Interview with Professor Andrzej B. Legocki

Towards a Modern Academy

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Discussing the strategy for taking the Polish Academy of Sciences into the future. From the left: Prof. Emil Nalborczyk and Prof. Janusz Lipkowski – – PAN Vice-Presidents, Prof. Andrzej Legocki – PAN President, and Prof. Jan Strelau – PAN Vice-President and Editor-in-Chief of *ACADEMIA* Magazine

Academia: Do you find that the experience you gained while directing the PAN Bioorganic Chemistry Institute is now useful to you in directing the Polish Academy of Sciences as a whole? Or are these two completely different jobs?

Professor Andrzej B. Legocki, President of the Polish Academy of Sciences: *That experience is in fact essential for me now; it offers a kind of framework for my current work. Of course, directing the Academy is a considerably more multifaceted job, yet what lies at the core of the Academy - aside from its elected body of members - are the scientific institutes. The most important lesson I learned while directing one of them is always to seek compromises. Life rarely offers clear-cut situations, and one has to be able to distinguish the crucial issues from the "background noise."*

Did this move bring a big change in your perspective on science and how it is organized?

Beforehand I did not realize that the difference would be so considerable. At the Institute, the important thing was to develop a good research project, to submit it to a financing agency - domestic or foreign - and, in the event of successfully secured funding, to pull together a team of competent people and start researching. I didn't have to deal with the issue of integrating the scientific community, for instance. On the institute level, that at most meant encouraging individual teams to work together. Now, looking at the scientific milieu in Poland as a whole, I can see an extremely urgent need to integrate all of its component elements. As President of the Academy, I realized that not much has been achieved in this regard in Poland on the strategic level. There is still the enduring legacy of an extremely unfavorable compartmentalized mindset, a wall that separates scientists at higher education institutions from those at R&D units subordinate to various ministries, from those at Academy institutes...

And one more thing: experience at a single good institute is not easily translatable to the nationwide level, where there is considerable variation in the caliber and degree of advancement. Some

research groups are none too modern, yet also constitute part of the Polish scientific community. This means that the process of leveling up the standards, of putting young people in management posts, is not easy and encounters resistance among many circles. Yet this is undoubtedly a factor of decisive significance for the position of Polish science in the world.

The Polish Academy of Sciences frequently comes up against the criticism that its members are chiefly elderly researchers.

It should be no surprise that such individuals make up the body of members. The members of the US National Academy of Sciences, after all, are not the youngest individuals, either. Such is the mechanism of being chosen for membership in such an institution: elections are made not from the scientists who hold great promise, but from those who have already chalked up outstanding achievements. The process of bringing researchers of the younger generation in has to gain the acceptance of all the decision-making platforms within the Academy - one person's will is not sufficient to achieve it.

Can the percentage of young scientists be increased through top-down decisions, i.e. via institutional measures, or does it require a change in thinking?

To a certain extent, we attempt to change things by issuing decisions. At the beginning I thought that this process could be carried out somewhat more radically, but such an approach can only turn more people against the notion. Besides, excessive radicalism has never served science well. We have already done a lot to move this concept forward, the first results are now evident, but the true benefits of these steps will in fact be visible within the perspective of 2-3 years. Such changes are to be facilitated by the President of the Academy's stipends for outstanding young scientists, as well as by our recommendation that all Academy research units should have international advisory bodies. But modernizing institutes is not easy: we are limited not only by the paucity of available funds, but also by conservative habits of certain circles. Ideas for reforming the scientific domain have forged ahead, but legal regulations and state readiness to support modern research programs have not kept pace.

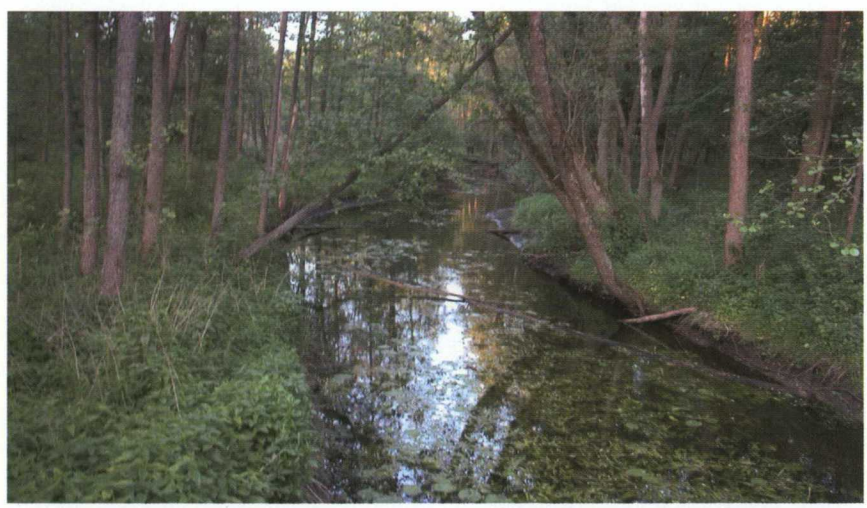
Is there a contradiction between expecting scientific units and researchers to take a modern approach and a kind of conservatism that is inherent in science, the tradition of the master-pupil relationship?

This contradiction is only of a formal nature; in fact it is very stimulating. The emergence of a modern young scientist's personality must start at an excellent school of research. Naturally, a school formed by older, more experienced researchers. But every master has the duty to promote their most talented pupils - ones that will not only duplicate their work, but also create something new.

And what might the Polish Academy of Sciences perceive as its "master," as a model research institution worthy of emulation?

Having participated in various European and international bodies and hosted visiting scientists from all over the world, I can say that in my opinion one of the world's most efficient organized research institution is Germany's Max Planck Society. This is the result of both the pragmatism whereby it functions and its very good financial condition, stemming in part from public funding to support research at Max Planck institutes. The key to its success, however, lies in dynamic management: the Max Planck Society authorities can, in justified cases, very quickly replace the directors of research units or change research priorities. That would be much more difficult in Poland. The existing regulations do not give the Academy's authorities such power - at least at present. Despite these limitations, however, we have already initiated a firm basis in our Academy

"I believe that science and culture can and should become Polish specialties. Given our national traits - a certain intrepidness, a lack of humility - we are a society that can produce great discoverers"



Ireneusz Ruczyński

Poland has preserved many natural areas of precious value, such as the unique Biebrza Marshes or the Białowieża Forest (shown above). They can serve as excellent targets for interdisciplinary research by international groups of scientists

PAN archives

The PAN President's stipends for young scientists are an element of a long-term strategy to boost the emergence of a new generation of potential leaders for Polish science

for the modernization of all aspects of its activity.

Is the structure of the Academy – which consists on the one hand of a elected body of scientists, and on the other of a set of research institutions - effective and does it function well? Scientific societies and academies usually consist of either one or the other...

I think that when we look inside the mechanisms whereby such institutions as the Max Planck Society function, we can see that there are really not so many differences. Our General Assembly corresponds to the Senate of the Max Planck Society in approving its developmental priorities and the choice of research strategy. The executive power of the German society's president, on the other hand, is perhaps significantly greater in practice. The President of the Polish Academy of Sciences, elected by two-thirds of its members and bearing full responsibility for the future of the academy, should have more direct influence over its operations, including management appointments at the research units. In practice this is not an easy task, because Poland has considerably smaller numbers of individuals who are qualified to run large scientific institutes. 40% of the directors of Max Planck institutes are foreigners. In Poland we consistently come up against resistance from the scientific community when we want to organize open, international competitions. The first exceptions have now been appearing, but we want for them to become the rule. After all, science is a universal human endeavor, not a matter of individual countries and nations.

Yet how does this idea relate to the competition between Europe and the United States, including in the scientific domain? What about the Lisbon Strategy, which envisages investments in science turning the EU into an economic rival for the United States? Can European countries compete with the United States in science?

Theoretically they can, at least in certain fields. However, I consider adopting such a premise to have been mistaken. In the shorter-term perspective, comparisons to the US economy may serve as some sort of level of reference. But in the longer term, such rivalry could do harm. Scientists and politicians from the United States are pointing out that US institutions are increasingly less interested in participating in the development of European science. They do not want to support a competitor. During my recent talks with representatives of the US Secretary of State and with Dr. George Atkinson, an advisor to Condoleezza Rice, I strove to express that despite being a member of the EU, Poland has an ambition to pursue autonomous research policy. Right now we are building a network of Academy establishments studying the environment and biological diversity, which will conduct research in the Carpathian Mountains and elsewhere, with the involvement of teams from Ukraine and other countries. We want the research groups in these projects to be led by scientists from around the world. I think that in such environmental research, equipped with modern molecular tools, we could successfully work together with the Americans as well. Poland possesses magnificent areas, especially in the east of the country, of precious value for studying man's impact on the environment. A multidisciplinary approach will be crucial here.

Should we get involved in a scientific race with world powers? Or should we aim more towards the rapid implementation of research results achieved elsewhere?

Science constitutes such a magnificent part of human activity because it is not fully predictable. No one can say whether a given young researcher might make a breakthrough discovery in several years' time. Regardless of how intensively the Americans or Chinese, for example, pursue their work, they do not have a monopoly on discovery. Others' achievements do not mean that our research is not still crucial.

Can Poland serve as a link between our eastern neighbors and European science or world science?

I believe so. Among the Academy's five foreign scientific centers, we consider the center in Moscow to be very important for maintaining and further developing the joint contacts between Polish and Russian scientists. This represents a vast pool of research possibilities in such fields as physics, chemistry, mathematics and polar biology, but also history, ethnography. Cooperation with our colleagues from Eastern countries could represent one of Poland's contributions to creating "European added value."

First we must decide which direction the development of Polish science should take, and this issue always stirs up a lot of emotion. Is making such a choice possible in the first place? The potential applications of some research results, after all, are impossible to predict...

This choice is not only possible, but necessary. Poland simply cannot afford to pursue every potential research avenue. We have to choose fields of concentration, using twofold criteria. Firstly, harnessing the potential which has already been accumulated and which is of significance in the international arena. And secondly, the criteria of benefits for our economy. Modern science cannot, after all, exist without public consent.
As concerns the fields of concentration, one of them will definitely involve the issues of human health, the pathologies caused by civilization, epidemics and cancer. Work in this domain will also have to encompass basic research. And because mankind is part of the wider environment, another priority should also involve environmentally-related research pursued in modern fashion. Such an approach should integrate a wide range of research units and scientists dealing with the so-called life sciences: botany, zoology, physiology, climatology, etc. And of course the information sciences, which serve as a measure of civilizational advancement, and the materials sciences, which open many novel methodologies. These research avenues are the subject of interest from scientists the world over, but we also have our own Polish specialties, such as astronomy or mathematics, for example. Polish archeology is developing wonderfully. Neither can we forget to mention our humanities research, aimed at consistently reminding us of our cultural origins, of our heritage.

Professor Andrzej B. Legocki, President of the Polish Academy of Sciences (PAN) since April 2003, Ph.D. in Biochemistry, D.Sc., Professor of Biological Sciences, Director of the PAN Institute of Bioorganic Chemistry (1988-2003) and head of the Plant Molecular Biology Laboratory, President of the Poznań branch of PAN since 1990, Ph.D. graduate fellow at the University of Agriculture, Poznań (1962-1965) and head of the Protein Biosynthesis Lab at the same University (1970-1988), member of: Academia Europaea, the Polish Academy of Arts and Sciences, and the European Molecular Biology Organisation, awarded an honorary doctorate from the University of Agriculture in Poznań, Warsaw Agricultural University and Lublin University, editorial board member of: *Plant Science, Acta Biochimica Polonica, The Plant Journal* (1991-1999) and *Cellular and Molecular Biology Letters.*

Does the President of the Polish Academy of Sciences have time for his own scientific research, or have you had to hang up your lab apron?

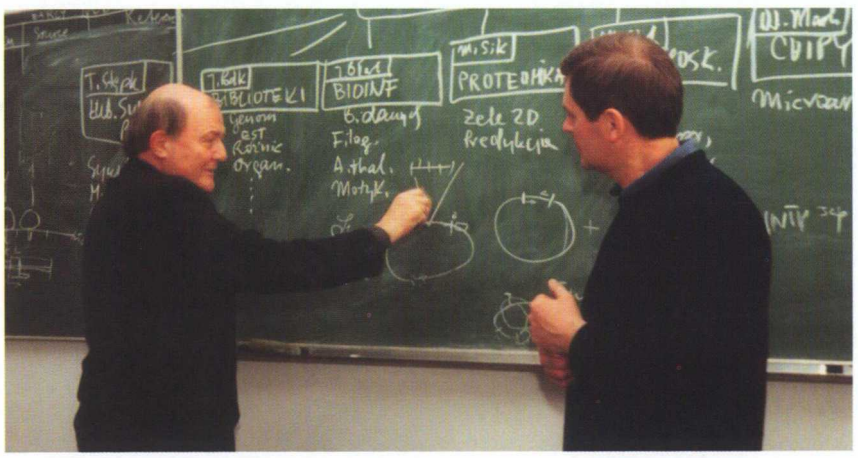
Unfortunately, my research has of necessity been reduced. On the other hand, I am now more involved with general biological issues and topics that lie at the intersection of science and philosophy.

Don't you miss the laboratory, your Institute?

Of course, I am torn. But I treat what I am doing now as a mission that I fully identify with. And if I regret anything, it's that the day only lasts 24 hours.

Interviewed by: Piotr Kossobudzki
Warsaw, September 2005

A. Legocki home archive



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