Women Physicists in Bulgaria in Another Transition Period

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Just three years have passed since the First IUPAP International Conference on Women in Physics was held in Paris in 2002. One might think it was a decade ago if the time were measured by the number of significant events that have strongly influenced Bulgarian society as a whole since then.

First, the country joined the Atlantic alliance in 2003. Some approved of the event; others were ill disposed toward it. How is this event related to physics? The availability of opportunities is a necessary condition for the self-realization of any person. With respect to research funding, NATO usually offers more opportunities to members than to nonmembers. The area chosen for funding the last few years—“Security Through Science”—combines methods and ideas from different disciplines: biology, medicine, physics, chemistry, social sciences, mathematics, and computer science. Research may be long term and high risk, but will be oriented toward international coordination of efforts. Whenever appropriate, societal, health, ethical, and gender issues will be addressed.

Combined with a fair competition, based on professionalism and competence rather than other considerations, this increased potential for science funding can only help women in science.

Another important event has been the successful conclusion of negotiations with the European Union (EU). Bulgaria’s parliament ratified the country’s accession treaty to the EU, which it signed together with Romania on April 25, 2005. We, Bulgarian scientists, should prepare ourselves and our successors for studying and working in a new environment—a wide job market with a strong competition. While this prospect is expected to stimulate the research society, it also brings the possibility for a “brain drain” as a result of Bulgaria’s increased integration with Europe: this has already been encountered by other small countries under the same conditions. Still, accession to the EU should be judged positively, because a Europe composed of states united by a common vision for the future and shared values for the present will be a pleasant place to live in.

In the 2003–2004 elections of the Bulgarian Academy of Science (BAS), one woman, a chemical physicist, was elected as a full member to the chemistry division, and a woman physicist was elected as a corresponding member to the physics division. The door to the “male-reserved zone”—the Academy—is slightly opened.

Finally, the long-awaited forum “Science in Bulgaria” took place on May 13–14, 2005. The forum was organized by the Union of Scientists, the University of Sofia, the Council of Rectors, the Federation of Scientific and Technical Unions, the Bulgarian Section of Euroscience, the National Centre on Agricultural Science, and the BAS. The core speeches given by the President of Bulgaria and the President of BAS underlined the main problems:

- Extremely low financial support from the government (the official number is 0.42 of GDP; by comparison, most EU countries reported ~1.9% of GDP in 2000).
- The age factor (most scientists left the country are well above 50 years old).
- The missing link between scientists and the newly organized private sector.

Both speakers underlined the role of science in the enrichment of the country. In return, scientific research must be a concern and responsibility of the society. It is well known that the research and development sector is positively correlated with the economy of a country. Stable and wise investments in science promote a prosperous future. Likewise, a weak scientific sector now all but predetermines a weak economic sector in the future.

In a 2005 speech at the “Science in Bulgaria” forum, BAS President Ivan Yuhnovski called the last 15 years a dramatic period for both science and education. Permanent reforms in secondary and tertiary schools, in the BAS, and in research institutes directed to innovations are benchmarks for the period. But the results can hardly be worse.

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1 Since the collapse of the Soviet Union, a new system of academic degrees was introduced and an accreditation system for postsecondary schools was created. Major restrictions on educational institution finances and new curricula were adopted, especially in the social sciences. In 1999 free university education was abolished and tuition fees were instituted at all public universities.
The population of the research sector decreased from about 90,000 in 1989 to 25,616 in 1994. Closures of high-tech factories, research laboratories, and institutions contributed to that. The physicists were first to become jobless. It is not a great surprise that the interest in physics as a career is very low. Between 1995 and 2002 the number of research scientists decreased from 25,557 to 16,671, leaving the country with about 10,000 scientists in all disciplines in 2004. In physics research institutes and faculties of physics there are fewer than 1000 scientists, with an age distribution peaked at about 55 years.

Insufficient funding contributes to another negative tendency—many scientists convert from researchers to teachers, joining the newly established higher-education institutions that call themselves “universities.” However, one cannot teach modern physics without research. Unthinkable! Contemporary physics is interrelated with technologies. This vicious circle must be broken; otherwise we will discover that all talented young people interested in physics will leave the country.

In this dark picture the status of women in science cannot be dazzling. However, there are “bright moments in life.”

In my report to the 2002 Women in Physics conference, I suggested an increased effort to attract girls at the school level to the challenges of science. The Bulgarian delegates to the Women in Physics conference worked hard in the schools. As we say: If the present life cannot be changed, let us try to work for the future. A number of initiatives have been taken to encourage young people to get involved in science:

- The Physics on Stage Initiative, a program for European science teachers. In Bulgaria the initiative became part of an annual competition between high school students. 60% of participants in the last 2 years were girls.
- “Physics Fights,” an international competition for high school students. The 2004 competition, held in Australia, was a success for the Bulgarian team from the American College in Sofia.
- Exhibition of devices designed by high-school students for observation of natural phenomena, 2005. Sponsored by the Ministry of Education and Science.
- National Science Week (November 2003), held to increase knowledge and understanding by the general public of the benefits and impact of European research collaboration.

The last events were led by female physics teachers with great enthusiasm and talent. The number of female students in physics (graduate programs) increased as a result of their efforts.

Slowly but surely, women rise to higher positions in the field. This is partly because many men physicists have either left science for business or left the country. The other part, however, is that the women are much more confident now of their own achievements, international recognition, and opportunities for demonstrating all of these.

Unfortunately, even when women are members of a decision-making board, they often play a secondary role because of the national mentality. This is a problem to be solved in the coming years, in conjunction with the problem of our society’s low recognition of the value of science. If we do not see these problems as related, we risk “feminizing” the field into a low-income, less respected one. Surprisingly similar problems in well developed EU countries have been revealed by the European Commission’s Women and Science Unit. Forums devoted to Women in Physics must guard against negative phenomena as much as possible.

Recently, a EU-funded project, European Platform of Women Scientists, has started. The Platform will give women scientists a voice in the research policy debate. The aim is to promote the understanding of the gender issue in science. Let us hope that in 3 years the deliverables of the project will include roadmaps for solutions.

REFERENCES

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