Accompanying Professor Criegee and his numerous coworkers was also Professor Schröder, and Doamna invited both Professors to her home where, despite her sorrow, she was a perfect host.

I believe that I became more closely connected spiritually to Doamna during this period of grief and solitude for her. First, there was the problem of helping for the correspondence to German, and then for the proofreading of Professor Nenitzescu’s textbook on General Chemistry, which was left at the stage of manuscript and could be published only in 1972. Here I must mention the contributions of Dr. Viorica Ioan

who had assisted our Magister for several successive editions of the textbook on Organic Chemistry, and who taught me how to collate a text, to proofread, and various other “trade secrets” on book publishing. One would believe that nowadays with computer-assisted proofreading such knowledge is no longer needed, but this is not true – unfortunately, I never had Viorica Ioan’s quick eye for detecting typos. When in 1974-1975, Dr. V. Ioan had to retire, there was the need to replace her in multitasking, *e. g.* keeping track of papers under press, collecting reprints, typing and coordinating scientific correspondence, etc. My experience with such work allowed me to undertake this task. I had my contributions to the 6th, 7th, and 8th editions of Nenitzescu’s textbooks on Organic Chemistry (1968, 1974, 1981). For some of these editions, the author’s handwritten notes had been revised by Professor E. Ciorănescu-Nenitzescu and Dr. Mihai Elian. The last edition as well as Nenitzescu’s General Chemistry textbook published in 1985 were partly revised and partly photoprinted.

In 1985 Doamna asked me if I might help her with the 3rd edition of the textbook on Synthetic Medicinal Drugs, which she had started to bring up to date earlier. I accepted with pleasure because I had always liked this field. Thus began our collaboration till after my retirement which took place in 1993, but it continued sporadically till 1999. In October 1994 I went for a one-year stay with my daughter in Canada, and from there I called Doamna by phone on November 25 (Saint Catherine); to my grief I learnt that she was not well. After my return to Bucharest during the summer of 1995. Doamna was better but the illness prevented her working at a sustained pace, as needed for finalizing the new edition of the book. It is regrettable that after 20 of the 24 chapters were updated, the 3rd edition could never be published.

One of the main objectives that Doamna had during the 30 years after the disappearance of our Magister was to make certain that the Center of Organic Chemistry created by her husband in 1950 would survive. In 1968 the Center had moved from the laboratories in the Polytechnic to a new building (Splaiul Independenței 202B), and in 1970 it had been transferred from the Roumanian Academy to the Ministry of Education, with special prescribed orientation towards applied research. In 1970 a new Deputy Director was appointed, Dr. Alexandru Huch, with an eminent chemical engineering background, but he died in 1975. In 1974 a Central Institute of Chemistry was created, and the Center of Organic Chemistry became one of its branches. Dr. Mihai Elian became the next Deputy Director; he had had post-doctoral stages with Professors Ernest O. Fischer in Germany (with the recommendation of Professor Nenitzescu) and (with Professor Balaban’s recommendation) Roald Hoffmann in USA (each of them obtaining Nobel Prizes for chemistry after Dr. Elian had left, but both had acknowledged his contributions). In addition to being an excellent scientist, Dr. Elian was an exceptionally hard-working and correct scientist, but unfortunately he had a fatal heart attack in 1986 at the early age of 52.

After 1977 Doamna became honorary director of the Center but she felt it was her duty to care about its existence, scientific status, and smooth functioning. She succeeded in transmitting this sentiment and responsibility to us, research workers selected by our Magister. Even now, when some of us are no longer active in research, this inherited care makes us regret that we can no longer help.

Using various pretexts, after 1995 I started to visit Doamna twice or three times a week around 11 o’clock in the morning, especially when Mina (her maid who came from Pucioasa a few days per week) was not there. She also had helping hands in Aron Pop (who had been assigned by the Academy as driver during the last years of the Magister, was now retired, and took care of Doamna during all her life) and in Sanda Theodorini (the daughter of Magister’s sister, who lived in the apartment situated at the 2nd floor of the house on Strada Școalei, and who controlled daily Doamna’s blood pressure when she returned from her physician’s activity at the Polyclinic). Often in the evening Doamna took the stairs to Sanda’s apartment for looking at TV or a rented movie.

Also Doamna received often her coworkers’ visits either for scientific advice, or just to bring news from the Center. They were always received with pleasure, and she often included in the conversation a fine irony and a lot of good humor to accompany some small aperitif. She was interested in personal details, gave advice when this was requested, and often this advice was followed. She was exacting with herself as well as with others. She could find a nice and often joking way to admonish those who needed such an admonishment. Never too distant but never too familiar, Doamna inspired always respect by her distinction and elegance. She was extremely tactful, generous, consequent with herself, showing tenacity and willingness to help. A nice example was her success in helping her coworker, Dr. Iuliu Poganyi, to purchase a Trabant car by withholding every month part of his salary because he was never able to set money aside.

My family comes from Târgoviște, not far from Moroieni. When I told my father that one of my professors was called Ciorănescu, he replied that in the early 1900s, the Minister of Education, Spiru Haret, had sent in Germany a teacher (Ion Ciorănescu) for learning how to help handicapped children. In the early 1990s I accompanied Doamna to her summer house in Bușteni, and saw the Ciorănescu house in Moroieni. Ion Ciorănescu had left it to his sons. In 1996 from these sons only Alexandru was alive and when he came to Roumania I accompanied him to this house in Moroieni; he donated the second floor for a “Ciorănescu family museum” under the care of a philologist from the Museum of Roumanian Literature.

During the summer of 1995 my daughter’s daughter, Maria Alexandrescu, spent her summer holidays in Roumania and Doamna entrusted to me the keys of her house in Bușteni. This story was repeated during the following summers, with the effect that our grand-daughter loves the Bușteni Mountains with its crests, valleys, and forests. We spent the summer of 1996 in Bușteni with our grand-daughter Maria and with Alexandru Ciorănescu who was writing a volume of his memoirs. Doamna loved children, she liked to play with them, to show them interesting things, and to tell them the names of mountain flowers. I believe that our grand-daughter still has the rose-decorated head-dress she had brought her in 1966 from the Congress in Cork.

A week before she died, I had called her telling her that “I invite her to dinner at her home”. My husband and I brought perch with mayonnaise that she liked, but Doamna was not yet ready so that I sent away my husband for half an hour during which time I set the table. When she appeared, Doamna was dressed and perfumed as she used to be when visiting another household. This is the last image I keep for Doamna Ecaterina Ciorănescu-Nenitzescu. On January 20, 2000 in a very cold weather I accompanied her coffin for her last voyage.

Doina Constantinescu
June 2009

6. LIST OF PUBLICATIONS

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