

*Dedicated to Professor Alexandru T. Balaban
on the occasion of his 85th anniversary*

ALEXANDRU T. BALABAN – MY FRIEND OF 62 YEARS

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I met Alexandru T. Balaban (Sandy) for the first time 62 years ago, as an undergraduate student at the Faculty of Chemistry at the University Bucharest. He was already a star of the Roumanian Chemistry. Sandy worked at the Faculty of Industrial Chemistry, a former Ph.D. student of Professor Costin D. Nenitescu, the “Magister” of Roumanian Organic Chemistry at the time. I had friends there, among others Justin Herscovici, with whom I did my military service at a village called Sercaia, not far from Făgăraș. Justin was brilliantly intelligent, with a vast literary and musical culture and he intensely admired Sandy Balaban. The curiosity awakened by Justin Herscovici’s words made me try to meet Sandy and the opportunity arose during one of the memorable public meetings of the Academy’s Chemistry Section.

1957 was a very tough year in Roumania, just one year after the Hungarian upheaval. The atmosphere was leaden, fear was detectable everywhere. 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 truly outstanding. After a number of teaching assignments and scientific positions, he was noticed by Prof. Horia Hulubei, the Founder and Director of the Institute of Atomic Physics, who offered him the position of Head of the Research Group on radioactively labeled molecules at the Institute.

When I graduated in 1957, I was appointed 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 obtaining my Ph.D. and doing some post-doctoral work. During this time Sandy visited me once 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 that magnificent Masterpiece, “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 an Assistant Professor of Physical Chemistry at the Institute of Petroleum, Gas and Geology in Bucharest. I saw again Sandy at the open Communications Session of the Chemistry Section of the Academy 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, in which capacity I consulted frequently with Sandy. His reputation as a major scientist was growing and he was truly the rising star in the Roumanian scientific landscape. In the meantime

the situation in Roumania 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 a kind of permanent 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 at many levels of the 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 by 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 Roumanian Academy, came home from a meeting of that Bureau and told us, my mother and his children, that something unusual happened at the meeting. After lively discussion at the Bureau's Meeting it was proposed that Alexandru T. Balaban, Victor E. Sahini and Nicolae Cajal be elected as corresponding Members of the Academy. The names were proposed to the General Assembly of the Academy which elected the three scientists, with great majorities. Sandy was by far the youngest member elected to the Academy.

For the scientific research in Roumania this election was a turning point. It brought fresh air in the Institution and, with the great respect which the Academy enjoyed in Roumania since its inception (1866), it made clear that something was changing. Sandy's election, at Nenitzescu'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 his younger collaborators. And indeed, soon afterwards Sandy became full Professor, first for General Chemistry, then for Organic Chemistry, at the Bucharest Polytechnic, where he taught until his retirement in 2000. Costin Nenitzescu died in 1970. Life, or those events in life on which we have little influence, caused Sandy Balaban's research field to shift gradually from organic chemistry to theoretical chemistry

There was little doubt that Victor Sahini would be the *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 designed successor at the Chair and at the Institute of Virology.

I wish to insist briefly on the significance which Sandy's 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 research, which were recognized and rewarded. But, at the same time, this election indicated that the way had opened 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, Victor E. Sahini and Nicolae Cajal indicated 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!

For all these reasons the election of Alexandru T. Balaban to the Academy (together with that of Nicolae Cajal and Victor E. Sahini) represented an important event in the scientific life of Roumania.

In 1967 Balaban was appointed an International officer (P5) at the International Atomic Energy Agency (IAEA) in Vienna. He brought there the prestige of the gifted and productive scientist, his vast chemical knowledge and excellent mastery of English. I had the pleasure to visit the Balabans in Vienna, where I was received with warm hospitality. In 1971 the entire Family came back to Bucharest and he resumed his activities as researcher and teacher. In the same year, after a long absence from the country I returned to Romania and became tenured professor of Biology and Chair of the Dept 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 affected me profoundly. 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 outstanding. 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 Roumanian 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 the country. Contacts with the West became increasingly difficult, travel to Conferences and Congresses had to be approved by the malevolent and ignorant Elena Ceausescu etc. All the relative "détente" which had taken place in Roumania between 1962 and 1972 and had given impulses to scientific research and development and in general to the life in the country was going to be strangulated. In 1973, with the decisive help of my dear friend Constantin Babalau I left Roumania with a 3-month invitation as Visiting Scientist to the Max-Planck Institute of Radiation Chemistry in Muelheim/Ruhr. The 3 months became 8 years. Sandy Balaban was invited by the Managing Director of the Institute Oskar E. Polansky to come and give a Seminar at the Institute and discuss issues related to their common interests in Mathematical Chemistry. 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, Sand, my wife Christa and myself next day and drove him to Bremen, where, on a beautiful summer day, we bought roasted chicken, which we went to eat under a majestic oak in a public park in Bremen. Sandy's main scientific interests 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 confirm the high respect and admiration he enjoys in that field of research.

I had the great pleasure to be able to host Sandy for 2 months in my laboratory at the Harvard Medical School, Center for Blood Research in Boston, where we could discuss many interesting problems at the frontiers of Chemistry and Biology. Sandy accepted in 2004 the vice-Presidency of The Roumanian Academy at the request of my late brother-in-law Virgiliu N. Constantinescu, President of the Academy during that time. He spent 4 years in Bucharest which were beneficial years for the Academy, especially for the Chemistry Research at the Academy. After this stint at the Roumanian 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 a major American University to count among its Faculty a particular individual.

Our friendship has developed and deepened during the last 62 years. I am proud after such a long time to be able to say that I am Alexandru T. Balaban's friend, his friend and his family's friend. Silviu, his gifted son, a distinguished chemist himself, worked with me at the University of Strasbourg with excellent results. After a few years in Professor's Jean-Marie Lehn laboratories he is now himself a professor at the University of Marseille, in France.

Alexandru T. Balaban, now at the age of 85, can look back on 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 who 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.

My lines aimed at giving 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. I was fortunate to know him for a long period of our lives and my feelings for him are what they always were: respect, admiration and affection.

Happy Birthday, dear Sandy!