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The Educational Programmes of the European Community

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BACKGROUND AND CONTEXT

NOT SINCE the Middle-Ages when it was common for scholars and students to roam over Europe shopping for "the ultimate"—the "Summa" in science and knowledge in monasteries and emerging universities has a similar wave of travelling teachers and learners been produced. "ERASMUS" students have become a very visible and outspoken minority at European universities, followed more recently by "TEMPUS" visitors from Central and Eastern Europe and holders of MED-CAMPUS scholarships from the non-EC Mediterranean countries.

The educational programmes of the European Community are generally perceived as a "noble" initiative, stimulating students and teachers to leave their secure shells to go out to meet, in the framework of a teaching/learning situation, people from other cultures with different traditions, university curricula and languages. Could indeed a better recipe for doing away with prejudice and stereotype-thinking and for furthering peace be devised?

To some readers it may come as a slight disappointment, therefore, to learn that the origins of these programmes are rooted in economics. With the completion of the internal market, the post-1992 Community would need a vast supply of graduates who feel at home in the European space; regard the whole of Europe rather than a single nation state as their natural area of activities; have a first-hand experience of studying, living and working in an other Community country; are proficient in a number of community languages; and, even more important, are able to understand and appreciate the culture and mentality of other nations. It was perceived that the success of the Internal Market would depend on having people with this capacity to operate across national and cultural boundaries. Mobility was viewed as the most effective instrument in producing this kind of graduate and the historical relationships between higher education institutes were looked upon as an asset to the Community in its growing world role. The objective stated for 1992 as the minimum required to meet the future needs of the community was a student mobility of 10%.

But only 4% of the student population had by 1992 the opportunity to spend an integrated period of study in another Member State. Disappointing as this figure may be to the Commission, to a neutral observer it sounds like a remarkable achievement, a real success story for in 1992 ERASMUS had been operational for only 5 years!

Likewise, the TEMPUS Programme of the European Community was devised not only to give fellow Europeans from the post communist countries a taste of western European democracy, but also to support the economic reform process in the area. Not surprisingly the TEMPUS scheme is funded by the PHARE Programme which establishes priorities for global Community assistance to the economic restructuring of the countries of Central and Eastern Europe.

Expressed in quantifiable terms its success is certainly comparable to that of the ERASMUS Programme. In its fifth operational year, the ERASMUS Scheme put 72 101 students and 3616 university teachers on the move. The TEMPUS Programme generated in 1991, when only in its second year of operation, 6339 staff and 3808 student mobility applications.

The MED-CAMPUS Scheme is still in its pilot phase. In the selection process for the current academic year, medicine was excluded as a priority area.

While promoting exchange and mobility is their main priority, the scope of the European educational programmes is much broader. They provide incentives for inter-university cooperation, for the development of common curricula and for the joint organisation of intensive training courses. A huge effort is also being invested in getting a "European Credit Transfer System" (ECTS) off the ground. As such the programmes under discussion try to add a specific European dimension to a broad EC policy aiming at stimulating participation in and access to higher education as outlined in the "Memorandum on Higher Education in the European Community" elaborated by its Task Force Human Resources.

Euro-sceptics who have apprehensions about EC involvement in a matter as closely linked to the national identity as education should bear in mind that the Maastricht Treaty has explicitly allocated the responsibility for the organisation of education to the Member States.

On the other hand, the Single European Act states that "The internal market shall comprise an area without frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provisions of the Treaty".

The only EC Council Directive shouldering the free movement of persons in the professional sphere provides in "a general system for the recognition of higher education diplomas awarded on completion of professional education and training of at least 3 years' duration" and by sectoral directives governing the

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mutual recognition of qualifications for professional purposes. While within the terms of the General Directive no effort is made to harmonise the content and duration of professional training across the Member States, it is considered likely that one of the practical effects of the Directive will be to stimulate a convergence in the training for particular professions. The commission will also endorse efforts developed by representative European professional organisations who work towards that goal.

It is evident that a broad field of action offers itself here to the European societies actively engaged in the field of cancer care. If they want to upgrade the standards of professional practice within the whole of the ever widening "European Space" it will be up to them to develop adequate initiatives.

In the next issue of this special EJC section, some initiatives taken by the European Society for Therapeutic Radiology and Oncology (ESTRO) will be examined indicating how the wide range of possibilities offered by the European educational programmes can be used in this context.

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Molecular Biology for Clinicians

MOLECULAR BIOLOGY is the key to understanding cancer today and to mastering all the new techniques available in diagnosis, prognosis and soon, treatment.

Sixty young clinicians spent 3 days studying the basics of the cell cycle and the myriad of steps and controls involved in cancer development and progression. The course, *An Introduction to the Molecular Biology of Cancer for Clinicians*, was the first of its kind run by the European School of Oncology.

"We believe that advances in oncology will not be empirical", said Prof. Alan Horwich, of the Royal Marsden Hospital and Institute of Cancer Research in London, chairman of the ESO course. "They're likely to be determined from an increased understanding of carcinogenesis, the basis of which is the molecular genetics of cancer".

"The structure of the meeting was designed to go all the way from an introductory phase, defining techniques and applications, to looking at the potential uses in oncology, which are not yet fully exploited," he added.

First, the techniques used to view the biological processes that govern cell behaviour were explained, followed by application of molecular techniques to monitor therapeutic responses to radiation and chemotherapy.

All the teaching faculty were clinicians. "Rather than going for teachers who are basic scientists, we've gone for those with one foot in the clinical camp, who can communicate the relevance at a level clinicians will understand," Horwich said.

Instructors attempted to provide students with solid ground for understanding the complex issues appearing today in medical journals and at cancer congresses. Cell cycle regulation, apoptosis, programmed cell death, DNA repair, growth regulation, viruses, and biology of radiation and multidrug resistance were all layed out in detail.

In the cell cycle, instructors explained the relationship between the family of cyclins and the cyclin-dependent kinases (Cdc2) responsible for triggering and halting mitosis. Researchers are trying to determine why cancer cells continue to cycle under conditions in which normal cells do not, showing their independence of growth regulatory processes.

Illustrating how fast the field is moving, Dr. Jonas Bergh from Uppsala University, Sweden, said there are 70 oncogenes described today, with a new oncogene named every 3 weeks.

A strong focus was the p53 gene, called the 'guardian of the genome' because it is present in normal cells and mutations of this gene are known to occur in a growing number of tumours. In breast cancer, p53 has been found to be useful prognostically. Another gene in which clinical usefulness has been shown is N-*myc*, according to Bergh. Stronger amplification of the N-*myc* gene occurs with later stages of human neuroblastoma.

Horwich explained what is known about the role of viruses in cancer causation, such as the Epstein–Barr virus, which affects 90% of the worlds population; papilloma viruses, linked epidemiologically with certain cancers (cervical, vulvar,laryngeal papillomas); and HTLV-1 and its connection with adult T-cell leukaemia.

Other instructors went through the molecular techniques being used to determine which genes are important in oncogenesis and mapped the search for more specific DNA-damaging drugs and efforts to evade chemotherapy resistance in cancer cells.

The course ended by covering the molecular genetics of colorectal, breast and lung cancers, as well as non-Hodgkin lymphomas. Bergh concluded that human SCLC and non-SCLC is characterised by an inactivation of tumour suppressor genes, activation of oncogenes, and aberrant expression of growth factors, and that he expects the precise sequence and timing of these changes to be answered within the coming decade using molecular biological techniques.

The European School of Oncology holds courses throughout Europe for oncologists, cancer nurses, and other medical professionals to disseminate up-to-date information on cancer cause, diagnosis, and treatment. Courses focus on specific cancer sites, as well as treatments, technologies, and psychosocial issues.

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