

# THE ESACT NEWSLETTER

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## **OBITUARY**

**Florian Horaud (former name :  
Horodniceanu) M.D, Ph.D., Prof  
and Hon. Prof at the Institute  
Pasteur in Paris 1925 - 2000**



It is with sadness that we record the death of Florian "Nardi" Horaud on the 26th July 2000. Florian graduated as medical doctor at the School of Medicine in Bucharest/R in 1951 passed the examination for the national degree of a "Chief Medical Officer, Epidemiology and Microbiology" in 1962, and graduated in Natural Sciences at the University of Bucharest/R in 1965. During his stay (1951 - 1965) at the School of Medicine in Bucharest he was successively assistant and associate professor for microbiology, and became junior scientist at the Institute Cantacuzino in Bucharest in 1953. There he was active up to 1969, and became successively senior scientist and head of the department for experimental medicine and virology. During his stay in the Institute Cantacuzino, he was involved in the development of a poliovaccine. In this context, he was active as consultant in the WHO Poliomyelitis Advisory Group in Geneva in 1968, 1974 and 1982, and more globally as WHO Expert for Viral Diseases and Standardization of Biological Products in Geneva since 1968.

In 1971, he started as research director (DGRST - a French government fellowship) his career at the Laboratory for Viral Ecology at the Institute Pasteur in Paris and became successively Head of Laboratory (in 1973) and Professor (in 1981) at the Medical Virology Unit, and was Chairman of the Department of Virology of the Institute Pasteur from 1985 to 1990. In the context of his preoccupations concerning biological safety issues, he founded the Laboratory for Cell Technology in 1986 and the Biotechnology Service Activity

(Texcell) of the Institute Pasteur in 1987, of which he was Scientific Director from 1987 to 1993. With both services he initiated the development of safer production processes for biologicals (e.g. the development of serum-free production processes for viral vaccines) as well as the establishment of a commercial quality control for biotech derived products/injectables for human use.

The founding of both biotech activities at the Institute Pasteur reflects his main preoccupation, the development of new and safer vaccines and, in a wider context, of new and safer biologicals. This safety aspect - absence of contaminations such as proteins, DNA, but mainly of adventitious agents - was one of his main concerns, and the recurrent problems concerning the appearance of adventitious agents in vaccines and other biotech derived products confirm the continuing actuality of this preoccupation. However, as a "pastorien" he had also an important research activity with respect to fundamental aspects in virology. He worked on the genetics of polioviruses, the biology of herpesviruses, and in particular, of cytomegalovirus and herpes simplex virus. The direct application of these activities were improvement of production methods of different vaccines and the development of monoclonal antibodies for diagnostics of different viruses.

However, his activities were not limited to the Institute Pasteur, but he was active also as consultant in many national and international expert groups and scientific and public health advisory panels, such as those of the French government (Agence du Médicament) of the FAO, the WHO and the EMEA, only to mention some of them.

Florian was a founding member of ESACT, organized the second ESACT-Meeting in Paris in 1978 (Maison des Polytechniciens, 23-26 May) and guided progress as its chairman from 1980 to 1983. These activities in the interest of ESACT and of all animal cell culture biotechnologists brought him the honorary membership of ESACT in 1985 and the ESACT medal in 1997 during the 15th ESACT-Meeting which was organized in Tours

Florian was active in the field of public health and the biological safety of biotech derived products for human use up to the middle of 2000. He gave important impulses in order to improve the biological safety of injectables derived from biotech, in general, and it is evident that the producers of such biotech products as well as the

regulatory authorities should never reduce their vigilance in this field but should be even more aware of the potential problems associated with use of such products (*see also: In memoriam Florian Horaud: "Safety for vaccine(e)s" accompanying this Newsletter*).

However, it is not only that we should remember the person actively working in his profession, but the human being who was behind this active person, and we must state that we lost a very charming and warm hearted man who had compassion with others and tried to help/reduce the pain of others where possible.

Our sincere sympathy to Théa, Radu, and Pierre in their loss of a husband and father and our gratitude that so many of us were privileged to know Florian "Nardi" Horaud.

*Otto-Wilhelm Merten*

## **Editorial**

### **The Biotechnology patenting mess - what happens now?**

Over two years after the deadline only four European Union member states have implemented the provisions of the Biotechnology Patenting Directive, although some countries have drafted legislation which is winding its way through various bureaucratic jungles, while others, led by the Netherlands, remain steadfastly opposed to the Directive.

The failure of member states to transpose the Directive into national law in a harmonised way by last July 30th has left the biotechnology industry without a clear legal framework two whole years after the adoption of the Directive by the Council of Ministers.

This has, of course, been a controversial piece of legislation. After its adoption the Dutch government submitted a proposal to the European Court of Justice to suspend the Directive, but last August the court refused to do so. The Dutch application to have it annulled has yet to come before the court for a full hearing. In early July the Council of Europe called for the Directive to be renegotiated.

The current situation is that Britain, Denmark, Finland and Ireland had transposed the Directive into their national law by early November. Austria, Belgium, Germany, Greece, Portugal, Spain and Sweden all have drafts or have begun discussion on

the proposed legislation. In the Netherlands, however, there is still a large parliamentary majority opposed to the Directive. In Italy no decision is likely before the next parliamentary elections in spring 2001, and in France the government maintains that is incompatible with French law, including the 1994 bioethics law that prohibits the patenting of any parts of the human body.

Even though European attitudes towards some areas of biotechnology like GM crops, GM food and animal cloning are becoming increasingly negative according to the latest (November 1999) Eurobarometer survey, there continues to be overwhelming support for medical applications. It seems then that once again the biotechnology lobby is failing to appreciate the "second hurdle" of public opinion which needs to be understood and taken into account. The moral and ethical dimensions of biotechnology which often underlie public concerns present a crucial challenge for scientific, industrial and political supporters of biotechnology.

*The Editor*

## **From our Chairman: Manuel Carrondo**

By now, either because you have received the second announcement or as a web surfer going often through the ESACT home page, you have certainly realised that the Tylosand June 2001 meeting is unfolding very promisingly. The Organising Committee, under Elizabeth Lindner-Olsson as meeting secretary, has cleared all the early hurdles and also gathered a very strong team of keynote and invited speakers. It is your time to contribute by sending abstracts for oral or poster presentation prior to the deadline of late January 2001.

So, without further ado, I consider it my duty to deliver on my promises as stated in the *Newsletter* of July, to review with you ESACT's recent bridges to other societies and biotechnological requests - if you want, our "Foreign Policy" activities. Indeed, as Europeans, we need to improve cross-national activities and to support efforts that might strengthen Europe as a biotechnology operator, irrespective of country borders. Economically, such borders are losing importance; but, culturally, they certainly will be here for a long time - and the regulatory aspects on which biotechnology is so dependant come out of conflicting cultures from

the "not forbidden is approved" to the "not approved is forbidden".

ESACT has worked in parallel with the Animal Cell Technology Industrial Platform, ACTIP from its inception. This was created in the early nineties, by the then major practitioners of ACT in Europe, at a time when the European Commission wanted to promote a better link between the projects they funded and the companies that would be their potential users; also ACTIP was listened to in its positions on what should be funded, often coming against the European Commission tide for more "applied" projects, to defend fundamental research in ACT. Alas, political cycles are short, Europe moves on and so does the European Commission, now apparently less interested in the Industrial Platform design as it tries to define an ERA - European Research Area. Mind you ACTIP is probably the most active of the IRs because throughout the years it has managed to create some interest of its own in debating regulatory issues, preparing lobbying positions for the European Parliament and also opening itself up to SME's. Currently, ACTIP is debating different scenarios of activities for the years to come, under the new circumstances. ESACT has observer status, supported or partnered meetings and proposals to the European Commission to keep pushing the link between ACT and its industrial application; ESACT will certainly keep partnering with ACTIP for as long as they find value in us. (See [www.actip.org](http://www.actip.org) in particular for their recent position paper "Back to Basics - balancing fundamental and applied research for the future of the health and life sciences").

Over the last five years, ESACT has opened bridges to new biotechnological activities requiring, we think, some of our skills and ways of reasoning. More deliberately, we targeted tissue and organ engineering and gene therapy; for the former, efforts are in place to create an European Society, while the activity is now an active partner with the European Society of Gene Therapy ([www.biosci.ki.se/esgt](http://www.biosci.ki.se/esgt)). The ESACT- ESGT partnership started over two years ago and a *memorandum* of understanding, put together in ESGT Stockholm meeting, has been signed and will be formally approved in the next ESACT and ESGT Executive Board Meetings; this covers reciprocity of support and of members attendance in each other Societies meetings and opens up means for enlarging collaboration.

The European Federation of Biotechnology

([www.efbweb.org](http://www.efbweb.org)), which was strong in the seventies and eighties, has lost some of its influence as the field fragmented and took off. Under its new leadership Pierre Crooy, ex-SmithKline Beecham, President and Borge Diderichsen, Novo Nordisk, VP (and future President) it is creating larger sections than the earlier working parties, pushing for improved links to industry and academia and devising ways of interlinking with cross national societies like ESACT. This final point (cross national member societies) was included, under advice from ESACT, in the new draft statutes unanimously approved in Berlin (Biotechnology 2000 Meeting) to be presented to General Meeting in Madrid, July 2001. As a result of the closer rapprochement of late, ESACT has been preparing the ground for a Medical Biotechnology Section, whose main aim is to foster faster moves in Europe to push products and processes from biotechnology to clinical utilisation; a key component of such a section is, of course, to have members who are clinician practitioners. Working together with EFB and ESGT, a Steering Committee that met in Frankfurt last February, proposed a workshop entitled "From Medical Developments to Clinical Practices" conducted under the aegis of the European Commission External Advisory Group "Cell Factory" which took place in Brussels last June; the report conclusions and summary can be consulted in (<http://forum.europa.eu.int>).

This allowed us to invite some of the clinical participants to become members of the Medical Biotechnology Section. So, now, the Section seems ready to take off and, if some of ESACT's members want to push for it, you are most welcome (aims and current membership are published further along this *Newsletter*).

Outside Europe, as you all know, we link with the Japanese Association of ACT, JAACT ([www.agr.kyushu-u.ac.jp/jaact](http://www.agr.kyushu-u.ac.jp/jaact)), on a mutually beneficial approach, with reciprocity of treatment of members attending each other societies' meetings as well as sharing mailing and, more to the point, proposing some European experts to be invited to JAACT, as was done for this November's meeting. But the distance is substantial and not too many exchanges can be expected.

Much more informally, mostly only through members, links and consultation have existed with the U.S. Engineering Foundation "Cell Conference Engineering" which, among other things, have permitted meetings taking place in alternate years

to ESACT, thus ensuring a more continuous, global coverage of ACT fast moving activities. Please criticise, support or indicate willingness to be part of such efforts.

I wish you all a Holly Christmas and a Very Happy New Year 2001 when I expect to meet most of you in Tylosand.

*Manuel Carrondo*

## **The Medical Biotechnology Section - A bridge between research and clinical practice**

As earlier indicated and reviewed in my text in this *Newsletter*, ESACT and the ESGT put together some efforts to start up, under the aegis of the EFB - European Federation of Biotechnology, a Medical Biotechnology Section.

Its aims are:

### *Mission*

The Medical Biotechnology Section (MBS) aims to enhance the beneficial use of biotechnology in healthcare in Europe benefitting from the genomics revolution. The MBS will improve the biotechnology transfer into clinical practice for faster development of medicines by considering, in particular, the areas of:

- Gene and cell therapies;
- Organs and tissues;
- Therapeutic and diagnostic biologicals;
- Vaccines and immunologicals,

and foster their use through interaction among research academics, pharmaceutical R&D, clinical practitioners as well as regulators and public policy makers.

### *Activities*

The section will focus its activities at the interface between biotechnology tools and clinical/health practice and act as a forum to enhance networking on research, development, regulatory and training activities to expand the use of medical biotechnology knowledge for relevant healthcare applications.

Among others, for the first three years, the MBS will attempt to:

- i) Convene a workshop identifying the bottlenecks and opportunities in working at the interface between the nascent medical biotechnologies and clinical practice. This workshop would also propose ways of fostering these opportunities to

strengthen European clinical practice and healthcare industry competitiveness in particular with a view to fasten access to Phase I/II clinical trials;

ii) Put forward proposals on how to improve the support of European Commission Framework Programmes, in particular VI FWP, to bridge a perceived underperformance in developing Clinical applications of Medical Biotechnology in Europe;

iii) Bring together existing biotechnologists and clinical practitioners, at the core of Medical Biotechnology, and strengthen networking;

iv) Prepare "position papers" on needs at the interface of Medical Biotechnology/Clinical Practice; in particular, address guidelines for Medical Practice, product specification and education on Medical Biotechnology;

v) Work on the improvement of public perception and the spreading of biotechnology in the Medical area (in connection to the Task Group on Public Perception);

vi) Spread this interdisciplinary approach into existing congresses (EFB, ESACT, ESGT, .....) through sessions, symposia or satellite meetings or carry out own MBS meetings;

Link with relevant European Commission bodies, Industrial Platforms (Animal Cell Technology Industrial Platform, Yeast Industrial Platform, Structural Biology Industrial Platform, ...) and Clinical Practice Groups.

Currently, the "founding" members are:

Alain Bernard, Serono, Geneva, Switzerland

Michael Browne, SmithKline Beecham, UK

Ignacio Casal, Ingenasa, Madrid, Spain

Olivier Danos, Genethon, France

Juergen Lehmann, Univ. Bielefeld, Germany

Wolfgang Noe, Boehringer Ingelheim Pharma, Biberach, Germany

Elisabetta Balzi, DG XII-Eur.Com., Brussels, Belgium

Manuel Carrondo, IBET, Oeiras, Portugal

Gert Leroux-Roels, Gent Univ. Hospital, Gent, Belgium

Gert Jan B. van Ommen, Dep. Human Genetics, Univ. Leiden, The Netherlands

Anthony Dodi, Anthony Nolan Res. Inst., London, UK

Augustine Bader, Leibnitz Res. Labs. for Biotech. Artificial Organs, Germany

John Purves, Biotechnology and Biologicals, EMEA, UK

Papasotiriou Giannis, Mediforks, Greece

Torben Lund-Hansen, Novo Nordick, Denmark

If some of you want to propose some immediate

actions or become part of the team, please come forward!

*Manuel Carrondo*

## **The first European Technology Workshop on: Current Status and Trends in Mammalian Transient Protein Expression, Ittingen, Switzerland, October 2000**

### **Transient gene expression from mammalian cells - A new chapter in animal cell technology?**

Transient protein expression in mammalian cells has been used for more than 20 years in biomedical research.. Generally a small number of cells, not exceeding 10<sup>7</sup> cells, are exposed to a DNA vehicle, and, upon successful transfection, these cells begin to synthesize the product of a gene (or several thereof) during a short period of time (days). The rapid introduction of exogenous DNA in as many cells as possible assures that its' consequence becomes measurable or detectable instantly. Transient protein expression is based on a short residence time of transferred DNA molecules within the nuclear environment of cells. This is in contrast to the main mode of use of animal cells in the pharmaceutical biotech industry. Here, a gene of interest is integrated into the chromosome of a cell and creates a stable cell clone - for the eventual industrial scale-up for manufacturing purposes and theoretically indefinite usefulness of such cells

Maybe the interest shown in a recently held workshop in a picturesque monastery in the Swiss pre-alps emphasizes the emergence of a new chapter in animal cell technology . The all-Swiss organizers of the workshop were surprised themselves that the ex-Carthusian monastery in Ittingen near Winterthur hosted for two and half days more than 60 scientists and engineers, mainly industry based, from the major European countries and even a good number of scientists from the USA and from Canada. The workshop addressed just one theme - transient gene expression from mammalian cells - not from small scale cell culture, but from cultures that maintained 10<sup>9</sup> to 10<sup>11</sup> cells. We hesitate to use the term "large scale" here. The standard for large scale with mammalian cells are the manufacturing plants that can cultivate

1000 Liters or more of cells in a single reactor >10(12) cells. Considering however the scope of this workshop, it became evident that first steps of operations of transient gene expression at least for pilot scale operations are being aggressively explored.

The organizers, Dr Horst Blasey and his team (Dr Martin Jordan, Dr Sabine Geisse, Dr Ernst-Jürgen Schlaeger, Dr Martin Fussenegar and Dr Kenneth Lundström) were able to put together a high-level program that covered the various challenges of the field.

In the session "The cellular level: the basis for successful transient gene expression" talks by Tony Mulcahy (Cobra Therapeutics, UK) and Martin Jordan (EPFL, Switzerland) addressed some of the molecular and cellular bottlenecks in gene transfer to animal cells. Studies at Cobra have provided regions of DNA associated with ubiquitously expressed house-keeping genes (UCOE: Ubiquitously-acting Chromatin Opening Elements). Inserts of these 4-8 kb fragments of DNA into vectors provided high-level expression both from transiently and stably transfected mammalian cells. Work of the EPFL group showed that intracellular plasmid copy number after transfection is positively correlated with survival. This work also showed quite conclusively, for the first time, that calcium-phosphate transfected cells take up to 100 000 plasmid molecules up, mostly into endosomal compartments.

The session on "Expression: tools and Applications" featured a presentation of Ernst-Jürgen Schlaeger, Hoffman-LaRoche, on the Ro1530 gene transfer system that delivers with high efficiency DNA to cells, both in suspension and in an adherent mode. The advantage of this system is its low toxicity and the possibility to work with low DNA to cell mass ratios. Usually only 0.2 µg DNA/ml of culture medium is required, which is one fifth or so of the DNA quantity required by other systems. An interesting new cell host for transient expression was presented by Sam Cho of Bayer, USA. The cell line, HKB, combines, as a fusion product, the advantageous feature of high transfectability of HEK 293 cells with the single cell suspension growth of Burkitt lymphoma cells. A presentation by Randal Goffe, founder of Genespan Corporation, USA, dealt with an unfortunately undisclosed reagent Vectorstat<sup>®</sup>, capable of prolonging the expression of protein from transfected DNA through enhancement and stabilization. In the 3rd and 4th session on

technologies and scale-up, a very stimulating talk, highlighted by a large number of colorful microscopic images from transfected COS-7 cells, was given by Ingrid Caras of Eos Biotech, USA. The selective labeling of tag-sequence modified recombinant proteins from libraries allowed, from the staining intensity of the endoplasmic reticulum and the Golgi apparatus, to judge whether a novel protein faces processing problems within the cell. Also, this approach allows to categorize, in a rather efficient way, the subcellular localization (membrane, nuclear, cytoplasmic or secretory) of an unknown protein entity. A very stimulating talk was given by Tina Etcheverry from Genentech, demonstrating routine use of transient gene expression for the production of 10s to 100s of milligrams of research proteins at the 5 to 10 liter scale. The Genentech group uses a "self-made" lipid-based DNA carrier and CHO cells as hosts. They also reported the use of transiently produced protein, in the context of preclinical studies, in toxicity studies and efficacy studies in chimps. Interesting to note, in a very general assessment of screening of random DNA sequences is the observation that from more than 1000 proteins expressed so far, about one third appear to be poorly expressed, for reasons to be studied eventually and individually.

The most exciting presentation was probably given by the invited keynote lecturer Jean-Paul Behr, Université de Strasbourg - "Towards artificial viruses". Behr, the inventor of the very first lipid and polymer based transfection vehicles, some of them marketed, extended his work towards smaller and more virus-like particles. Most interesting, condensation of a polymerizable cation with a single plasmid molecule, allowed to generate complexes of 20 to 30 nm. These, together with nuclear localization signals, may eventually behave very similarly to viruses, and thus may improve by a factor 100 to 1000 the efficiency of artificial DNA vehicles in order to approach the nucleic acid delivery potency of viruses.

In another session "Technologies and Methods" Georg Schmid described the way DNA is extracted and purified for transient expression applications. This subject clearly requires more attention to understand exactly which level of DNA purity is required. Some poster results coming from the EPFL lab (J. Wright et al.) indicate that "crude" preparations made in controlled conditions are actually equivalent to and sometimes even more efficient than pure ones at transfecting some mammalian cells.

Overall, the First European Workshop on Transient Gene Expression provided a very stimulating atmosphere for the exchange of ideas and concepts, through session discussions and personal interchange, since enough time in-between the talks was held open for that purpose. It is to be hoped that there will be a second again soon, because it was felt that the attendees represented only the "tip of an iceberg" of interest. It demonstrates that this highly relevant and fast moving field does address the tremendous need of the biotechnology community for rapid protein expression these days.

*Alain Bernard and Florian Wurm*

### **ESACT 17 June 10 - 14 2001 Tylösand, Sweden 'From Target to Market'**

ESACT 2001 will focus on the role of animal cells in drug development from target to market. Topics will include the route from identification of drugs and drug targets to novel therapeutic approaches and marketed products.

Each session will feature invited speakers as well as contributions from speakers chosen by the scientific committee from submitted abstracts. As usual academic researchers and scientists from industry will be present along with a trade exhibition.

Eminent keynote speakers will include Marina Cavazzana-Calvo, Lawrence Chasin, Bill Haseltine, Bob Langer, Lennart Philipsson and Bengt Westermark.

Tylösand is on the west coast of Sweden midway between Gothenberg and Malmö. The Hotel Tylösand is a first class venue for conferences and recreation and is famous for its excellent sea-bathing and golf.

We invite you wholeheartedly to join us at ESACT 2001 in Tylösand for an exciting and stimulating meeting.

*Elisabeth Lindner-Olsson*

### **ESACT 18 mid-May 2003 Granada, Spain**

It is of course too early yet to say anything about the content of the next ESACT 18 meeting, but here are a few advance tidbits of general information about the venue itself. The city is quiet, cosy as ESACT likes, with charming people, and in sunny Andalusia. The Congress Palace is quite new and has all the facilities ESACT needs including good trade fair and poster areas. There are many hotels at different room rates within walking distance of the Congress Palace and the city centre. Social events will include a visit to the Alhambra. The weather should be pleasant in Spring, not too hot.

A word of caution - flights to Granada are limited, so booking well ahead will be advisable. There are however many more air connections to Malaga, and there will be special bus connections organised. You can also think about flying to Madrid and taking the super-fast train service to Granada.

*Francesc Godia*

### **Other Meetings**

- Jan 27-31 Palm Springs, California  
Lab Automation 2001
- Feb 3-7 Miami Beach, Florida  
Cell Death and Ageing
- Feb 12-13 Dana Point, California  
Biotechnology, Global Perspectives
- Mar 1-4 Costa Brava, Spain  
2nd European Workshop on Cell Engineering
- Mar 25-28 Maastricht, Netherlands  
European Group for Bone Marrow Transplantation
- Mar 31- Apr 4 Orlando, Florida  
Experimental Biology 2001
- May 15-19 Vienna, Austria  
International Congress of Human Genetics
- June 24-27 San Diego, California  
Bio 2001 + 28th Symposium on Controlled Release of Bioactive Materials
- Oct 9-11 Hannover, Germany  
Biotechnica 2001

## European Commission News

### Competitiveness and Equality - The EC-US Task Force on Biotechnology Research

The EC-US Task Force on Biotechnology Research is an excellent example of what can be accomplished through EC-US scientific policy dialogue and its work has over the past ten years established many important researcher-to-researcher relationships with better and better communication across the Atlantic. Dr Bruno Hansen of the European Commission and Dr Mary Clutter of the National Science Foundation are co-chairpersons of this Task Force, and they have been largely responsible for its open collegial forum, encouraging genuine communication and constructive thought.

Dr Hansen, writing in a recently published report on the Task Force's first ten years said with regard to key themes that equality was very important. "People in Europe understand that science in the United States is very good. They have the idea that perhaps we are not quite so good in Europe", Hansen said. "But we are. We are good in science in Europe. The key message is that Europe contributes as an equal partner in determining how front-line scientific research will happen" he continued.

Copies of the report "Mutual understanding" ref. EUR 19407 can be obtained from your local Euro-Info Centre or the Office for Official Publications in Luxembourg.

#### TSE Meeting

On 28-29 September researchers from the 54 EU-funded research projects on TSE diseases met to review the results of the European Action Plan which has mobilised EURO 50 million to understand, detect and combat TSE's like nvCJD in man, BSE in cattle and scrapie in sheep.

Encouraging results were presented on new detection systems, Europe-wide surveillance systems in both humans and animals, the nature of the infectious agents and the reduction of risks in the food chain. For the catalogue of the projects which involve 150 research laboratories. ref ISBN 92-828-9581-5 and more information contact [europa.eu.int/comm/research/quality-of-life.html](http://europa.eu.int/comm/research/quality-of-life.html)

#### Report on EFB Event 103

' Recombinant Protein Production with Prokaryotic and Eukaryotic Cells. A comparative view on host physiology'

The meeting was organized by the Microbial Physiology Section of the EFB (Organizing Committee chairman D.Mattanovich) in Semmering (Austria) 5-8th October 2000. The coorganizing/supporting organizations were the IAM (Inst.Applied Microbiol.), BoKu (Univ. Agricultural Sciences), the Federal Dept. for Educn., Science & Culture of Austria, ESACT, OGBT (Austrian Soc.Biotech.), VOLB (Austrian Asscn. for Alimentation Tech. & Biotech.) and OGHMP (Austrian Soc. Hygiene, Microbiol. & Prev. Medicine).

The meeting started noon on 5/10/2000 and finished on the morning of 8/10/00 and over 40 posters were presented. 7 Sessions and one poster session were organized dealing with host physiology for the production of recombinant proteins by using different microbial (animal cell derived systems included) expression systems. These sessions covered Metabolic burden and stress responses, nutritional and by-product formation, protein folding and secretion, genetic stability and gene copy number effects. Also included were transcription and translation in relation to growth and product formation, metabolic and cell engineering for improved protein production. In each session one or two specialists were invited to give overview or keynote lectures. The introductory and closing lectures were given by AC Hiatt (Immunoglobulins from plants - breaking the barriers to antibody production) and AS Spirrin (Protein synthesis and co-translational folding in cell-free translation systems) respectively.

Although the meeting was organized by the Microbial Physiology Section of EFB the organizer decided to include all existing expression systems in order to get, and present, a global view. This was partially achieved as there were more participants from the microbial field than from animal cell culture. However, this was only visible when the number of posters from the two fields were compared. Oral presentations were equally balanced with respect to microbial (bacterial, fungal) and animal cell based expression systems.

One fact which which underlines the global interest for such meetings and the success of this meeting

was the presence of over 170 participants from all fields of expression of recombinant proteins. The number well exceeded the planned 100 participants. Based on the success of this meeting it is intended to hold another in 2-4 years. Also a Conference Book will be produced of selected presentations (oral and poster) which hopefully will be published mid-2001.

*O-W Merten*

### **New Members**

Since our last *Newsletter* in July we are happy to welcome the following new members; Aziz Cayli, Boehringer Ingelheim Pharma, Biberach; Martin Clarkson, Novartis Animal Vaccines, Braintree; Jose Coco Martin, DSM Biologics, Groningen; Ingo Focken, Aventis Pharma Deutschland, Frankfurt.a. M; Cornelia Kasper, Inst. für Technische Chemie, Hannover; Sunil Kumar, Cochin School of Science & Technology, Cochin; Nicola Neff, DuPont Pharmaceutical Co, Wilmington; Thomas Noll, Forschungszentrum Julich, Julich; Donnacha O'Driscoll, Archport, Dublin; Thomas Steenstrup, Novo Nordisk, Bagsvaerd; Moshe Smolersky, Interpharm Laboratories, Kiryat Weizmann; Andrew Tait, University College London; Victor Vinci, Eli Lilly & Co, Indianapolis; Giles Wilson, NovoNordisk, Gentofte; Weerah Wongkham, ChangMai University, Chang Mai.