FROM IDEA TO ACHIEVEMENT - FROM THE EXPERIENCE OF A BIOLOGIST

CORNEANU C. Gabriel, CORNEANU Mihaela

Abstract. The present paper is a guide addressed to young faculty graduates, meant to help them to develop until reaching maturity and professional fulfilment. Some concepts, statements and guidelines from the lives of reputed scientists and people of culture are presented initially. There are discussed aspects of professional training in different branches of biological sciences: hydrobiology, environmental mutagenesis, medical genetics, cytogenetics, biotechnologies, evolutionism, etc. Each one presents the mentors who contributed to the formation of the young scientist, the scientific priorities achieved, and so on.

Keywords: biology, short biography, principles in scientific research.

Rezumat. De la idee la realizare - Din experiența unui biolog. Prezenta lucrare este un îndrumar adresat tânărului absolvent de facultate, în scopul dezvoltării sale până la maturitate și implinirea sa profesională. Inițial sunt prezentate câteva concepte, afirmații și îndrumări din viața unor reputați oameni de știință și cultură. Sunt discutate aspecte din pregătirea profesională în diferite ramuri ale științelor biologice: hidrobiologie, mutageneza mediului ambiant, genetica medicală, citogenetica, biotehnologii, evoluționism, etc. La fiecare sunt prezentați mentorii care au contribuit la formarea tânărului om de știință, prioritățile științifice realizate, și altele.

Cuvinte cheie: biologie, scurtă biografie, principii în cercetarea științifică.

In the thesaurus of different peoples, personalities and their culture, there are many recommendations on how to behave. Their knowledge will guide our behaviour in difficult situations and will enable the elaboration of appropriate responses. You will be pleased.

* Establish milestones with accurate and reasonable achievements over time, with appropriate answers for each action and be pleased (G. C. Corneanu, Biology graduate, 1965).

* With my life, I defend your life (Universita degli Studi di Torino, Italy; a similar thinking is found at NATO, Biology Dept., BNL, Upton, USA);

* Never the second! (the motto of the Kennedy family);

* Better to do and to repent than to not do and repent (King Baudion, Belgium, the beginning of the 20th century);

* If you want, you can! (applied within fair moral limits, multiple origins);

* Better his mother cry than my mother (originating in Oltenia);

* Do not regret having missed an opportunity; soon you will meet a better one (Vasile Alecsandri);

* Do not regret that you took a road and broke your leg; on another road, you could have broken both of them (diverse origins, etc.):

* Bad, but good; characterization made by one of the first generations of students in Craiova: bad because I did not accept any favours; good because I favored the worthy;

* Believe in yourself and your actions; do not abdicate, because hope dies the last (urge!).

During our professional training, we need to know as many aspects as possible about the topic we want to address and have reputable specialists as mentors, because they can guide our work. It is not enough to confirm the researches or their discoveries, but to bring new arguments and applications. It is preferable to continue over time the researches from the beginning of our activity, ensuring their completion. In this case, family, age, social conditions, all display a great importance. In my case, I consider I was favoured by fate. In my childhood, the ambiance offered by the family was made up of remarkable personalities of the Romanian culture, such as Elena Ivănescu, the niece of Vasile Alecsandri, who gave me important information about the great writer's life (the conspiratorial home from Mirceşti from the Siret meadow; the place of his birth in 1821, the year of Tudor Vladimirescu's 1821 revolution, some of the writer's personal objects and the remaining manuscripts). By the middle of the 20th century, one of his nephews (the forest engineer, Ivănescu) was a neighbour of General Ion Antonescu, the future marshal and politician, at Curtea de Argeş. I am the nephew of renowned men of culture - Vasile G. Paleolog, friend of the famous sculptor Brâncuşi and Acad. Prof. Dr. Nicolae Corneanu, Metropolitan of Banat. In my childhood, my father with Dr. Ion Firu (Head of Natural Sciences Section and Director of the Oltenia Museum) conducted the first diorama at the museum. I saw then variability and adaptation of organisms to the environment and I decided I would be a biologist.

Activities in the social field. The activities carried out in the social field during the secondary school (grades 5 to 7, General School no.12, Craiova) and the very good results obtained during this period represented a recommendation document (or a passport) for future activities. Our school won the first place in the city for the quality of education, the household activities in the school and its neighborhood, for gathering building materials from the 4st district (the name of the regiment that defended the city in the First World War). Thus, the school was rewarded with a weekly free subscription for 2 years offered by Craiova School Inspectorate. In addition, for many years, photographs of the event were exposed at the monumental entrance in Romanescu-Bibescu Park. Moreover, it was not commented

upon the fact that my father was arrested and imprisoned for several months after the Communists took charge of the Prefecture of Dolj County, Craiova (January 24, 1946). After his liberation (action involving friends and relatives), he was employed at the Russian Military Airport in Craiova. There, I made my first flight in a Russian biplane, taking the place of the co-pilot who remained on the ground (I was not even seven years old!). I graduated from the high school (*Nicolae Bălcescu* Popular College, presently known as *Carol I* National College Craiova) in 1965. I also had the chance to have wonderful teachers and colleagues, the school leadership organizing meetings of the school students with alumni who came from abroad, such as Ion Petrescu Maciste, then Prof. Dr. Andrei Ion, etc.). Among my college colleagues, I mention Costin Georgescu (former director of RSS), Cornel Popescu (former BCR director), Octav Calleya (conductor of the Symphonic Opera in Murcia, Spain), and others.

The quantitative accumulations during the high school years and, then, the **Faculty of Biology, University of Bucharest**, represented the basis for my further development and training as a ***biologist***. Due to the limited study time, which involves a consistent effort, I gradually renounced to some practical activities (performance sports, etc.). During our training, we benefited from an exceptional teaching staff (the best in Romania), the facilities offered by the University of Bucharest, which had two Didactic Stations in Brăila and Sinaia, the Research Institutes located in Bucharest and other neighbouring localities, together with numerous memorial houses, in which various specialists lived and worked, from whom I received information (Gh. Tătărăscu, Bucharest, painter; Nicolae Grigorescu, Câmpina, painter, etc.).

* **Activities and social implications that have attracted the attention of security organs**:

- The altercation in the US embassy yard in Bucharest, with foreign students and recovery of the US flag from their hands;
- Presentation of Condolence at the US Embassy in Bucharest, after the assassination of President J. F. Kennedy, together with some faculty colleagues, personally invited by me;
- Obtaining materials from the US Embassy in Bucharest (leaflets and posters) related to the Kennedy family;
- Personal reception of a thank-you letter for my attitude from the US Ambassador and US Secretary of State.

Events or actions that I attended after graduating from the faculty, becoming a scientific researcher at *Stejarul* Research Station Pângărați, Faculty of Biology and Geology, Iași:

- Cancellation of the union elections at Stejarul Resort, due to the vitiation of legal procedures (Pângărați, October 1965). My request was drafted and submitted from the office of the President of Bacău Region Council, who was my sister-in-law's uncle from Plopeni.
- Photographing some tourist aspects in Iron Gates area. When I arrived in Craiova, the security organs checked my camera (fortunately, I was with my brother, engineer Costinel Baciu, Director at one of the underground plants at UM-Plopeni);
- Visiting a factory at U.M. Plopeni with the approval of that time General Manager, Minister Ion Dinca.
- Participation in some family events at my brother, engineer Baciu Costinel (the death of his adoptive parents, the baptism of a niece), etc.

Field investigations and documentation, carried out in the first years after I obtained the position of teaching assistant at the University of Craiova (Biology-Genetics, then Plant Genetics and Breeding), until my doctoral admission (Cluj, January 24, 1970):

- Initiating certain research regarding the effect of exogenous factors (ionizing radiation and other stressors) on genetic material (plants and humans);
- Visiting the underground energy unit in Tismana, Gorj;
- Investigations in the area with endemic nephropathy (1962-1970, Erghevița, Mehedinți (approval from the Health Ministry, Bucharest);
- Investigations in the mining area of Ciudanovita (approval from the Ministry of Mines, Rare Metals Directorate (one month every year, in 1968, 1969, 1970), etc.;
- Approval of the security organs to have collaborative relationships with foreign specialists in research projects: Prof. Dr. A. H. Sparrow, BNL, Upton, USA; Prof. Dr. Harold H. Smith, BNL Upton, USA; Prof. Dr. Silvano Scannerini, University of Torino, Italy; Institute of Plant Genetics, Gatersleben, Germany, etc.). Through this action, we introduced in Romania valuable genotypes of cultivated plants (tomatoes, cucumbers, lettuce, etc.) that were greatly appreciated by the specialists from the country. Among them, I mention especially those who worked in Craiova, which became a unit of excellence in Romania in the field of horticulture (some of them were my professors in Bucharest): Prof. Dr. Ion Maier, Prof. Dr. Ștefan Teodorescu, Prof. Dr. Mircea Oprean, Prof. Dr. Mircea Bălașa; Prof. Dr. Ion Brad; Prof. Dr. Ion Safta, Prof. Dr. Doc. Ion F. Radu, Prof. Dr. Liviu Pop, Prof. Dr. Vasile Sonea, Prof. Dr. Ion Ceaușescu (USA Bucharest), etc. I was also provided an optimum research material base at Șalnița Vegetable Research Station (Research Unit) and another at the Șalnița-Almăj Greenhouse Enterprise (cultivation in industrial greenhouses). All these were achieved by applying the principle ***if you want, you can***!
- Communicating and publishing the research results in different national and international publications.

Transfer and didactic and research activity at the University of Craiova (activities developed successively at the Faculties of Biology, Agronomy, Horticulture and General Medicine). At the Faculty of Agronomy and Horticulture, where I had shown passion and qualities for research, I was provided two optimum research facilities in the field of vegetables: one at the Isalnița Vegetable Research Station (director, Dr. Gh. Bulugiu) and the other at theIșalnița Greenhouse Enterprise (director, Dr. Ion Sandu), "being protected" from the inherent social problems. The Faculty of General Medicine provided me with another material base that was also very well equipped, where I conducted studies on animals (laboratory mice) regarding the effects of some bioactive mutagenic or radioprotective substances, at ultrastructural, cytogenetic and biochemical level.

Fields of activity to which I contributed with priorities.

1. Hydrobiology.

Mentors. Acad. Prof. Dr. Ștefan Procopiu, *Gh. Asachi* Technical University, Iași, Research Group for the Nobel Prize (Bârlad 1890 - Iași, 1972).

Gh. Asachi Technical University, Iași, Research Group for the Nobel Prize, Bârlad, Faculty of Chemistry, Acad. Prof. Dr. Doc. Ștefan Procopiu (Bârlad 1890 – Iași 1972), a member in the Nobel Commission, discovered the magneton and calculated its value a year before Niels Bohr (Bohr-Procopiu magneton). I received information about the factors that interact with ionizing radiation and alter their action. We also discussed changes in the physical constants of the environment during the sun's partial eclipse of May 20, 1966. Information about the solar eclipses was received from all the specialists approached: Prof. Dr. Sergiu Carăușu, UAIC Iași, Biology Department; Prof. Dr. Dumitru Carăușu, UAIC Iași, Biology Department; Acad. Dr. Rodewald Rudescu, the Romanian Academy, Bucharest; Dr. Alexandrina Negrea, the Institute of Speleology, Bucharest; Dr. Ștefan Negrea, the Institute of Speleology, Bucharest. I also approached the staff of the Hydrobiology Department of *Stejarul* Station, Piatra Neamț: Gabriel C. Corneanu, Ionel Carăușu – Phytoplankton; Dr. Ionel Miron – benthos; Constantin Grasu – Geology; Valerian Ciaglic – Hydrology; Ioniță Ichim – Geochemistry; Dan Munteanu – trophic chains; Constantin Crăciun – Chemistry. The investigations followed two aspects: (a) the presence of new phytoplankton species (*Rotifera, Cladocera, Copepoda* or *Harpacticoida*); (b) Vertical migration of the zooplankton during the partial solar eclipse of May 20, 1966.

Research fields.

(a) **New zooplankton species in the reservoirs located on the Bistrița valley** (Poiana Teiului – Piatra Neamț sector).

(b) **Partial solar eclipse (May 20, 1966)**.

The modifications appeared during the partial solar eclipse (May 12, 1966) were analyzed from the *Emil Racoviță* research ship (A. I. Cuza University, Iași, Faculty of Biology and Geology). The observations were made in the areas of the Barrage and Rugineşti golf, at various depths: 0-5 m, 5-10 m, 10-20 m, 20-30 m, 30-40 m, 40-50 m. The water samples containing zooplankton were taken at five different times: (a) one hour before the eclipse; (b) at the beginning of the eclipse; (c) during the maximum phase; (d) at the end of the eclipse; (e) one hour after eclipse. In case of each depth, we measured: brightness; water temperature; air temperature. Samples were brought to the laboratory of "Stejarul" Station, being sorted by groups of zooplankton, processed and, then, sent to systematician specialists, from the country and from abroad. The final values were processed by analysing the average and the variance.

Total solar eclipse. In the last part of the 20th century, our team conducted a study on the effects of the total solar eclipse on the biochemical and haematological changes recorded in a population of laboratory mice (*Mus musculus* L.). Investigations took place at Curtea de Argeș, where, during the eclipse (including its maximum phase), the solar disk was covered for 12 minutes, the "crown of diamond" around it being thus visible. During the eclipse, there was a clear sky (0% nebulosity). A summary of these investigations was printed in the volume **Abstracts** edited by the Romanian Society of Biophysics.

Recognition / Citation in Reference Works

a. **Citation, the presence of a new species of *Copepoda*** in the analyzed area. C. B. Wilson, 1968 – the Smithsonian National Museum of Natural History, The World of Copepoda. Monograph.

b. **The Effect of the Partial Solar Eclipse**, May 20, 1966. Similar results were obtained by the specialists of the Research Station from Sevastopol, Crimea, in the study of the same eclipse.

2. Radiobiology

Mentors: Acad. Prof. Ștefan Procopiu, UAIC Iași; *Gh. Asachi* Technical University, Iași Faculty of Chemistry; the effect of ionizing radiation and the magnetic field on cytogenetic changes in plant species; Prof. Dr. C. C. Zolyneak, UAIC Iași, Faculty of Biology and Geology, Genetics, cytogenetic changes induced by different stress factors; the interaction between stress factors; Prof. Dr. I. Tudose, UAIC Iași, Genetics, cytogenetic changes induced by stress factors; Prof. Dr. Arnold H. Sparrow, BNL Upton, USA, Chromosomes and cellular radiosensitivity; Prof. Dr. Harold H. Smith, BNL Upton, USA; Radiobiology; Prof. Dr. Andreas Lazanyi, ICB, Cluj-Napoca, radioprotectors and chemical radiosensitizers; mutagenesis in plant breeding; changes induced by radiation and other stress factors; radioprotective substances; radiotaxa, cellular sensitivity, etc.

*** Recognition: Citation in Reference Works**

- The effect of radiation on *Lactuca sativa* species; Works quoted and commented: *M. Z. Haque, M.B.E. Godward, 1984 – Genetica **65**: 179-186; *M. Z. Haque, M.B.E. Godward, 1984 – Rev. Brasil. Genet. **8**: 709-721; *M. Z. Haque, M.B.E. Godward, 1984 – Seed. Sci. Technol. **14**: 611-617.

3. Human cytogenetics.

*** Mentors**: Prof. Dr. Doc. Ioan Moraru, IML Bucharest; Prof. Dr. Doc. Alexandru Caratzalis, IML Bucharest; Prof. Dr. Ştefan Antohi, IML Bucharest: mutagen factors and the reparatory process.

*** Cytogenetics**: mentors: Prof. Dr. Arnold H. Sparrow, BNL, Upton, USA; Prof. Dr. Harold H. Smith, BNL, Upton, USA; Prof. Dr. Andreas Lazanyi, the Romanian Academy, Cluj Branch, Romania; Italy, Prof. Dr. Silvano Scannnerini; Prof. Dr. Doc. Ştefan Procopiu; Prof. Dr. C. C. Zolyneak; Prof. Dr. I. Tudose; Prof. Dr. A. H. Sparrow, Brookhaven National Laboratory, Upton, USA; Prof. Dr. Harold H. Smith, Upton, BNL, USA; Prof. Dr. Ioan Moraru, IML Bucharest (Nobel Prize for Peace, 1985); Prof. Dr. Docent Alexandru Caratazalis, UMF Bucharest; Prof. Dr. Ştefan Antohi, IML Bucharest.

Specialization Course at UMF Bucharest, Faculty of Specialization of Physicians and Pharmacists, Bucharest (1968-1970).

Priorities:

- **Chromosomes and cellular radiosensitivity:** ICV (interphase chromosome volume); Q DNA / chromosome; the presence of eu- and heterochromatin; particular types of chromosomes; the position of centromeres in the nucleus; calculating the ICV value according to the presence of eu- and heterochromatin.
- **Natural antimutagenic substances and the reparatory process in humans** (subject in the practical work at the graduation of the specialization course in Human Cytogenetics, Prof. Dr. I. Moraru, Dr. A. Caratzalis, Prof. Dr. Ştefan Antohi).
- **Adaptation of organisms to the stress factors**.

4. Paleontology and Evolution. The emergence and evolution of life.

*** Mentor:** Prof. Dr. Ioan Bucur, *Babeş-Bolyai* University, Cluj-Napoca, Department of Geology Paleontology.

*** Theoretical Aspects in Human Evolution. Ways of monkey humanization. Traces of the humanization process.** Some of the oldest traces were found on the current territory of Romania, at Bugiulesti, Tetoiu, Vâlcea. In the middle of the 19th century (1956), the archaeologist C.S. Nicolăescu-Plopşor discovered traces of the presence of pre-human species, ***Australopithecus alutensis, A. olteniensis***, characterized by the use of long bones as tools and to extract bone marrow, which was a food source. The discovery was confirmed by the famous anthropologist, Raimond Dart, arrived in Romania, in Craiova, where I had the honor of meeting him at my uncle's house, Professor Petre Fetoiu (I was a child at that moment). Subsequently, various other personalities were involved in the confirmation or the refutation of this material evidence (Dr. Dardu Nicolăescu-Plopşor from Romania, specialists from Cluj-Napoca, Belgium, etc.). Based on these material traces, some anthropologists considered the traces of the pre-human activity discovered at Bugiulești, also belong to other species (***Australanthropus carpathicus,*** Dardu Nicolăescu-Plopşor). These traces are believed to be around 1,800,000-2,000,000 years old and are preserved in the collection of the Museum of Natural Sciences (History) from Craiova.

5. Cellular Biology

Mentors and collaborators: Prof. Dr. Constantin Craciun, UBB Cluj-Napoca, Acad. Prof. Dr. Gheorghe Benga, UMF Cluj-Napoca. In this field, the Nobel scientist George Emil Palade affirmed himself.

Research fields:

- Ultrastructural features under normal and stress conditions;
- Cellular structures involved in the adaptation processes to environmental factors: Loose nucleolar bodies (LNB's), body-guard, cell division
- Water channels and ions channels, etc.

Research priorities:

- ultrastructural changes in simulated extraterrestrial environment;
- cell division process;
- ultrastructural changes in the process of adaptation of plant and animal populations to stress;

6. Biotechnologies

*** Mentors**: Prof. Dr. Dorina Cachiţa-Cosma, Vasile Goldis West University of Arad; Prof. Dr. Doru Pamfil, USAMV Cluj-Napoca, Prof. dr. Ana Roşu, USAMV Bucharest.

* Cell cultures and vegetal tissues on classical environments.

*** Bioactive substances:** Prof. Dr. Gabriel Racz, UMF Targu Mures; Prof. Dr. Ursula Stanescu, UMF Iaşi; Prof. Dr. Emilian Grigorescu, UMF Iaşi; Prof. Dr. Paul Atyim, UVVG-Arad, Satu Mare Branch, etc.

*** Priorities**:

- new regulators of growth in processes of organogenesis and callogenesis;
- new gelification substances;
- explant response under simulated extraterrestrial conditions;
- cultivated plant populations adapted to stress factors: wastes with a high content of heavy metals and radionuclides, mineral salts, etc.
- environmental factors involved in the development of plant explants: magnetic field; electro-magnetic field; acceleration force; force of gravity; different bioactive substances.

***Citations, international recognition**: E. B. Herman, 1995 - Agricel Report, **25** (5): 33.E. B. Herman, 1997 - Agricel Report, **30** (3): 36.

Achievements in scientific research

*** Exchanges of specialists**.

* Reputed scientists accepted the invitation to lecture in Craiova:

Prof. Dr. Mike Smith, North Carolina University USA; Prof. Dr. Hideyuki Furukawa, Nagoya University; Prof. Dr. Junko Ebata, Osaka University, Japan; Prof. Dr. Nelo Bagni, Bologna University, Italy; Prof. Dr. Silvano Scanerini, Torino Degli Study University; Prof. Dr. Italo Barray, Ferarra University, Italy; Prof. Dr. Traianos Iupsanis, Aristotle University, Greece; Prof. Dr. Aristotle Scaltsoyanis, Aristotle University, Greece; Prof. Dr. Ivan Iliev, Sofia Forrest University, Bulgaria; Acad. Prof. Dr. Boris Matienco, Moldova Science Academy, Chişinău; .Prof. Dr. Petru Tarhon, Chişinău University, Prof. Dr. Sirichai Kanlayanarat, Bankok, Thailand, Prof. Dr. Valentin Boju, Montreal University, Canada, etc. (Figs. 1-4)

Figure 1. Prof. dr. Corneanu Gabriel in his lab in Craiova (2008).

Figure 2. Prof. dr. Gabriel Corneanu and Acad. Dan Munteanu in the Scientific Conference on Environment protection (Râmnicu Vâlcea, 2008).

Figure 3. Ass. prof. Maria Tzakira, Prof. Gabriel Corneanu, Prof. dr. Ivan Iliev, Prof. Dr. Aristotle Scaltoyanes, Prof. dr. Corneanu Mihaela in the Fifth International Conference "Propagation of Ornamental Plants" (Sofia, Bulgaria, 2007).

Figure 4. Prof. dr. Corneanu Gabriel, Prof. dr. Corneanu Mihaela, Prof. Dr. Sirichai Kanlayanarat (vice-president ISH) and dr. Wilawan Kanlayanarat in the International Conference "Horticulture in quality and culture of life" (Lednice, Czech Republic, 2014).

* From Romania, different specialists also held conferences: from Cluj-Napoca (Prof. dr. Nicolae Coman, Prof. dr. Dorina Cachiţa-Cosma, Prof. dr. Constantin Crăciun), from Iaşi (Prof. dr. Gheorghe Mustaţă, Prof. dr. Ion I.

Bâra), from Bacău (Prof. dr. Gogu Ghiorghiță), from Bucharest (Prof. dr. Ana Roșu, dr. Ioan Blada, Prof. dr. Gheorghe Mohan), from Constanța (Prof. dr. Rodica Bercu), from Timișoara (Prof. dr. hc. Gallia Butnaru), etc.

- We were also invited to hold conferences in other countries: University of Chișinău, Moldova; Osaka University, Japan; Aristotle University, Thessaloniki, Greece; Sofia University of Forestry, Bulgaria; University of Ferarra, University of Torino, Italy. Prof. Dr. Silvano Scanerini offered us a very nice surprise at Lions Club from Torino. The all assistance in full dress, with their hands on their hearts have intonated the club hymn for us.
- In addition, we had the honor of being part of international teams, alongside reputed researchers, to carry out research projects.
- At a national level, I have run numerous research grants.

Collaboration with specialists from territorial research associations (forestry, teaching, medical, environment protection and other), represents a source for research and knowledge of organism adaptation.

Specialist: Prof. Dr. Constantin Nețoiu, Prof. Dr. Viorel Lazăr, Prof. Dr. Petre Ploaie.

CONCLUSIONS

Individual development is dependent on the efforts made to obtain solid theoretical and practical knowledge in particular areas of biological science. The synthesis of these actions is presented in the parables transmitted by the forerunners. Different specializations can be followed after graduation. Examples of the activity carried out are accompanied by numerous milestones: the field of activity, the mentors who contributed to their formation, the priorities and the special achievements, their capitalization, and so on.

ACKNOWLEDGMENTS

In the achievement of this synthesis regarding the monitoring of the activity of young specialists who, meanwhile, became reputable scientists, the author has received the support of numerous scientists he has known since the mid-twentieth century. To all these mentors and collaborators, the author thanks for their trust and support over time.

Beside those reputable mentors and scientists, the author addresses sincere thanks to the numerous young people who have surrounded and helped him in his laboratory activities and in the field. Among them, I would like to mention the teams of specialists from the University of Craiova (Faculties of Agriculture and Horticulture), faculties and research institutes from Iași, Cluj-Napoca, etc.

Special thanks to Prof. Dr. Mihaela Corneanu, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timișoara (my wife and collaborator). We have been working together, full of hopes, looking for new achievements and opening new roads and horizons in science, during the last decades.

Corneanu C. Gabriel
University of Craiova, Agriculture Department, Genetics Laboratory,
15 Libertatii Str. R-1100-Craiova, Romania.
E-mail: gabicorneanu@yahoo.com

Corneanu Mihaela
Corresponding author
BUASVM "King Mihai Ist of Romania" from Timişoara,
Engineering Genetics Dept., Calea Aradului 119, Timişoara, Romania.
E-mail: micorneanu@yahoo.com

Received: March 30, 2018
Accepted: September 10, 2018