BIOTECHNOLOGY FOCUS

AS ONE OF TODAY'S HOTTEST TOPICS, BIOTECHNOLOGY IS RARELY OUT OF THE NEWS. THE DISCIPLINE IS GROWING IN POPULARITY IN CENTRAL AND EASTERN EUROPE (CEE), WHERE IT HAS EXPERIENCED A SURGE OF INVESTMENT AND INTEREST OF LATE.

Kellie Peakman speaks to Dr Børge Diderichsen, Vice President of Corporate Research Affairs at Novo Nordisk and President of the European Federation of Biotechnology (EFB), about the region's involvement in the discipline.

The European Federation of Biotechnology was founded in 1978 by 35 learned societies. Dr Diderichsen has been President of EFB since 1 January 2002, but has been engaged in EFB activities for many years. Several years ago, he collaborated with Pierre Crooy, EFB President at the time, and other colleagues to instigate a radical overhaul of the organisation. This led to the approval of new statutes by the General Assembly at EFB congress in Madrid in 2001. A number of changes were implemented as a consequence, the principal one of which was the implementation of a membership scheme, which meant that all institutions in Europe and beyond could potentially become fee paying members. The changes have met with enthusiasm and today EFB has 180 institutional members and 3400 personal members increasing by around 50-100 new members each month.

EEU. One of the main objectives of EFB is to educate the general public in Europe enabling a better understanding and perception

of biotechnology, and to allay fears of genetic engineering. What initiatives do you currently have underway to achieve this aim?
BD. Our Task Group on Public Perceptions of Biotechnology is responsible for educating the general public and, in order to achieve this, it prepares briefing papers on issues such as genetically modified organisms (GMOs) and organises workshops and meetings, sometimes on its own initiative and sometimes on behalf of the European Commission. Several of these workshops will take place during the 11th European Conference on Biotechnology in Basel. Another activity for which the Task Group is responsible is a service called 'Ask the scientist'. This invites the general public to submit a question in one of many European languages via e-mail and our experts answer the questions as they come in. Under the EFB umbrella, a similar service has recently been established in Poland.

EEU. In your opinion, what are the main issues facing the field of biotechnology at this point in time?
BD. It is clear that ethical discussions and societal issues are essential for the successful exploitation of all of the possibilities that biotechnology offers in its various sectors. So it is crucial to have the public understand and accept that biotechnology is a tool to make better use of nature's resources – but of course we have to do that with care and concern. This is probably the biggest challenge to us currently.

The three major global issues for which biotechnology could or should play an important role are climatic changes, sustainability and human health. It is EFB's vision to help societies in the developed as well as the developing world to deal with the following three global issues, which are already related to actual and real threats to prosperity and health:

- Disappearance of arable land owing to reconfiguration of climatic patterns, rising temperatures and sea levels, regional droughts, flooding and erosion.
- Poverty increasing in regions that don't have the resources and the technology to cope with changes in the environment.
- Detrimental effects on the health of humans, animals and plants being affected by changing living conditions, overpopulation, pollution and changing lifestyles.

EEU. I have read that the CEE region has recently begun to embrace biotechnology. How important is biotechnology to the region, and what is driving this interest in the discipline?
BD. You are probably aware that in many Western countries there is a shortage of talented young people choosing to study natural sciences. In the Eastern countries, the attitude is somewhat different. Eastern Europe represents a big resource of very bright and well-educated young people that will be able to fill this gap. We hope that many of those will, at some time, return to the Eastern countries with new skills and experiences, because the sound and sustainable solution is to stimulate brain circulation, not brain drain. The EC could also have an important role to play here.

The OECD has estimated that the EU will need approximately 25,000 more PhD students every year – across science – this is a great deal. In Denmark, for example, we train 1000 PhDs in all fields each year. However, if we remind ourselves that Poland alone has more than 1,700,000 university students – if a substantial amount of these students are given the best training and, of course, get interested in biotechnology and related fields, we have an enormous resource in Europe as a whole.

EEU. Why are so many students in the CEE region more interested in natural sciences than their Western European counterparts?
BD. Well, development in attitudes in the East has been somewhat different than in the Western world, where young people are not as attracted by the idea of studying hard for the sake of it; they like to be continually motivated by real problems, rather than in-depth training in mathematics, physics or other sciences without knowing exactly the practical applications of these skills.

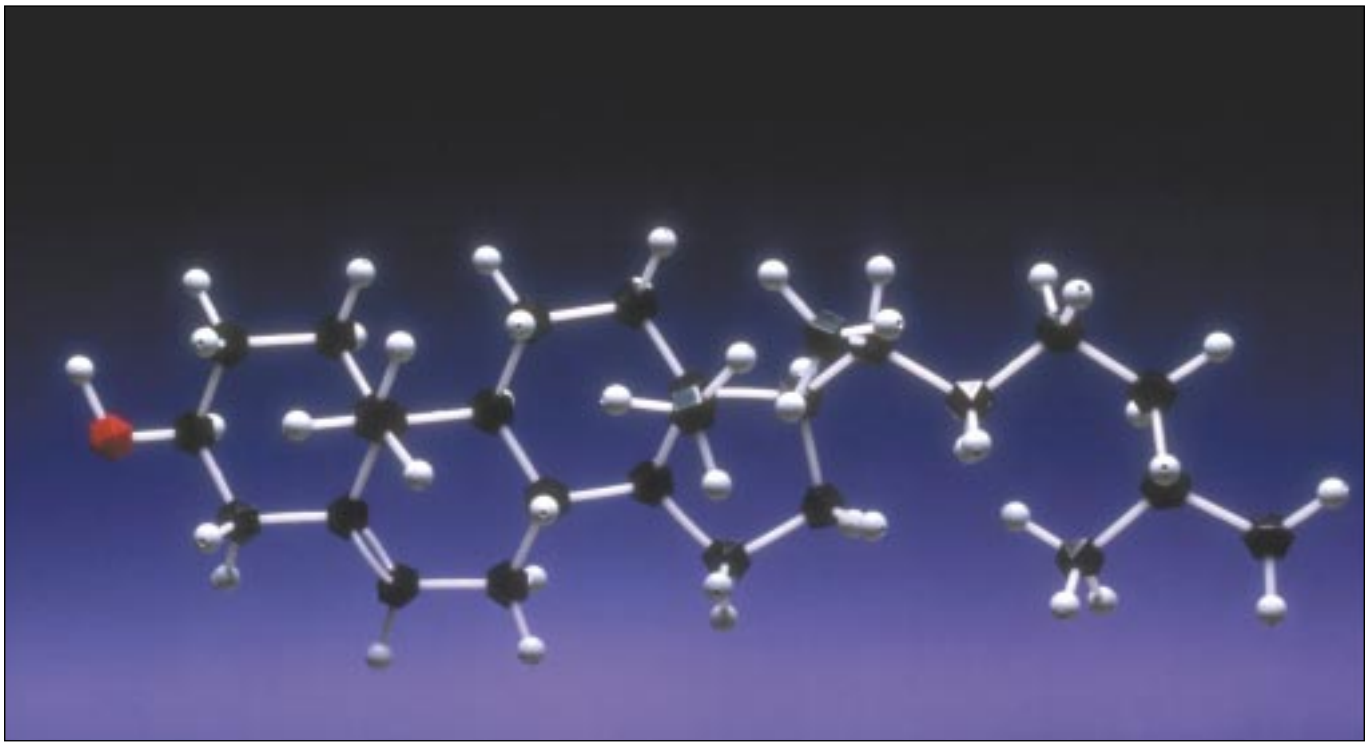
In Scandinavia, for instance, young people are very much problem-oriented, they are very keen to engage in discussions about almost everything, which is itself a good quality because it promotes a certain amount of non-authoritarian creativity; however, as a result, they sometimes lack the basic skills. The attitude is different in the East where studies are more focused and there is not so much room for discussion and digressions.

EEU. I understand that EFB aims to promote cooperation, on scientific grounds, between national and cross-national member societies. With this in mind, what benefits could EFB offer a biotechnology company from CEE?
BD. EFB offers immediate access to important networks in Europe covering almost all fields in biotechnology. Individuals from companies can become members of one or more of our Sections, which are devoted to a particular field of biotechnology, or one can be invited to join our task groups, depending on your specific interests. One particular task group that would be of interest to biotechnology companies in the East is our Task Group on Innovation. This is a relatively new task group where we try to share experiences and increase competencies of people, or companies in the group. These interactions may be facilitated by one or more of the 10 regional branch offices that EFB has recently established. Three of these are in CEE countries.

Inspired by EFB, a Polish Federation of Biotechnology was recently established with aims similar to EFB and probably to be supported by EFB Task Groups and Sections when relevant. Thus, the Polish Federation also will be engaged in public perceptions and to support SMEs and the biotech community in various ways.

EFB networks can also provide the basis for applications to European Commission programmes. We also have connections to the Biotech and Finance Forum, which is an institution in part supported by the European Commission and in part by the European Association of Securities Dealers. This forum is of particular interest to companies from the East that need to be engaged with investors who can provide capital.

EEU. What specifically does the CEE region offer the biotechnology world? Do you think that the CEE region is set to become a major player in biotechnology in the next few years?
BD. There are a lot of initiatives that are in their early stages in some



CEE countries. In my opinion, the two countries that are most active and advanced in the biotechnology field are Poland – which is also the biggest CEE country – and Estonia.

The Polish government has recently decided to support SMEs in biotech and announced a new call for proposals for financing by up to 10 million PLN.

Estonian scientists and the Estonian public health services have together established the Estonian Genome Foundation. The foundation has initiated projects that aim to combine all existing and potential disciplines and technologies in the field. Upon its establishment in 1999, EGF was the initiator of the Estonian Genome Project, the underlying idea of which is to create a national health and DNA database of the Estonian population and provide broad access to the database for the purpose of performing genetic studies of common diseases. In July 2003, the representatives of four of the world's leading genome projects, including representatives of the Estonian Genome Project, met in Montreal, Canada, to establish an international consortium for the introduction and harmonisation of common principles for large-scale human genome projects and exchanging experiences.

These achievements are particularly impressive when you consider that Estonia is a very small country with a population of just 1.4 million, yet they have been able to set something up that is really good by international standards.

EEU. Why do you think Estonia has been so successful with this project?

BD. The reason for this is relatively simple. In my opinion, Estonians are well educated, technology-minded and supportive of innovative projects. The developed structure and nationwide extent of primary healthcare are other assets for launching such a project. Estonia also benefits from being culturally and geographically close to Finland – and it is helpful to have a highly advanced cousin!

EEU. Have plans to join the EU meant that stricter rules on biosafety now have to be adhered to in the CEE region? What is EFB's stance on such rules and protocols?

BD. The CEE countries have been adapting their regulations for a long time now in preparation of joining the European Union and biosafety protocols have now been signed by all associated states. Ratification is currently in progress and expected to take place in December in Poland. So I don't think that enlargement will constitute any problems in this regard.

When it comes to the importance of these rules and regulations, one could always discuss whether, from a technical perspective, they should be here or there or how strict or relaxed they should be – the basic thing is that to go forward with biotechnology and to use it in an applied and acceptable way, we need the trust of the people, quite simply, and if it is necessary to introduce technically unreasonable, tough legislation in order to get this trust then there really is no other way of doing it.

This was the case in Denmark at the beginning of the 80s, where the world's very first law on genetic engineering was passed. In some ways, industry was not too happy with the law as they thought it was unnecessary and complicated and there was no real technical reason for the concern. But it turned out that, after having this political public debate and after having this first law passed, the public trusted that things were under control and accepted that they didn't need to worry about contained use of recombinant micro-organisms. This is of course a simplification, but in essence it is true.

EEU. What relationship does EFB have with the European Commission?

BD. I think we enjoy a very good relationship with the Commission, as other societies do, but what makes EFB unique is that we are the only pan-European organisation that has a solely scientific approach to the use of biotechnology. In other words, we are not representing the industrial sector; we are representing biotechnologists whether they come from science, academia or industry. And our approach is scientific so that in all our activities there should be a scientific basis for the opinions and activities that we are undertaking.

It is my opinion that this attitude is very much respected in the European Commission – and elsewhere for that matter. The Commission is also happy to let EFB undertake certain tasks that it funds. For example, the Commission would like to increase collaborations between Europe and China in the field of biotechnology and since the Commission itself cannot get engaged in these types of partnerships, they have entrusted us at EFB with considerable funding in order to facilitate this kind of relationship on their behalf.

EEU. What major advancements in biotechnology do you foresee in the next two years?

B.D. One of the major predictions and hopes is that we will witness developing countries being able to apply modern biotechnology much more extensively than we have done so far. The reason for this is that while we in the Western world can afford to say that we don't like GMO food or we don't like having genetically engineered crops in the fields, there is a large part of the world – in particular Asia and Africa – where the situation is entirely different. The chances of getting a better life for the farmers in these regions – for example through less labour and more income – will sometimes improve if they use GMO crops. For instance, investigations have shown that growing pest resistant cotton – one of the most important crops in the world – allows farmers to work less, spend less money and be less exposed to harmful chemicals, which also has a positive effect on the environment. So one of the hopes that we have is that we in Europe will feel a greater sense of responsibility towards the developing world. In helping them to use these new technologies in a safe way to improve prosperity and their quality of life. With this goal in mind, we have recently started a new initiative, European Action in Global Life Sciences (EAGLES). ■

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