

## Alexandru T. Balaban and our 62 year-young Friendship\*

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Our lives, Sandy Balaban's and mine run parallel for most of the last 62 years. 5 years separated our births, his in 1931 in Timisoara and mine, in 1936 in Paris. We both went to school in Romania, primary school, high school and University, he at the Polytechnic Institute in Bucharest and I at the Bucharest University. We met 62 years ago, I, an undergraduate at the University's Faculty of Chemistry, he already the rising star of Romanian chemistry at the Faculty of Industrial Chemistry, Ph.D. student of Professor Costin D. Nenitescu, then the *Magister* of Romanian Organic Chemistry. I had friends working there too, among others Justin Herscovici, with whom I did my military service at Sercaia, a village not far from Fagaras in Romania. Justin was brilliantly intelligent, with a vast literary and musical culture and he intensely admired Sandy Balaban, the chemist. The curiosity awakened by Justin Herscovici's words made me try to meet Sandy and the opportunity arose at one of the memorable public meetings of the Academy's Chemistry Section.

1957 was a difficult year in Romania, one year after the suppression of the upheaval in Hungary. The atmosphere was leaden, fear was all-pervading.

People were tense and worried. Conversations, even among friendly colleagues, were limited and bore witness of the existing situation. In this environment the meeting with Sandy was an exception. I was deeply impressed by his luminous intelligence, the clarity of his explanations, the scientific rigor of his answers to my questions. He was different, truly an intellectual powerhouse. I met him and heard him speaking at several of those Meetings and, besides the power of his intellect, his encyclopedic chemical knowledge was outstanding. After a number of teaching assignments and teaching positions, he was offered by Prof. Horia Hulubei, the Founder and Director of the Institute of Atomic Physics, the position of Head of the Research Group on radioactively labeled molecules, at the Institute, which Sandy Balaban took.

When I graduated in 1957, I was appointed, together with a number of my colleagues, an auxiliary Research Fellow at the Institute of Atomic Physics. A few months after starting at the Institute I obtained a scholarship to work towards a Ph.D. degree at the Humboldt University in Berlin and I left the Institute in May 1958. I spent in Berlin more than 3 years, obtained my doctoral degree and did some post-doctoral work. During this time Sandy visited the Berlin Institute where I was working and we had again many interesting and stimulating scientific discussions and we even committed together the ultimate sin, i.e. we went to West Berlin to the movies and saw the magnificent *Gone with the Wind!* It was before the erection of the Berlin Wall in August 1961.

I came back to Bucharest in July 1961 and resumed my work at the Institute of Atomic Physics and as a lecturer of Physical Chemistry at the Institute of Petroleum, Gas and Geology in Bucharest. I saw again Sandy at the open Communications Session of the Academy's Chemistry Section and we had many opportunities and subjects to discuss.

In 1963 I left the Institute of Atomic Physics and moved to the newly created Center of Radiobiology of the Ministry of Health as its director. In this capacity I frequently consulted with Sandy. His reputation as a major scientist was growing also internationally and he was truly the rising star in the Romanian scientific landscape.

In the meantime the situation in Romania was improving. The departure of the Soviet Army from the country in 1958 marked the beginning of important changes. The pressure, the fear, the feeling of being under constant surveillance relaxed gradually. The contacts with the West were resumed in many areas and people, especially the young generation of scientists were again timidly hopeful. Starting with 1962 a feeling that major changes were under way became pervasive in many sectors of the Romanian Society. The political prisoners started to be released and names of distinguished intellectuals, writers, poets, philosophers, historians of the pre-war era, names which had been banned during the last 14-15 years were mentioned again in the media, some of their work was published etc.

I remember very vividly that one day in April 1963 my father, who was a member of the bureau of The Praesidium of the Academy, came home from a meeting of that Bureau and told us, my mother and their children, that something unusual had happened at the meeting. After lively discussions it was agreed that Alexandru T. Balaban, Victor E. Sahini and Nicolae Cajal's names be submitted to the General Assembly of the Academy for election as Corresponding Members. The General Assembly of the Academy elected them with great majorities. Sandy was by far the youngest member ever elected to the Academy since Nicolae Iorga. For the scientific research in Romania this election was a turning point. It brought *fresh air* in the Institution and, the great respect which the Academy enjoyed in the Country since its inception (1866), gave to this election the status of a signal that something was changing. Sandy's election, at Nenitescu's proposal, indicated clearly that the *Magister*, as he was called by his collaborators and students, saw in his former student, Sandy Balaban, his successor, capable to direct scientifically, continue and develop the School which he had created, despite the fact that Sandy was one of the younger collaborators. And indeed, soon afterwards Sandy became full professor, first of General Chemistry, then of Organic Chemistry at the Polytechnic Institute, Bucharest, where he taught until his retirement in 2000. Costin Nenitescu died in 1970. Life, or those events in life upon which we have little influence, caused Sandy Balaban's research field to shift gradually from Organic to Theoretical Chemistry.

There was little doubt that Victor Sahini would be *primus inter pares* at the Chair and at the Institute of Physical Chemistry and, given the general circumstances at the time, Nicolae Cajal appeared as Stefan S. Nicolau's designated successor at the Chair and at the Institute of Virology. In the case of Nenitescu's succession at the Chair and at the Center for Organic chemistry things happened differently and Sandy Balaban did not take the "Magister's" succession.

I wish to insist briefly, as I did with other occasion, on the significance which Sandy's Academy election at his young age had in Romania of those years. It was first and foremost his exceptional scientific talent, his originality and independence in his

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research, which were recognized and rewarded. But, at the same time this election indicated that the road was open for talent and hard work. It had a great moral effect on the large cohort of young researchers in the Academy's research Institutes and in the Universities. And then, in 1963 the election of Alexandru T. Balaban, Nicolae Cajal and Victor E. Sahini showed that scientific achievement and honest, hard work were rewarded despite the fact that in the area of Chemistry at least, especially at the Bucharest University there were many politically super-active, mediocre and sub-mediocre teachers and researchers who besieged the Academy in order to be elected and never were.

In 1967 Balaban was appointed an International Officer (P5) at the International Atomic Energy Agency in Vienna (IAEA). He brought there the prestige of the gifted and productive scientist, his vast chemical knowledge and excellent command of English. I had the pleasure to enjoy the Balabans' warm hospitality in Vienna during a short visit there in 1970.

Towards the end of 1969 Sandy, in his capacity of International Officer of the IAEA came to Israel, to the Weizmann Institute with the Agency's business. I was there, since January 1969, with interruptions, as a Weizmann Fellow. Sandy interacted there with some of the leaders of the Institute, and, in the evening of December 24 we went together to Bethlehem, to the Nativity Church, a IVth century building to attend the Catholic Christmas Mass. The Church, according to tradition is built on the spot where Jesus was born and the place before it is where the shepherds were blinded by the Big Star's light and the choir of the Angels sang: *Gloria in excelsis Deo et in terra pax hominibus bonae voluntatis*. The Church was full and so was the place before it. An extraordinary atmosphere of joy and hope reigned and the idea that we were standing where 1969 years ago Jesus Christ was born moved us deeply. We were re-living the beginning of the greatest story ever told, the one which changed permanently the face of the world.

After the Mass we drove back to Rehovoth in a pensive and grateful mood.

In 1971 the entire Balaban Family returned to Bucharest, where Sandy resumed his activities as researcher and teacher. In the same year, after a long absence from the Country I came back to Romania and became full professor of Biology and Chair of the Department of Biology-Genetics at the newly created University of Craiova Medical School. We interacted scientifically and socially and the Balabans participated with warmth and sensitivity to the loss of my son and of my parents, which happened at that time.

We even traveled together to international scientific meetings like the one on Free Radicals organized at Akademgorodok, near Novosibirsk in the USSR, in 1968. The Siberian trip was amazing. The science at the Meeting was excellent, not surprising given the quality of the international and Russian participants. And the vastness of the land, the *white nights*, the huge river Obi and the artificial lake on whose shores the Academic City had been erected were all overwhelming.

Sandy's pre-eminence in Romanian and International Chemistry became more and more established. He had a significant number of former and present Ph.D. students, published exciting scientific papers, gave very interesting lectures at National and International Meetings. Unfortunately, after the Ceausescu's visit to China and North Korea, they decided to start a *mini cultural revolution* in Romania. Contacts with the West became increasingly difficult, travel to Scientific Congresses and Conferences, promotion of scientists had to be approved by malevolent and ignorant Elena Ceausescu etc. No western scientific journals were coming anymore. All the relative *detente* which had taken place in the Country between 1962 and 1972 and had given impulses to scientific research and in general to life in Romania was going to be strangled. In 1973, with the decisive help of my dear friend Constantin Babalau I left Romania with an invitation to come and work as a Visiting Scientist at the Max-Planck Institute of Radiation Chemistry in Muelheim/Ruhr for 3 months. The 3 months became 8 years. Sandy Balaban was invited by the Managing Director of the Institute Prof. Oskar E. Polansky to give a Seminar at the Institute and discuss with him and his associates scientific problems of interest to both of them. I had already been appointed Associated Professor and Head of Laboratory at the Institute and I was delighted to see Sandy there. We had so much to discuss!

We left, Sandy, my wife Christa and myself early next day and drove to Bremen, where, on a beautiful summer day, we bought roasted chickens, which we went to eat under a majestic oak in the City's public park.

Sandy's main scientific interest shifted towards Theoretical Chemistry, namely the use of the Graph Theory in Chemistry. He was and is considered a pioneer of such studies and the recently published Festschrift confirms the high respect and admiration he enjoys in that field of research.

I had the great pleasure to host Sandy Balaban for 2 months in my laboratory at the Harvard Medical School, Center for Blood Research in Boston, MA, where we could discuss many interesting problems at the frontiers of Chemistry and Biology.

Sandy accepted in 2004 the Vice-Presidency of the Romanian Academy, at the request of my late brother-in-law Virgiliu N. Constantinescu, President of the Academy at the time. He spent 4 years in Bucharest, which were beneficial for the Academy, especially for the Chemistry Research at the Academy Institutes. After this stint at the Romanian Academy, Sandy came back to the USA and, most extraordinarily, he was offered, at the age of 70, a tenured full professorship at Texas A & M University in Galveston, TX. There is hardly a more convincing proof of the intensity of the desire of an American University to count a particular individual among its faculty!

Our friendship was born, has developed and deepened during the last 62 years of our lives, which run parallel for most of these years. I am proud, after all these years to be able to claim that I am Alexandru T. Balaban's friend and his family's friend. Silviu, his gifted son, a distinguished chemist himself, worked with me at the CNRS/University of Strasbourg with excellent results. After a few years in Professor Jean Marie Lehn's laboratory he is now professor at the University of Marseille in France.

Alexandru T. Balaban, now at the age of 85, can look back to a brilliant scientific career, with many important contributions to different areas of Chemistry Research, on a long and eminently successful teaching career, many former Ph.D. students some of whom are continuing and developing the areas where they started working under Sandy's direction. The scientific community has shown its appreciation and respect for Sandy's contributions awarding him prestigious prizes, medals, citations.

The aim of my lines was to give an image of my friendship with Sandy Balaban the man, the colleague. Passionate scientist, hard-working teacher, supporter of talented young chemists, his life in science is a model for future generations of scientists.

I was fortunate to know him for a long period of our (parallel) lives and my feelings for him are what they always were: respect, admiration and affection.

Happy Birthday, dear Sandy!