

## REFORM VIEWS IN THE NATURAL SCIENCES EDUCATION SUSTAINED AT THE FIRST NATIONAL CONGRESS OF THE ROMANIAN NATURALISTS

**Adriana BARNA**

Babes-Bolyai University Cluj-Napoca, Faculty for Psychology and Educational Sciences, str. Sindicatelor nr. 7.

**Abstract.** The first National Congress of the Romanian naturalists is recorded to have taken place in Cluj, on the 18<sup>th</sup> to 21<sup>st</sup> of April, in 1928. The General Secretary, Professor Al. Borza asserts the following ideas regarding the organization of the congress, in the book which contains the records of the congress and which appeared in 1930: “The idea of organizing a congress that will gather all the Romanian naturalists occurred soon after the Union ( 1918 ). We all realized that a better organization and a clearer direction for the natural sciences, regardless of the grades they are taught to, could be outlined only in a general conference attended by all the naturalists. We all noticed that as the days were going by, the organization of Scientific Research Institutions required by the cultural, national and economical needs of the reborn Romania needed the coordinative advice and the commanding authority of a general congress of the naturalists who would deal with authentic research, so that it should escape the preoccupations of a tight selfishness and of a damaging political activity. Finally, we all felt that the main issue, that is, the protection of nature could not find better solutions without the consistent contribution and impetuous insistence of all the naturalists.”

**Key words:** *Biology, reform, active-learning.*

The Committee, which was in charge with the organization of the congress, invited all the naturalists individually, as well as all the naturalist societies, all the Ministries that showed interest and all the local institutions and authorities. There were 232 members and 12 societies in all, who announced their participation.

The opening session of the congress was held in the lecture hall of the University “King Ferdinand the 1<sup>st</sup>”, in Cluj, having as audience, the members of the congress, the representatives of the naturalists’ societies and of the local authorities, as well as a “*numerous and select public*”. Among the representatives of the authorities there were: Dr. C. Anghelescu, Minister of the Educational System; E. Racovita, President of the Romanian Academy; Gh. Bogdan-Duica, Rector of the University in Cluj; General D. Papp, Commander of the 6<sup>th</sup> Army Corps; P. S. N. Ivan, The Orthodox Bishop of Cluj; Dr. E. Daianu, Rector of Cluj area; Dr. P. Dan, Prefect of the district; Dr. T. Mihali, Mayor of the city. There were also present the Rectors of the Academies of Commerce, Agriculture, Theology and all the foreign consuls in Cluj.

The meeting was opened by Professor A. Popovici-Bazosanu, Chairman of the Naturalists’ Society in Romania. During his speech, he also reviews briefly the history of the Romanian naturalist societies and movements, starting with the oldest one – The Society of the Naturalists and Physicians in Iasi, established in 1830; he also mentioned the noteworthy and appreciated personalities of the biological field in our country.

The Minister of the Public Instruction, Dr. C. Anghelescu, reminds in his speech that this congress takes place on the 2<sup>nd</sup> day after the voting of the secondary school education’s law and on the eve of the establishment and organization of the programs within which the natural sciences have a prominent place. He asserts: “*The education of natural sciences is one of the most important instructive subjects of study of the modern school. There’s no branch of knowledge that would have influenced more profound and better the thinking of man like the natural sciences. They revolutionized completely the old outlook about man, life and world. We learned to know and prize the truth due to their contribution. They represent a good instrument for the growing of the intelligence by developing the sense of observation and synthesis...The best proof of our appreciation for the natural sciences is that the new law stipulates that natural sciences should be compulsory at the secondary school-leaving examination.*”

The lecture of the Chairman of the Romanian Academy, Professor E. Racovita, also a senator at that time, was listened “*with a keen interest by the entire audience and was frequently interrupted by enthusiastic applause*”. At first he called the attention of the public to the contrast between the importance of the natural sciences for man and the human societies, on one side and the “*dull, minor and fully subordinative role*” that the natural sciences received in school, compared to mathematics and Latin or Greek, on the other side. The importance of natural sciences in the education of man as well as in the social economy is proved by relating the daily realities of life to the well-known adage of Socrate, that is, “*know yourself*”. In the opinion of E.

Racovita, this means first of all, respect and veneration for the one that brings life on the earth, embodied by the charming deity Venus. Also it means, *“to have elementary and accurate knowledge, in anatomy, physiology and psychology of the human body, so that one should not get to harm himself or become a victim of the heresy, deception and black magic. It means that one knows where he comes from, the kin of living being he descends from and also the direction he is bounding for... It means that one knows the value of the land on which his life unfurled and also knows the fields and mountains, the waters and plains... And how much more is there that is worth to be known so that one could live aware of his world and be well-read in a genuine way and all these cannot be given by the knowledge of Aristotel, Herodot, Strabon, Hipocrate or by Greek or Latin, but by the elementary and accurate knowledge of the fundamental findings that the natural sciences revealed. The consequences of this truth for the people, if we are to take them individually are obvious: the natural and human sciences must constitute the axle of the unspecialized secondary-school curriculum and the means by which the schoolchildren should receive this knowledge is the well knowing of the mother tongue. Before the secondary school of the past and even before the one of the present stands the secondary school of the future, as the single heir – and let’s name this latter one, “national scientific”.... Thirty years ago when I joined the group of the natural science’s defenders, I thought that my own children would enjoy a rational, balanced, active, hygienic, cultural and instructive educational system of which we were dreaming at that time...; from a general point of view it’s not more than a mere delay. The descendents of my children would probably be educated with those rational methods. ...Don’t we really know that when the torch of the truth falls from weakened hands like mines, there are always others ready to take it over and carry it on?”*

During the following sessions various essays were presented. On the 3<sup>rd</sup> session presided over by Professor E. Racovita who was assisted by Professor Al. Borza there were presented reports on various didactic issues, such as:

- M. Demetrescu (Craiova): *“Natural sciences before the new school reform.”*
- N. Iacobescu (Bucuresti): *“The need of applicative and encyclopaedic type of knowledge in the secondary school education.”*
- C. C. Georgescu (Bucuresti): *“Natural sciences in the Post-Secondary School of Forestry Specialty.”*
- I. A. Scriban (Cluj): *“Teaching aids and the school museum.”*
- I. Grintescu (Cluj): *“The bright projections and the school.”*

The volume that records the lectures of the congress contains the remark that *“there were lots of congress’s members that took the floor during the passionate discussions on the various topics.”*

The 5<sup>th</sup> session was chaired again by Professor E. Racovita assisted this time by Professor E. Pop. It’s opening is done by Professor Al. Borza with his lecture *“The protection of nature in Romania”* which during the following years became a referential paper for studies on the protection of the environment in our country. The session went on with five didactic lectures that were:

- Coralia Vernescu (Bucuresti): *“Applicative parts of natural sciences in the post-secondary school.”*
- I.Tulogdy (Cluj): *“School trips.”*
- M.Iacob (Bucuresti): *“The educational trips”*
- Al.Borza (Cluj): *“The instructive botanic gardens (with projections).”*
- M.Demetrovici (Timisoara): *“The problem of the educational gardens.”*

The didactic lectures as well as those that present the scientific research are published in great detail in the congress records. Each of them without any exception has its own challenge, its agreeable language; each is carefully elaborated, competent, concrete and realistic in its content. Each is worth being read and known by professors, and not only by those who teach biology. The truths that all these lectures contain are still valid and of great interest today.

I am convinced that just emphasizing on some ideas, which are interesting for us we attempt to the charm and to the content of these ideas, therefore we would like to present the decisions presented at the Congress regarding the natural sciences education:

I. “The Romanian Naturalist Congress examined the situation of the natural sciences education in the secondary school and considered the following reforms as indispensable and compulsory so that the natural sciences education in the secondary school, would successfully achieve its instructive purpose and be adjusted to the present time and teaching method:

1. the simplification and the reduction of the curricula as well as the adjustment of the hand-books which are too much developed for this level and consequently inappropriate .
2. the intensive use of the active methods in the teaching of the natural sciences.
3. the achievement of the very needed supply of teaching aids for every secondary school, by the Education Minister.
4. special courses allotted for the applicative parts.

5. the increase of the number of hours per week allotted to natural sciences, that is, 3 hours a week as it was used to be before the law of 1912.
6. the natural sciences education should be organized so that:
  - a. in the primary school, the pupil would get to know concretely his local environment; the examples and the phenomena that he studies should be only those which he gets in touch with immediately and directly.
  - b. in gymnasium the pupil would get to know concretely the surrounding environment by means of comparative methods; the examples and the phenomena that he studies should be different than those he meets in his own environment.
  - c. in the secondary school the student would get to know methodically the natural sciences, starting from concrete data already studied during the previous grades and of course, according to his needs.

II. The Romanian Naturalists Congress states the urgent and compulsory necessity of the organization of a department that should be in charge with the provisioning of school supplies for the subject of natural sciences as in the secondary schools such supplies do not exist or if they do, they are either old or insufficient. This is a disastrous situation for the teaching of some fundamentally “active” study subjects like the natural sciences and therefore such a department is required.

III. The Romanian Naturalists Congress decides to ask the Minister of Education to earmark funds in the future budget that should be spent on the arranging of such instructive botanic gardens in the vicinity of the secondary schools and to challenge the Romanian naturalists to actively propagate in favor of this idea. This decision was the consequence of the following observations that were discussed during the congress:

- the educational botanic gardens are a wonderful means of active instruction by the practical demonstrations that they allow to be done, as well as a means of educative teaching by the chance they give the schoolchildren to cultivate the land and to observe the unfolding of the natural phenomena.
- these gardens arranged on the spot can successfully be taken as “*outdoors classrooms*”, and this is persistently recommended by hygienists and modern pedagogues/teachers.
- the provisioning of the teaching aids such as living or preservable material which is a difficult problem could be solved easily by arranging these instructive botanic gardens.
- there can also be cultivated in this instructive gardens rare or uncommon species which represent a significant teaching material and consequently their disappearance from their natural environment or place of origin is avoided.

IV. The Romanian Naturalist Congress considers that the canceling of some facilities, such as, group tickets for the school trips hinders them from being taken and organized and it also considers that the teaching of the natural sciences cannot be accomplished in a successful way without such instructive trips and outdoors practical demonstrations. So, the Romanian Naturalists Congress asks categorically and firmly for a reconsideration of certain facilities for the schoolchildren regarding these instructive trips that have practical teaching purpose.”

#### **BIBLIOGRAPHY**

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