



ELSEVIER

Livestock Production Science 89 (2004) 79–107

**LIVESTOCK
PRODUCTION
SCIENCE**

www.elsevier.com/locate/livprodsci

In this issue (page numbers)

**EAAP
NEWS**



Editorial: Animal Scientists in an Enlarged Europe: Culture, Values and Ethics	(79)
Letter to the Editor: From Professor G. Bertoni, Italy	(85)
Future EAAP Annual Meetings	(86)
EAAP Notices	(87)
Rare Breeds International	(87)
Forthcoming Conferences of Interest to EAAP	(88)
European News	(91)
International News	(91)
Reports of Meetings	(92)
Book Reviews	(95)
Training Courses	(103)
Calendar of Scientific Conferences	(104)

Editor: John Hodges, Lofererfeld 16, A-5730 Mittersill, Austria. Fax: +43 6562 54814; e-mail: hodgesjohn@compuserve.com

August 2004

Number 51

**EDITORIAL: ANIMAL SCIENTISTS IN AN
ENLARGED EUROPE:
CULTURE, VALUES AND ETHICS**

Welcome to everyone in the Enlarged EU

The Editor of EAAP News joins with the leadership of EAAP in welcoming 10 new member countries to the enlarged European Union. This event of great historic import took place on 1 May 2004 and brought millions of European citizens into a closer relationship—closer in fact than existed before 1939 which started the violent break-up and long period of political and economic division in Europe society. The occasion of 10 new countries entering the enlarged EU passed quietly, but it has high significance for the future development of Europe. In this Editorial, we seek to understand some of the implication for agriculture, food, animal production and particularly for animal scientists.

The enlargement of the EU provides an opportunity to renew the invitation to all animal scientists and,

indeed all who are interested in animal agriculture, to contribute regularly to this Newsletter so that it reflects events from the EU, from the whole of Europe and beyond. To address this invitation only to the 10 new member countries of the EU would indicate a misunderstanding of what has happened. The enlarged EU is not simply the addition of 10 countries to the existing 15. The enlarged EU is a new organism of 25 member countries. Food production, which is the professional field of EAAP, will continue to be a major focus of activity in the enlarged EU because European countries each have their own historic and traditional farming patterns. The process of integrating farmers across 25 countries calls for time and patience. EAAP has a special role in welding the diverse traditions of Europe's farmers into unity without uniformity. EAAP, with 37 member countries, extends beyond the borders of the EU to the whole of geographic Europe, into the Mediterranean and beyond. Through EAAP, animal scientists have long experience of working together across national boundaries.

So, it may be natural for animal scientists to ask why we have a further contribution to make in dealing with diversity in the enlarged EU. “Aren’t we all scientists using the same proven scientific methods?” “Aren’t we all devoted to the same cause of food production?” “Why speak of the need for unity in diversity when we read the same scientific literature, use the same scientific code words and rarely disagree on anything other than trying to understand new discoveries?” The answer is that the development of an economically viable food chain in the enlarged community of 470 million people in the EU necessarily involves the integration of science within a range of diverse natural and social environments.

Enlarged communities

The enlarged EU is not the only area of the world where huge changes are in progress which have deep implications for agriculture and food. The current process of Economic Globalization through the World Trade Organization (WTO) aims to bring billions of people with different historic and traditional backgrounds into an open trading unity. These socio-economic movements in Europe and globally invite us, as animal scientists, to broaden our understanding of other people. Whereas 70 years ago an animal scientist, even in Europe, needed to be informed only about farming in his or her own country, today the food market embraces customers in many different countries and traditions. Expansion of the EU as a trading population not only brings greater economic unity as tariffs, taxes, old political barriers and border controls are removed; but it also vastly increases the diversity of life within one community. This is a new challenge to animal scientists.

The tendency of animal scientists during the last decades of the 20th century has been to adopt increasingly standardized production practices which offer the most efficient and low-cost routines for animal production. EAAP has been a successful forum where new scientific knowledge able to increase efficiency has been quickly shared across country boundaries bringing more evenness in animal production systems. Reduction in genetic variation within species testifies to the economic attractions of uniformity. Some animal scientists may be tempted to think, like McDonald’s executives, that worldwide

standardization of animal production is both desirable and inevitable and that the whole Food Chain should continue to become more uniform. Not so.

Europe is an older society than the USA and traditions do not easily yield to Fast Food. Historic cultures have a great variety of foods, practice assorted culinary arts, call for diverse dietary menus and expect meals to be community and family events contributing distinctive features to quality of life. The new Slow Food Movement recently started in Italy has growing support from more traditional societies worldwide (see page 88).

Diversity and Uniformity

One of the major debates about the nature of the EU focuses upon maintaining cultural diversity within economic unity. To many people, diversity in community emphasizes the separate identities. When people join a larger block such as the EU or the WTO for economic benefits, they do not want to lose their historic identity. This attitude is one of the enormous contrasts between Old Europe and the USA. Within a couple of generations, immigrant families to the USA have lost their former identity as a conscious value in daily living. Their historic culture becomes a charming and perhaps treasured root of family history which does not bear on the routines of life, but is perhaps explored on a vacation visit to the continent of origin. Samuel Huntington, in his new book “Who Are We: The Challenge to America’s National Identity”, recognizes this tendency as a significant part of American identity since the time of the founding fathers, but he thinks there is evidence that Mexican immigrants to the USA are changing this identity pattern. He considers the tendency to retain Spanish as a working language as well as English may be a new form of identity in the USA. Typically, however, in the USA the former identity shows only in the family name while second and subsequent generations quickly embrace the culture, values and ethics of the USA. Europe is different. In the EU, strong values of identity tie people to their historic cultures. These feelings are characteristic of older societies and occur also in the traditional societies of the developing world even though they join the global trading community—the World Trade Organisation (WTO).

Whereas the USA feels that its culture and values are so attractive they should be exportable, citizens in older societies usually insist on retaining their own language, culture and values even if they enter into economic partnerships in trading blocks. This pattern of human behaviour provokes many thinking leaders and thoughtful people on the street to recognize that success in the task of developing an improved quality of life in the 21st century is not brought about simply by economic blocks and political alliances. Consequently, in the enlarged EU and in the growing WTO there is much hard work to be undertaken to understand different cultures and values of people with disparate traditions and life styles. Since food plays a major part in defining cultural identity and values, animal scientists and agricultural scientists have a major new task in opening themselves to a new form of education: human culture, values and ethics. The implications of this trend are deeper than may first appear.

A new realm for animal scientists

Rarely do specialists in any professional field have difficulty understanding each other. They may disagree, but they understand what the difference is about. Animal scientists do not have problems communicating, understanding or working with each other in the laboratory. The new challenge is arising from the fact that the market for animal products is changing. With increased trade across traditional boundaries, animal scientists encounter new expectations from customers. These expectations have at least two forms. One is the wish to continue to buy animal products as they are prepared in the traditions of local cultures and indeed to export them as designated products (PDO—Protected Designation of Origin and PGI—Protected Geographical Indication). The second concerns the growing expectations from the market that consumers want their food to be nutritionally healthy and hygienically safe, derived from animals treated with respect, from systems that do not harm the environment and based upon sustainable farm practice with an increasing interest in locally grown and organic products. This dual set of values calling for traditional products from historic cultures and for the food chain to be based upon sound moral and ethical values confronts both

uniformity and the view that the market always insists upon the cheapest possible food.

These new factors in the enlarged market of the EU and beyond mean that scientists, in common with leadership in all specialist areas of society, need better to understand the culture, values and ethical expectations of the expanding economic communities in the world typified in Europe by the enlarged EU. To understand the depth of this problem, we need to step back for a moment and listen to the views and actions of some of the most respected leaders in human society as they work to bring about a better quality of life.

What do Top Leaders think is the Problem?

In 2003, in anticipation of enlargement, the European Union launched a Reflections Group to deliberate on the question of European identity. The brief to the Reflections Group calls for better understanding on the question of European identity and common European values in their relation to the social and political structures of the enlarged EU. In his statement at the first meeting of the Reflections Group, the President of the European Commission, Romano Prodi, said, “If we are to build a Europe inspired by a sense of common destiny, we need to reflect upon the cultural background which allows a specifically European phenomenon of unity within diversity”.

Placing culture, values and ethics into the public arena is not limited to Europe. In the USA, recent large-scale corruption in several businesses has shocked the nation and the world into realization that even in civilized Western society a sub-culture of corruption exists which holds self-centred values leading to unethical behaviour. The events provoked legislation defining new ethical standards for business executives based upon the values which society expects leaders to practise in public life.

At the world level, the President of the World Bank, James Wolfensohn, personally convened and spoke at a World Bank International Conference on “Cultural and Spiritual Values in Development” in which he emphasized that economic methods to alleviate poverty must be integrated with the cultural values of the societies being served. He emphasized that professionals working in specialist roles or organizations must measure their own professional and personal cultural values alongside the expect-

ations and values of the people they seek to serve. On another occasion, in London in May 2004, Mr. Wolfensohn spoke of “The challenge in economic development of uniting in dialogue on equity and social justice—about what is right.” He said: “Absent from the debate at the moment is any sense of moral values or even spiritual values in development. And, we are so used to beating each other up in terms of what I do, what you do, what we’ve got wrong, what Europe’s got wrong, what America’s got wrong that we have to get back to searching our souls for values. Today, 45% of the world population is under 24 years of age. I have personally taken time to talk with many of them in the last couple of years. They are turned off by the lack of values in the leadership of the world. None of us is giving these young people a real, true sense of purpose and a true sense of values and a true moral case in terms of the issues of development and social justice.”

Thus, we hear thoughtful top leaders in Europe, in the USA and at the global level calling for culture, values and ethical behaviour to influence socio-economic development. If one asks ordinary people of all ages in Western Europe for their views on these issues, one often hears the same message. To meet this opportunity, animal scientists have to integrate positive values and ethical actions with science, technology and economics to serve the expectations both of the billions of poor in developing countries and the millions of affluent people in the West.

Dr. M.S. Swaminathan, a high profile Indian agricultural geneticist who has held scientific posts including Director-General of the International Rice Research Institute, Chief Planner of the Indian Government and holder of the prestigious World Food Prize, has called for parallel Globalization of Ethics with Trade especially for agriculture and food. Nelson Mandela, former President of South Africa, addressed a United Nations meeting in June 2004 and said, “Feeding the world is a moral not an economic problem”.

Culture and Behaviour of Animal Scientists

If EAAP and animal scientists in Europe are to enter fully into this changing world, we need to define more precisely within our own profession the issues of culture, values and ethics. Culture is well defined as

the way in which a group sees itself and what it accepts as normal behaviour. “The way we do things around here” is an easy but accurate way to describe culture. Clearly, culture is not limited to traditional clothes, music, architecture and food, of which Europe has so much diversity. Culture has a deeper level of meaning related to group beliefs which direct the way people do things. Values and behaviour in any group are determined by history and traditions forming consensus among people who share a common identity and activities. Individual scientists are not only scientists—they also belong to other groups. No doubt, animal scientists from Turkey and from Germany have different cultural traditions affecting their behaviour at home. But when they gather in EAAP Meetings as animal scientists and work together on problems of food production, they share the common scientific culture. These practices include conformity to the modalities of scientific research, formulating agendas for meetings, protocols for oral presentations and discussions at meetings and the format and language of written communications. These ways of behaving together as scientists are neither exclusively Turkish nor German. A non-scientist from either Turkey or Germany who tried to inform the group on how to conduct scientific research would soon be identified as an outsider whose views would not likely change the way animal scientists believe things should be done. This scientific sub-culture and behaviour pattern is highly commendable for its efficiency in use of scientists’ time, accuracy in communication and ability to create a working environment in which the rigours of the scientific method can be used, checked and validated. You have to be a scientist to belong to this sub-culture and to follow its norms of behaviour. Research results which fail those tests are quickly identified as bogus and are rejected.

Values and Ethics

The issues raised by the world leaders quoted above are concerned less with the methodologies of a specialty sub-culture such as the scientific method used by animal scientists. Instead, these speakers target the values or beliefs by which research objectives are identified and by which production systems are designed. The present generation of animal scientists

working in the food chain has been tutored to value “efficiency” above all other values both in research and in practice. We measure this efficiency in biological and economic terms and we broadly describe it as “productivity”—meaning research and systems to get more out of less. With the assumption of efficiency and productivity as over-arching values, it is easy to assume they are fore-ordained and have always been so. But this paradigm of efficiency and productivity is now subject to review by external social auditors—namely by society.

Having values questioned is threatening. Values are so called because they matter to an individual or to a cultural sub-group. People shape their lives by their values. Personal resources of professionals such as finance, time and energy are allocated by accepted values. Within professional sub-groups such as scientists, economists, development experts, financiers, bankers or administrators, the accepted values of peers are the norm. For creative artists, this would not be so true as they listen to an alternative drum-beat, nor of politicians whose ears are tuned to listen to changes in the values of the electorate.

But within the professional sub-groups of scientists, individuals are praised and gain recognition for original research, but it has to be within the assumptions of the group; whereas those who propose alternative assumptions and objectives are liable to be regarded out-of-touch and ignored. An example of this rejection is the original strong resistance from agricultural scientists to suggestions that organic food should become a feature of the food chain. This idea conflicts with the values of efficiency and productivity and was initially dismissed as unscientific and impractical. Similarly there was, at first, a strong reaction by scientists for modification in production systems for animal welfare—again because it was seen as reducing efficiency and productivity.

Understanding the new Values and Ethics

Let us illustrate the difficulty of changing established values in another way. Scientists recognize and understand without difficulty the award of Nobel Prizes for original contributions to scientific knowledge. Here are two examples which have affected animal science and the food chain. Kary Mullis received his Nobel Prize in 1985 for inventing the

Polymerase Chain Reaction (PCR) to amplify DNA. Stanley Prusiner was awarded a Nobel Prize in 1997 for discovering prions. We readily understand these scientific triumphs and awards. They do not conflict with our professional values—rather they reinforce them.

But, as scientists we have greater difficulty understanding what international leaders, like the President of the World Bank, are talking about when they ask agricultural scientists to integrate equity, social justice, human values and ethics into development of the food chain. It means we are encouraged to ensure that PCR and the new knowledge of prions are used in food production not simply to improve productivity but also to ensure that their use contributes to a better quality of life for all.

This way of thinking requires a new paradigm for scientists in the food chain. Values from outside the membership of a specialist sub-culture have to be incorporated, studied and worked into the routines of daily behaviour. This is a new approach. In advanced Western society, scientists are used to generating their own values within the group. The call to listen to alternative values of a diverse society is not easy.

Current examples of incorporating new values

Now we need some examples in which animal scientists are learning to incorporate the values and expectations of society. As a first example, we look at the vexed question of meat and bone meal (MBM). Scientifically and economically, the idea of feeding slaughterhouse waste back to domestic animals was brilliant. First, it captured the feeding value of animal protein waste by recycling it as animal feed and in so doing replaced the need for growing new protein, thus releasing land for other crops. Second, it reduced the costs of importing animal protein from distant sources as the supplies of animal offal are close to intensive animal production areas. Third, it reduced substantially the high costs of disposing of animal offal, a cost without a benefit. Fourth, it minimized environmental pollution by avoiding the problem of where and how animal offal is disposed. At the time, feeding MBM seemed a perfect fit for the values of efficient use of resources, increasing productivity and reducing the costs of animal products.

The saga of Bovine Spongiform Encephalopathy (BSE) does not need retelling here—an update was given in the EAAP Editorial in April 2004 (*Livestock Production Science*, 87 1 pages 46–52). Today, scientists know more about BSE and variant Creutzfeldt–Jakob Disease (vCJD) and have regained some confidence. It is now believed that MBM could be safely fed to non-ruminants without any threat to animals or to humans. However, the EU has decided against reintroducing MBM as animal feed because of the bad image created in the public mind by the negative BSE and vCJD experience.

Prior to BSE the public did not know they were eating meat produced from domestic farm animals which had been turned into cannibals. Since learning this, public opinion has expressed outrage and undoubtedly some people have stopped eating animal products. However, the deeply significant point is that scientists were unaware of public values concerning food animals being cannibals. If scientists had consulted public values prior to the original introduction of MBM to animal feed, it would have been rejected. With MBM, we have a current example of how the single-minded value system of animal scientists for efficiency has since been modified by taking on board a value from the consuming public. The cost of making the decision about MBM without public consultation has cost society dearly. A retrospective analysis in the recent EAAP Working Group report “After BSE” (EAAP Publication No. 108, 2003, Ed: Cunningham, E.P.) estimates the cost of BSE to be the enormous sum of Euros 92 billion Net Present Value—equal to the whole annual budget of the EU. The consequential costs of feeding MBM are in excess of the benefits quite apart from the lost credibility of scientists and the suffering of vCJD victims. The fact that the scientists who made the decision to feed MBM to domestic food animals did not think any public consultation was necessary before introducing the practice as a routine in the human food chain shows how wide the gap in values was at that time between animal scientists and the consuming public. That gap in culture, values and ethics has fortunately begun to narrow.

A second example of how animal scientists are slowly taking the values of society into their thinking is Sustainability. This concept calls for

farming practices to leave the natural resources in equal or better shape after use than before. Sustainability is generally used as a technical term but in fact it has a moral foundation. Sustainability refers to the old practice of good husbandry which has been a traditional practice of farmers for millennia. Why have millions of farmers, with few exceptions like those in arid parts of Africa who use shifting cultivation, always practised sustainable management of the natural resources? It is because they know that they belong to a community of life which extends from the past to the present and into the future. This brings us back to diversity, because the common historic practices of good husbandry (sustainability) avoided mono-culture by following mixed rotational agriculture. These sustainable routines may still be seen further east in Europe and in many developing countries. By contrast, modern Western agricultural science has moved away from diversity in farming and into mammoth single-product enterprises. This track, driven only by the values of efficiency and cheap food, lowers the quality of life through environmental pollution, abuse of animals, mono-diets, fast food, obesity, food health scares and lost community experiences of shared Slow Food culture. That track has also produced an excess of food in Western society while half the world population continue to live on less than two dollars per day.

Conclusion

The enlargement of the EU and the other movements to create large trading blocks for food throughout the world are stimulating a revival of cultural identities and values. Lowered trade barriers increase the linkage of human society throughout the world making intelligent and thinking people realize that humanity is one community. We are also learning that food is the lowest common denominator in the world community. Everyone eats. The three billion poor and the wealthiest folk in the West all share a need for food.

The tendency for Western intensive farming to produce more uniform, standard food products suitable for Fast Food living is being resisted by older cultures who join the new economic trading communities. They assert their historic identities and

cultures in many ways—but one of the most powerful is through food. Though traditional cultures enjoy the benefits of advanced economic trading in manufactured goods through membership of the EU and the WTO, nevertheless they argue for retaining diversity in agriculture and food and prefer Slow Food cultures and values.

In Europe especially, but also throughout the world, agricultural and animal scientists face a new opportunity, namely to adapt their ‘efficiency paradigm’ to ensure that cultural diversity, respect for human values and ethical behaviour is part of their value system in applying science in the food chain.

John Hodges, Editor
EAAP News

LETTERS TO THE EDITOR

A response to the Editorial in EAAP News No. 48, August 2003, LPS. 82. Pages 259–264 by Giuseppe Bertoni

Which values for Scientists?

I read the Editorial on: “Science, Scientists and Values” in the August 2003 EAAP News in Livestock Production Science, 82. 259–264 and I agree in principle with the writer John Hodges who seeks to identify the values needed for positive human life. It is obvious to me as a Christian that one must behave according to some values resulting in positive effects upon society. The Editorial specifically asks questions about the values of scientists and considers they should “benefit society as a whole”. I do not agree with anchoring science policy to the *common thought of society*, which can change quickly under the pressure of utility and that seems dangerous to me.

On this subject, the Editorial argues that society is now calling for food other than simply the “cheapest possible food” and cites six other values including: more expensive foods with gustatory, ethnic, health, and regional qualities; products designated PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication); animal welfare; environmental protection; health and safety expectations, etc; and quality of life in rural surroundings. I do not agree

because these types of food are *only* for rich people and in Europe they *cannot* be considered for everybody. We must remember that a large proportion of European families live on € 15,000–20,000 per year or less and they cannot tolerate 50–100% higher prices for all foods: bread, pasta, milk, fruit, etc. In Italy, a country of the Mediterranean diet, recent statistical data shows a 1.5% reduction in fruit and vegetable consumption and a 5% reduction in cheese consumption (7% of DOP cheeses) related to price increases last year.

A second point in the Editorial sets productivity against quality and safety. I disagree that these two work in opposition and I give two examples that are close to my experience. The first is milk for Parmesan cheese: nowadays, cows produce 7–8000 kg of milk, double the amount of 50 years ago, and the cheese is much better than in the past. The second is pork leg for Parma ham: the quality is superb despite the fact that pigs are growing faster than in the past. Of course, there are niche products like those produced from old breeds and by organic farming, etc., whose quality is *sometimes* better but their prices are for the very wealthy or for occasional consumption. On the point of safety one can say, in general, that food is always safe.

The Editorial seems to neglect the fact that not all the regions of Europe and also many regions throughout the world are fortunate in having good economical, environmental and technical conditions for food production. For example in Italy, the cost of land is so high that intensive practices are often unavoidable. Further, I do not agree that sustainability, safety, welfare, landscape and acceptable organoleptic traits cannot be obtained by combining advanced technologies for productivity with the specific traditional qualities. On the contrary, since 1968, I have been working to reach that goal, at least for milk used in the production of Grana cheese.

No doubt there are scientists “whose basic values are grounded in maximising the profit of their employer”. Nevertheless it depends on who is the *employer*. I work in an *unfettered* University but my real employers are the farmers and the consumers, both when I work to improve dairy cow efficiency and milk quality and also when I co-operate in my work with firms in the fields I have chosen. I am convinced that higher efficiency means lower costs

not only for food but also for the environment and more opportunities for consumers; higher efficiency means good management by the farmer, not necessarily special supplements and additives. Unfortunately, I have to recognize that lower costs do not always bring an advantage for the farmer or for the consumer. But this problem is not my responsibility nor of scientists in general; in a complex society, someone else must balance the whole system. I consider it unacceptable to question the objectivity, independence and integrity of scientists in using their knowledge in the service either of all society or of sectional interests because it implies a generalization on the motives of all scientists.

I think that many scientists, but not only scientists, may behave badly but I do not accept that ethical rules to decide who is behaving badly can be decided by society alone. How many monstrous laws have been promulgated in the past and present? Of course, laws must be respected, but cannot always be considered real values as the Editorial seems to suggest to me. The market also may be considered a rule-maker but everybody, scientist or not, has his or her own conscience and can correct what the market suggests. Personally, I am much more worried about those people who wish to *plan* research; people that were against GM plants now propose (or would impose) their utilization not for higher production, but “to replace some of the lost flavours. . .”. Science can be *addressed*, but not *planned*.

Scientists should behave ethically, but the final responsibility for the use of their product must rest with a representative of society (*after a proper evaluation of costs and benefits by an appropriate Independent Agency*). Mistakes are always possible but it seems to me inappropriate to hold scientists responsible for mistakes discovered after use. I give two examples of this:

- (1) After widespread use, DDT was discovered to be a mistake, but what a lot of benefits its use had produced; for example, in Italy, malaria disappeared even though natural water-logged lands remained;
- (2) Meat and bone meal (MBM) is the vector responsible for spreading BSE. But it was used before *the very recent* discovery of prion-caused diseases which nobody could have forecast.

Feeding MBM was the optimal way to dispose of it.

Some time ago I *discovered* an oath suggested by Sir Rotblat for scientists: “I promise to work for a better world, where science and technology are used in socially responsible ways. I will not use my education for any purpose intended to harm human beings or the environment. Throughout my career, I will consider the ethical implications of my work before I take action. While the demands placed upon me may be great, I sign this declaration because I recognize that individual responsibility is the first step on the path to peace” (Science, vol. 286, 19 November 1999, 1475).

I would like to suggest that all scientists should take this oath. Therefore, the Editorial is right to show concern about scientists and values. However, it is not appropriate to consider other scientists as behaving badly only because they have a different view of animal production activity. Animal husbandry can have different objectives, according to the different needs of our societies, within a large range starting from the needs of low-income families to those of gluttons. In a modern society, I suppose it is wise to take all of them into consideration.

Finally, although I have some differences with the Editorial, I completely agree with John Hodges about the need for ethical values to drive everybody’s lives, scientists included. But again: which values? Selfish or altruistic? Considering man or nature first? And so on.

Professor Giuseppe Bertoni,
Istituto di Zootecnica
Facoltà di Agraria, U.C.S.C.
Via Emilia Parmense 84
29100 Piacenza, PC, Italy
email ist.zootecnica-pc@unicatt.it

FUTURE EAAP ANNUAL MEETINGS

2004: 55th EAAP Annual Meeting will be held in Bled, Slovenia from 5 to 9 September, 2004, with the overall title of “Sustainability and the interaction of the animal with the environment”.

A list of Satellite Symposia is given at the end of this issue of EAAP News under Calendar of

Scientific Conferences. Fuller information on the programme and Satellite Symposia may be found in EAAP News No. 50, April 2004, LPS Vol. 87. No.1. Pages 55–59. Updates may be found at the EAAP website: www.eaap.org and the Annual Meeting website: www.bfro.uni-lj.si/EAAP2004. Final information regarding registration is available at the Official Congress Agency, CRA-Domale, Groblje 3, 1230 Domale, Slovenia, Phone: +386 41 546 484, Fax: +386 1 7211 701, E-mail: Marija.Klopcic@bfro.uni-lj.si.

2005: 56th EAAP Annual Meeting will be held in at the Swedish University of Agricultural Sciences in Uppsala, Sweden from 5–8 June 2005. Information: www.conference.slu.se/EAAP2005.

2006: 57th EAAP Annual Meeting will be held in Antalya, Turkey.

2007: 58th EAAP Annual Meeting will be held in Ireland.

EAAP NOTICES

EAAP PROGRAMME FOUNDATION

Our Question

EAAP aims to bring to our annual meetings, speakers who can present the latest findings and views on developments in the various fields of science relevant to animal production and its allied industries. In order to sustain the quality of the scientific program that will continue to entice the broad interest in EAAP meetings, we have created the “EAAP Program Foundation”. This Foundation aims to support Invited speakers by funding part or all of registration and travel costs. Delegates will also be supported from less-favoured areas by offering scholarships to attend EAAP meetings, and young scientists by providing prizes for best presentations.

The “EAAP Program Foundation” is an initiative of the Scientific Advisory committee (SAC) of EAAP. The Foundation is aimed at stimulating the quality of the scientific program of the EAAP meetings and to ensure that the science meets societal needs. In its first year (2003), the “EAAP Program Foundation” con-

centrated on the program of the Genetics commission. From 2004 onwards, the activities will be broadened to the entire meeting. The Foundation Board of Trustees oversees these aims and seeks to recruit sponsors to support its activities.

EAAP Program for 2004

Information: EAAP, Villa del Ragno,
Via Nomentana 134, Rome 00161, Italy,
Email: rosati@eaap.org : www.eaap.org

EAAP Database

EAAP is creating a database mainly aimed at supporting appropriate connections among scientists belonging to EAAP countries and to allow us to give customized services that we are implementing.

Such database will contain the expertise fields for each scientist and will be used to develop the opportune network, based on the interest of each participant.

All the interested scientists are kindly requested to download it, fill-in the form and return it by e-mail to EAAP Secretariat at: mosconi@eaap.org.

Privacy laws will be strictly respected. EAAP Secretariat apologises in case you receive this message more than once, since it has been automatically generated browsing our databases. A specific form is now available on the EAAP web-site (http://www.eaap.org/docs/database_enquiry.doc).

Best personal regards,

Andrea Rosati, Secretary-General, EAAP, Rome, Italy

NEWS FROM RARE BREEDS INTERNATIONAL

The next Global RBI Conference will be held in South Africa from 27 September to 1 October 2004 at Bloemfontein, South Africa. Information: Dr. Keith Ramsay, email: keithr@nda.agric.za. Website: www.rbi.it.

The following RBI International Conference will be held in Vietnam in 2007. For other information on RBI contact: mosconi@eaap.org or the website: rbi@rbi.it.

FORTHCOMING CONFERENCES OF INTEREST TO EAAP

In date order

SAVE-ANNUAL MEETING IN BLEĐ, SLOVENIA

2–4 of September 2004, Bled, Slovenia

The annual meeting of SAVE Foundation and SAVE network will take place from 2 to 4 of September 2004, together with DAGENE in Bled, Slovenia. The tentative programme will cover the following issues:

Thursday 2nd September:

Day: Field trip: Plant Breeding

Evening: Meeting of the SAVE-Project Commission

Friday, 3rd September:

Morning: FAO/DAGENE-Workshop

Meeting of the SAVE-Network (Council of Cooperation Partners)

Afternoon: Field Trip: Animal Breeding

Evening: Meeting of the Board of Directors

Saturday, 4th September:

DAGENE-Symposium on Specificity and influence of the autochthonous animal breeds on the quality of the local meat and milk products with product exhibition and sample tasting.

The conference programme is available: office@save-foundation.net.

20th SCIENTIFIC MEETING OF THE EUROPEAN EMBRYO TRANSFER ASSOCIATION (A.E.T.E.)

Lyon, France September 10–11 2004

The 20th Scientific Meeting of the European Embryo Transfer Association will be held in Lyon, France from 10 to 11 September 2004. The main program will include presentations on

- Embryo transfer and IVF/OPU technology in cattle breeding
- Energy balance and reproduction in the high-yielding dairy cow
- Reproductive techniques for endangered farm animals
- Embryo mortality in farm animals

In addition, there will be two workshops on

- Micromanipulation of cattle ova/embryos
- Pregnancy diagnosis in farm animals

Information: Jean-Marc Lalloz, Merial, 29, Avenue Tony Garnier, B.P. No. 7123, 69007 Lyon, France. Tel.: +33 472 72 3221; fax: +33 472 72 3205. Email: jean-marc.lalloz@merial.com. Website: <http://www.fbn-dummerstorf.de/fb4/acte/start.htm>.

AGRO-BIODIVERSITY AND RURAL HERITAGE

Balkan Fair and Balkan Workshop

24–25 September 2004 in Serbian Dimitrovgrad

After the success of the first regional Balkan Fair “Agro-Biodiversity and Rural Heritage” in autumn 2003, the fair will be carried out for the second time from 24 to 25th of September 2004 in Serbian Dimitrovgrad. Again, numerous endangered breeds from the region will be shown. The Monitoring Institute and SAVE Foundation will use the opportunity to invite their regional partners and contact persons for a workshop, and to discuss the situation of rare and missing breeds of the Balkan, to set up a Balkan network and to evaluate the need for action. Information is available from Natura Balkanika: balkanika@ptt.yu or office@save-foundation.net.

INTERNATIONAL SOCIETY FOR ANIMAL HYGIENE (ISAH)

11–13 October 2004

This conference will be held at Saint-Malo, France from 11 to 13 October 2004. Information from Secretariat: Geneviève CLEMENT ISPAIA-ZOO-POLE développement, BP 7-22440 PLOUFRAGAN-France. Tel.: +33 2 96 78 61 30; fax: +33 2 96 78 61 31. Email: isah2004@zoopole.asso.fr. Web: www.zoopole.com/ispaia/isah2004.htm.

TERRA MADRE

A World Meeting of Food Communities

Slow Food Movement

Turin, October 20–23, 2004

Aims of the Slow Food Movement and of the Conference

The Slow Food Movement will hold a World Meeting in Turin, Italy between producers and others

in the agri-food sector throughout the world. The aim is to explore a new and different way of considering food production—an approach which is attentive to environmental resources, global balance and product quality. The meeting will be held concurrently with the Salone del Gusto 2004 (21–25 October 2004). This event is being sponsored by the Ministry of Agricultural Policies and Forestry, the Piedmont Regional Authority and the City of Turin. About 5000 people will attend from a many countries around the globe. The main focus of the meeting will be on food communities. This new concept, “Food Communities”, refers to an extended chain, from small farmers to traders, and is the event’s central theme. The 5000 small farmers, producers and others involved in the sector will be attending the meeting as representatives of more than a thousand communities.

The first stage will focus on issues of concern to all food producers today: biodiversity, hunger, poverty, water, sustainability, traditional technologies, organic agriculture, the role of women, the linkage between rural economic development and prevention of conflicts. These and many other issues will be addressed by various work groups. Discussions will, however, be conducted in a spirit of constructive proposal, not criticism, by presenting case studies illustrating exemplary solutions.

The second stage of discussions, following the same method, will be in the form of workshops dedicated to individual productions—rice, maize, coffee, wheat, tubers, fishing, breeding etc. Here the various work groups will be able to share information on technical matters.

Agenda of meeting

The meeting brings together representatives of food communities from around the world. The communities—of significance due to the quality and sustainability of their production—will be provided with a place and a time for presentation and discussion of positive solutions to common problems in various countries. It will not be an occasion for reporting problems, but an opportunity to analyze and discuss solutions. Individual meetings will be managed by communities themselves, allowing them to share their experiences and focus on their criteria for progress

and development. This may mark the emergence of a solid commitment to support and promote a new and wiser approach to world agriculture, and a new way of thinking about food production.

Draft Program

Participants are expected to arrive in Turin by October 19, 2004. The 4 days of the meeting are planned as follows:

First day (afternoon of 20/10): plenary session. Official speeches of welcome, presentation of the event by the organizers, contributions from some of the coordinators.

Second and third days (whole days of 21 and 22/10): work groups divided by topic.

Fourth day (morning of 23/10): plenary session. Comments from observers at end of working sessions.

The meeting will end in the evening of October 23.

Translation. There will be at least six official languages.

Accommodation and food

Accommodation and food will be required for 5000 participants for the duration of the event. The idea is to directly involve the entire region of Piedmont. For accommodation, it is intended to enlist support from political, administrative and religious bodies, as well as volunteers and various civil and professional associations based in Piedmont. Groups of participants will be provided with accommodation by institutions and associations, who will thus be actively involved in the event. All the “host communities” will be asked to assume responsibility for the participants for the expected number of nights and for meals and to make a contribution towards the costs of transport to and from Turin. Slow Food will undertake the organizational work of identifying and involving suitable communities.

Travel

The 5000 participants will be representatives of communities from more than 100 countries. The idea is to totally cover the travel costs for those coming from poor countries (Africa, South America, Asia, excluding Japan. . .), provide a partial contribution for those from North America and some parts of Europe and no contribution for Italian participants.

Organizational Aspects

Organizational aspects can be grouped under two main headings: an organizing secretariat addressing the hiring of staff and a local working party to manage logistics. For both these requirements, we are again relying on the support of volunteers and associations who can be involved on different organizational levels. A large number of volunteers will also be needed on the days the meeting is held. There will also need to be a central organization to coordinate everything and to be involved for over a year in identifying and recruiting participants.

Information

Further details may be obtained from: Slow Food, Via della Mendicita' Istruita 14, 12042 Bra (Cn), Italy. Tel.: +39 172 419611; fax: +39 172 414 498. Email: p.jona@slowfood.it. Websites: www.slowfood.com www.terramadre2004.org.

Salone del Gusto, Slow Food International Food and Wine Show

This international event will be held in Torino, Italy from 21 to 25 October 2004 in connection with the Slow Food, Terra Madre Conference mentioned above. Information: s.abbona@slowfood.it, Web: <http://www.slowfood.com>.

INTERNATIONAL SYMPOSIUM ON THE FUTURE OF THE SHEEP AND GOAT SECTORS

This symposium will be held in Zaragoza, Spain from 28 to 30 October 2004 organized by CIHEAM, IAMZ, IDF, FAO, EAAP and ICAR. Information: iamz@iamz.ciheam.org. Website: www.fil-idf.org/sheepgoat2004.

THE XX INTERNATIONAL GRASSLAND CONGRESS

Dublin, Ireland: 26 June–1 July 2005

The International Grassland Congress (IGC) is the premier world event for grassland research and

development and attracts around 1000 delegates from about 100 countries. Since its beginning in 1927 in Leipzig, Germany, the IGC has been held about every 4 years in different locations around the world. The XX Congress will be held in Dublin, Ireland from 26 June to 1 July 2005 to be followed by five concurrent satellite workshops of 3–4 days in various locations in the UK and Ireland.

The Congress theme is 'Grasslands—a global resource' and this reflects the concept of grassland as a vital resource in most of the agro-climatic zones of the world from the point of view of food production, income generation, and environmental sustainability and enhancement. The Congress centres on issues of key current importance in view of the major changes that have taken place in the requirements from grassland and in the research agenda. Issues of food quality and approaches to satisfy both agricultural and environmental objectives from grassland will be fully debated. The Congress is organised around a number of plenary papers, and simultaneous sessions in the three thematic areas:

- Efficient Production from Grassland
- Grassland and the Environment
- Delivering the Benefits from Grassland

In each session, invited papers will present critical in-depth, up-to-date global appraisal of scientific information. There will then be opportunities for offered oral and poster presentations.

Satellite Workshops which follow the main Congress are designed to allow more critical analysis of selected topics. The locations and topics are as follows:

- (1) Aberystwyth: Genetic improvement of grasses and other forage crops incorporating the 4th International Symposium on the molecular breeding of forage and turf.
- (2) Belfast: Silage production and utilisation incorporating the XIV International Silage Conference.
- (3) Cork: Utilisation of grazed grass in temperate animal systems in association with the European Grassland Federation.
- (4) Glasgow: Grassland-based systems in marginal environments.

- (5) Oxford: Optimisation of nutrient cycling and soil quality for sustainable grasslands.

CRITICAL DATES: offered papers (1 page in length) for oral or poster presentation for the main Congress must be submitted by 31 August 2004, and for the satellite workshops by 30 November 2004. Papers may be accepted for presentation at both the main Congress and a satellite, in which case they must be submitted by 31 August. See the web site for full details.

Registration

The early registration fee (by 15 March 2005) for the main Congress is € 495, and € 200 for the satellite workshops if the main Congress is also attended. Please see the web site for full details, including details of pre-congress tours, accompanying persons programme and online registration form.

Information: Congress Secretary, Dr. Frank O'Mara, Department of Animal Science, University College Dublin, Belfield, Dublin 4, Ireland, Tel.: +353 1 716 7142; fax: +353 1 716 1103. E-mail: igc2005@ucd.ie. Web site <http://www.igc2005.com>.

EUROPEAN NEWS

European Parliament plans to support biodiversity conservation

The European Parliament has presented a draft to change the Council regulation 2092/91 (ecological agriculture). This very progressive document demands under the topic "biodiversity" that small-scale local production on basis of local and "old" varieties should in future be distinguished from large-scale production with modern varieties as regards the support of ecological agriculture. This is aimed at within the sense of specific conservation of agro-biodiversity. The proposal is met with undivided consent of conservation organisations. SAVE Foundation also prepares itself for the future realisation of the proposal.

European SAVE Foundation

The Quarterly e-mail Newsletter of the European SAVE Foundation (Safeguard for Agricultural Vari-

eties in Europe) is available on the web in English, French and German. <http://www.save-foundation.net/english/actual.htm>.

Summary of the contents:

SAVE Focus 2003 published
News from the SAVE Board of Directors
SAVE Foundation on the upswing
Convention on Biodiversity news: Conclusions of the 7th meeting
EU Commission launches 1467 replacement program
EU Commission battles against animal diseases
Important dates

For more information please contact:

SAVE Foundation, Head Office
Paradiesstr. 13, D-78462 Konstanz/Germany
Phone: +49 7531/455 940
E-mail: office@save-foundation.net
Website: <http://www.save-foundation.net>

INTERNATIONAL NEWS

FAO Livestock, Environment and Development Initiative (LEAD)

The FAO LEAD Initiative announces the release of the LEAD Digital Library on CD-ROM. It contains over 130 publications in English, French and Spanish which address critical livestock, environment and development interactions. The publications are indexed according to subject areas or hotspots: Wildlife; Biodiversity; Deforestation; Involution of Mixed Farming Systems; Pollution from Industrial Animal Production, Global Environment Effects and Land Degradation.

To obtain a free copy of the CD-Rom, please send an email with your full name and postal address to: lead@fao.org. Please indicate if more than one copy is needed and the intended purpose of the CD-Roms.

Further information:

Dr. Mauricio Rosales
Manager, Virtual Research and Development Centre
Livestock, Environment and Development Initiative (LEAD)
Animal Production and Health Division, FAO,
Rome, Italy.
Email: mauricio.rosales@fao.org
<http://lead.virtualcentre.org>
<http://lead.virtualcentre.org/>

Armidale Animal Breeding Summer Course (Australia)

Materials from the last Armidale Animal Breeding Summer Course are available at http://www-personal.une.edu.au/~jvanderw/aabc_materials2004.htm.

Module A1: Kerrie Mengersen: Practical Bayes for beginners

Module A2: Kerrie Mengersen: Case studies in Bayesian QTL analysis

Module B: Miguel Perez-Enciso: Advanced genetic analysis

Module C: John McEwan: Essential Bioinformatics for Animal Geneticists

Julius van der Werf

Animal Waste Management Workshop North Carolina, USA 16–17 October 2003

The proceedings of this Workshop are available free on CD-Rom from Dr. Leonard S. Bull, Professor of Animal Science and Associate Director, Animal and Poultry Waste Management Center, North Carolina State University, Raleigh, USA.

Email: leonard_bull@ncsu.edu.

REPORTS OF MEETINGS

FAO Intergovernmental Technical Working Group on Animal Genetic Resources

At the end of March 2004, the FAO “Intergovernmental Technical Working Group on Animal Genetic Resources” held its 3rd meeting in Rome. The participants prepared the “State of the World-Report” on animal genetic resources, which is supposed to be available in 2006. The report will be based on more than 150 country reports. Interest was huge. Delegations from more than 134 countries participated in the discussion. Amongst others, it was decided that the report is to contain a part on strategic action priorities, and that a follow-up mechanism is to be created to help countries to act according to their prioritised aims. An

important part of the follow-up is the set-up of “regional networks”. NGOs, civil organisations and the private sector are to be integrated. EAAP was represented.

GLOBAL CONFERENCE ON ANIMAL WELFARE: AN OIE INITIATIVE 23–25 February 2004, Paris

OIE’s rules

The Office International des Epizooties (OIE) was created in 1924 and totalled 166 Members countries. The OIE initially worked for transparency in the world-wide health situation based on incontestable diagnostic methods and scientific knowledge. This mission which is still a priority develops standards for use by its members to protect from disease incursion. This responsibility was extended when the OIE was recognised as a reference organisation by the world trade organisation (WTO) for guaranteeing the sanitary safety of world trade in animals and animals products, whilst avoiding unjustified sanitary barriers. In this field, the OIE’s standard-setting activities are also focused on eliminating hazards existing prior to slaughter of animals or the primary processing of their products that could be a risk for consumers. Due to close relationships between animal health and animal welfare, the OIE should also become the international reference organisation in the field of animal protection and thus the leader organisation for animal welfare. At the request of its member countries, the OIE have been mandated to prepare the basis for an international guide to good practice for animals. Since 2001, ad hoc international expert groups were initiated, have identified a prioritised work plan and have worked on recommendations. The challenge for the OIE is now to maintain this momentum and harness the support of all OIE member countries and stakeholders on the animal welfare. A commitment to consultation with, and communication to, all interested parties is considered to be critical to success. In recognition of the need to approach this new area of activity, the OIE plan to work in a discipline manner, to involve non-governmental organisation having a broad representation and to make use of all available expertise and resources, including those from academia, the

research community, industry and other relevant stakeholders.

Conference program

The first session was focused on the OIE activities, the historical and scientific background, the process for elaboration of recommendations and guidelines, and the prospects for the future. The role of veterinarian was pointed out by J. Edwards (World Veterinary Association, DK), as a challenge to actively participate and contribute to the advancement of animal welfare. The promotion of training on animal welfare and ethology appeared essential to be included in basic veterinary education (illustrated by L. Estol). A talk on trade concerns showed that some segments of the producer community in US (Food Marketing Institute, National Council of Chain Restaurants) have been working actively on animal welfare assurance systems. Guidelines are proposed to supplier organisations and across the retail sector, based on the minimum standards of the industry and on voluntary step. Consumers concerns was illustrated by an Italian speaker suggesting three approaches of consumers towards the animal welfare: anthropocentric (human), biocentric (animal) or pathocentric (health). Information on the full product history and details of the product process are required, as suitable standards to ascertain whether or not food is safe. Differences between consumers over the world appears clearly, according to the approach towards the animal welfare. Consumers can be more *sensible* to the final objective of guarantee safety food associated with animal welfare, rather than be interested to know how the animals are raised. The conferences on the perspectives on animal welfare from developing countries (Asia, Africa, South America) pointed out clearly gaps for the implementation of rules for the prevention of suffering and cruelty to animals, illustrated by slides on overloaded and malnourished animals and rough slaughter conditions. This state is linked to the heritage of cultural and religious traditions (practises or misinterpretation of injections), the lack of mechanisation and the use of animals as being the backbone of agriculture. Though governments have taken initiative to establish animal welfare boards and to enact laws, the main problem is the financial constraint and lack of personnel for the implementation of the rules.

During the general discussion, the main points raised were:

- in the world context, the OIE's standard guidelines need to take into account the economical, religious and social context of the countries. This shows also that the animal welfare is not only a research concerns.
- the guidelines should be considered as directed principles; the main areas actually considered are the transport, the slaughter and control procedures.
- the guidelines are adopted by consensus.
- the guidelines on animal welfare should differ from the WTO's ones.

The topic of the second session was the applied science to animal welfare. In a first talk, D. Fraser (University of British Columbia, Canada) pointed out that people involved in developing animal welfare standards generally agree that the standards should be science-based, but the question is what is involved in incorporating science into animal welfare standards. Within society, three different ethic views can be distinguish: biological functioning (health, production traits), affective states of animals (mental states) or natural living. Although these three views overlap considerably, they involve different areas of emphasis and sometimes lead to different conclusions. Nevertheless, these three views can also be incorporated into the scientific work by scientists. These views have also influenced animal welfare standards. D. Fraser focused that with a wide variety of standards claiming to ensure animal welfare, there is a risk of confusion and disillusion in public. This risk can be avoided by standards striking a defensive balance among the three elements. The following speakers have shown scientific approaches on different topics including environment design, feeding management, handling and transport, pain, fear and distress. In a second step, areas of practical application were developed by each ad hoc experts groups of the OIE, working on the issues relating to slaughter for human consumption, to killing for disease control purposes, to land transportation, to aquaculture, and finally the issues between profit and protection. Each group has described a first draft for guidelines based on scientific knowledge but also including historic, religious and cultural aspects of animal welfare standards. In all case, the role of education was pointed out as a key for the animal

welfare issue and to assess relevant skills and competency of personal.

The last session was devoted to the way forward, with two talks, the first one on the cultural, religious and ethical issues. In a second one, the importance of a number of critical factors and the different roles that can be played by legislation, scientific guidelines and codified standards, has been considered. This includes the role of animal welfare advocacy organisations, of the veterinary profession, of the independent ministerial advisory and national consultative committees, the importance of the animal science, the initial use of voluntary codes and the transition to legislated codes, the pros and cons of public consultation, the outcomes-based versus prescriptive legislation, the importance of stakeholder involvement and «ownership», and the rule and potential of quality insurance schemes.

Thereafter, syndicate groups were built on topics arising from earlier conference discussions. Each group discussed about proposals for the way forward. There were groups on transport (sea, land), on slaughter (for disease control, for human consumption), on the role of veterinarian, on the communication challenges in animal welfare and on the animal research welfare. A report of each syndicate groups was presented at the end of the session.

Concerning the group on Research (36 persons), four points were pointed out:

- research should focus on areas of concerns identified by national, international multidisciplinary publications from databases available from different organisations involved in the animal welfare issue (academic structures or association such as ISAE, EAAP, ...).
- welfare has to be considered as a value issue and need to be validated by objective indicators for assessing welfare and critical points in systems to message.
- animals welfare need to be accepted as multidisciplinary science including basic and applied research.

As a mandated expert of the EAAP, I mentioned the implication of the EAAP on the welfare concerns, the activity of its Commission on “Management and Health” and the available database issued from the

EAAP meetings promoting a science-based approach to animal welfare particularly oriented to animals in agriculture.

The review for all groups pointed out the following items:

- the OIE’s initiative need to be carried out in collaboration with all the stakeholders (NGO, academic or professional organisations) involved in the animal welfare concerns and through their participation to expert groups and databases.
- Training and education need to be widespread
- the OIE’s role is recognised as leader for the implementation of guidelines, controls and responsibility levels on welfare concerns in the WTO context,
- the Animal welfare is not only a research question, but also needs a holistic approach.

Conclusions

The way forward for the OIE concerns the goals:

- give more visibility and explain their strategy
- enhance their leadership and harness resources
- include the stakeholder role and their contribution
- develop links with international organisations
- support for science-based approach.

Comments about the role of the EAAP with regards to the OIE’s initiative on welfare topic

The EAAP has to be included in the initiative of the OIE. Different ways could be suggested, for instance the participation of an EAAP representative in one of ad hoc expert groups and the diffusion of the databases from the EAAP meetings.

Dr. Marie-Christine Meunier-Salaün

INRA UMRVP/EAAP

salaun@st-gilles.rennes.inra.fr

Genetic diversity evaluation and conservation strategy in pigs

From a paper presented at the 29th International Conference on Animal Genetics (ICAG), 11–16 September 2004 in Tokyo, Japan by Dr. Louis Ollivier, INRA, Jouy-en-Josas, France. Email: louis.ollivier@free.fr.

Conservation of plant and animal variation is necessary to meet future agricultural challenges as well as to preserve the rich cultural heritage of the various regions of the world. A careful evaluation of each species genetic diversity is therefore required before setting the most appropriate conservation strategy. The data collected on a sample of 68 European breeds or lines of domestic pigs are used here as an example. The investigation (PigBioDiv1) was designed along FAO recommendations. The genetic markers chosen, microsatellites (50 loci) and AFLP (148 loci), allowed a fairly precise evaluation of the European pig genetic diversity, which could be used for defining conservation priorities. A new study (PigBioDiv2) is also under way to extend the work to Asian pig breeds.

When diversity is evaluated on the basis of genetic markers, use can be made of pair-wise genetic distances between breeds in order to derive individual breed contributions to diversity. The European data showed that more than half of the total European between-breed microsatellite diversity could be assigned to 29 endangered local breeds, while the average internal diversity of the latter was about 3% below the overall mean. AFLP diversity, though markedly below microsatellites, showed very similar breakdown patterns.

Several methodological issues arise in the analysis and interpretation of genetic marker information. The central question is to ascertain the kind of diversity actually measured, which depends on the concordance between molecular and quantitative trait diversity. Another important question is how the between-breed and the within-breed components of diversity should be combined in an “aggregate” diversity. The need to take into account the risk of extinction, or degree of endangerment, of the existing breeds is another difficulty in establishing conservation strategies. Economic, demographic and cultural aspects should also be taken into consideration. Combining genetic and non-genetic data is the challenging goal of any conservation policy.

BOOK REVIEWS

Don't worry, it's safe to eat: the true story of GM food, BSE and Foot and Mouth. Andrew Rowell. London: Earthscan Publications, 2003, 268pp. £16.99

Following a series of food scares in the UK in the 1980s and 1990s, the procedures for reaching

decisions on food safety and communicating these with the public have been the subject of extensive debate. The contextual background for this book is the current political, scientific and economic factors involved in decisions related to the production and safety of Genetically Modified (GM) foods. The author uses a ‘docusoap’ format to intertwine the opinions of critics, the heartfelt feelings of the families of vCJD victims, and a supposedly factual account of these earlier events to produce “the true story”. A basic contention of the book is that, despite the various inquiries and reviews, not much has changed. The solution, it is suggested, lies in radical changes to food production and marketing systems and the removal of corporate and political influences on science so that ‘public interest science’ can be rebuilt.

The experiences and opinions of selected individuals provide the background to discussions of the BSE crises, the FMD epidemic, the treatment of Dr. Arpad Pusztai when he released the results of his experiments on GM potatoes, the creation of the Food Standards Agency, the exchanges between regulatory bodies and governments on the safety of GM foods. ‘Science for sale’ develops an emerging theme that science has become too focussed on wealth creation and business interests are too fully represented in research decision making. Finally, the author provides his prospectus for ‘a path towards safe food and public interest science’. The recipe for food production is based on concepts such as an expansion of local markets and organic production, restriction of imports, severe constraints on the role of supermarkets in selling foodstuffs such as fruit, vegetables and meat. Rebuilding public science would ensure that public science was more independent of commercial interests with corporate funding capped at 10%.

The concept of a book to trace the development of scientific and administrative decision making against the background of the events of the last 15 years was a useful one. It could have built on the factual evidence presented to the BSE and FMD inquiries and incorporated any subsequent scientific evidence as appropriate. Instead, the book largely dismisses the earlier reviews and rewrites the story from a polarised viewpoint so much so that the claim to being “the true story” is risible. Without a wider

range of scientific views it can, at best, be only half the story. The style of writing, whereby facts are interspersed with opinions and tittle-tattle tends to give the text more credibility than it merits. The reader is given no guidance on whether statements are merely opinion or are based on factual evidence and hence could be seriously misled. This does a disservice to those such as Dr. Stephen Dealler whose views on BSE were prescient as against those of others whose predictions proved unfounded. A disturbing impression from the book is that if the scientific evidence does not support popular perception, then something must be wrong with the science. Hence, the Phillips Inquiry can be dismissed and the book calls for 'honest science' ostensibly to overcome this difficulty. Equally, the book indulges in unjustified bouts of 'shooting the messenger' when it does not like the message. In this vein, Sir John Krebs is criticised for his pronouncements on organic food and for proposing the badger culling trial, whereas both were, in my view, manifestations of his wish to ensure that policy was based on sound scientific evidence.

The suggestion that Government science is increasingly focussed on economic objectives is simply not true, most particularly in the agricultural and food areas where food safety, animal health and environmental sustainability are now the key priorities. As to the main theme that 'nothing has changed', I believe few who have worked in Government science could subscribe to this view.

Despite these criticisms, many will find the repetitive narrative interesting and believe they are getting closer to an inside story they feel must exist. Those who wish to see danger and conspiracy lurking at every turn will find this book music to their ears; those who wish to see sound science used constructively to support the public interest may feel irritated and saddened, as I did.

Dr. David Shannon
Former Chief Scientist,
Department of Environment, Food (Defra), UK.
david.shannon1@ntlworld.com

Note: This review was first published in 'Science and Public Affairs', the magazine published by the British Association for the Advancement of Science.
www.the-ba.net.

Sheep and goat housing and technical developments in sheep breeding, management and production in the Nordic countries. (2003). Ed. Ólafur Dýrmundsson. Proc. NJF Seminar, Iceland, June 2003. Published by Farmers Association of Iceland. June 2003. SB. 139 pages. ISBN 9979-885-01-7.

The book contains the contributions presented at a joint seminar of two Nordic organizations, held at Reykjavik. There were 30 papers (24 in English), representing Denmark (D), Finland (F), Faeroe Islands (FI), Greenland (G), Iceland (I), Norway (N) and Sweden (S), being divided into seven themes.

Housing and management. Sheep production in Iceland has changed greatly since the turn of the 20th century, towards indoor feeding 7 months/year and more expensive houses. Ca. 70% of the harvested roughage is conserved as bale silage. A special round bale feeder is produced, saving human work and reducing feed wastage. In D, sheep are housed from December until April and new housing systems have been developed. In F, a shelter is necessary during 200–250 days. In N, an experiment showed that dairy goats can be kept in cold houses during winter. Another study was on herd factors with effects on fertility and lamb performance. A third study showed it acceptable to increase the number of sheep/water nipple to 30.

Floors and bedding. A paper from N concerns possibilities of organic farming, and another one shredded cardboard and newsprint as floor litter, replacing straw. In S, four different bedding materials in deep litter systems were compared. In I, a trial aimed at reducing the housing cost by using an uninsulated shed and straw as bedding material.

Fencing. A paper from I concerns the use of electric fences, since they are much cheaper than other types of fences. A paper from N discusses the development and requirements of fencing.

Sheep and goat production. In D, most sheep flocks are small, only a few big production flocks, mainly for meat. There are 30 sheep and 7 goat breeds. In F, sheep numbers decreased sharply in the 1950s. On FI, maintenance of sheep in winters has been facilitated a.o. by improved transport possibilities to pastures and additional feeding. In G, sheep husbandry is important in the southwestern part, being

based mainly on hay and silage. In I, the number of winterfed sheep has halved to 474 000 since 1978. Still it gives nearly 20% of agricultural income. There has been a trend towards extending the slaughter season in September–October to July–December. Wool and skins account for less than 10% of the total income from sheep. Progeny testing of rams is expanding. In N, the number of sheep has been stable (ca. 1.1 mill.) in the last 15 years, in fewer and larger flocks. Lamb meat has received an increasing favour. Wool production has continued on a stable level. Sheep production is largely based on use of mountain pastures. In S, the number of ewes is less than 1/5 of that in N. The average flock size has increased. There are 16 breeds. The main part of sheep production is directed to production of fresh lamb meat throughout the year, with lambings at different times of the year. The percentages of recorded ewes were: I 50, N 30, F 17, S 11, D 10.

Recent developments in sheep breeding. In N, half of the recorded ewes belong to ram circles, for testing rams for breeding. The main breeding goal for over 30 years has been a sheep that can make efficient use of the natural resources to produce meat and wool. The methods include progeny testing of 2200 rams in ram circles. In I, the breeding work has for many decades rested on individual recording, AI, and assessment of live sheep. In F, the use of ultrasonic scanning (US) has made it possible to improve growth and carcass traits in selection programmes. A study showed that the heritabilities of US-measurements of muscle and fat depths and lamb weight at scanning were 0.39–0.46 and that of live EUROP conformation 0.27. Genetic correlations of scanning weight to the other measures were high. All the four measurements were moderate predictors of carcass lean traits. One paper concerned genetic parameters for wool traits in Finnsheep lambs. Finnsheep wool has many valuable features and different colour types. In a EU-project, the heritability estimates for three measured wool traits were high (0.43–0.62) and for four assessed ones moderate (0.23–0.38). AI is used mainly in I (25 000 ewes) and N (30 000 ewes, with a NR-rate of 70%). BLUP-breeding values are calculated at least in F, N and I. US-evaluation of lambs is applied in I (10 000 ram and 40 000 ewe lambs) and F.

Grazing, feeding and lamb mortality. In G, a study was made on indicator plants as a tool for grazing

management, because of environmental problems caused by overgrazing of sheep pastures. Several botanical indicators seemed suitable for grazing control. A study in S showed that the time of harvest has a profound effect on the intake of the lambs. Growth rates on different silage qualities were: early 152 g, middle 124 g, late 76 g/day. A study in N monitored lamb mortality in a certain mountain range in 2001.

Quality and origin of lamb. A study in FI showed that it is possible for sheep farmers to change the fatty acid composition of lamb. A study in N indicated that the pasture before slaughter can influence meat quality and that such differences can be used for marketing Norwegian lamb meat. Another study in N was on marking of origin of Lofot lambs.

Prof. Kalle Maijala,
Professor Emeritus,
Agricultural Research Centre, Finland

Farm Animal Genetic Resources. (2004). G. Simm, B. Villanueva, K. D. Sinclair and S. Townsend (Eds). BSAS Publication No. 30. Published by Nottingham University Press, Nottingham NG11 0AX. ISBN 1-897676-15-8. SB. 345 pp. £35.00.

This book contains papers presented at a conference organised by the British Society of Animal Science in conjunction with the Department of Environment Food and Rural Affairs, and two NGOs-Rare Breeds Survival Trust and Sheep Trust. It is a prime example of co-operation between governmental agencies and NGOs. The immediate motivation for the conference was the threat to localised minority breeds which had been posed by the Foot-and-Mouth Disease outbreak in UK in 2001, but it also was stimulated by advances in scientific knowledge which might assist conservation, and by active international programmes typified by the State of the World Animal Genetic Resources (SoWANGR) project.

The papers are presented in four sections—policy issues, the genetic basis for conservation, reproductive techniques and case studies of conservation in action.

The international flavour of policy issues is established in the opening chapter, which is a global view of conservation of farm animal genetic resources

(FAnGR), and which sets in motion a strong theme of breed adaptation that runs through much of the book. Exploration of genotype×environment interactions reveals the value of local adaptation of native breeds, and its significance for biodiversity and sustainable farming. This has particular resonance not only in the developing world, but also it has increasing application in Europe and other developed regions where a shift in agricultural policy is moving the emphasis of livestock breeding and production towards environmentally sensitive and compatible criteria. In some cases, a genotype×environment interaction is well established, as illustrated by the case study of Iberian pigs and the production of specialty cured ham.

The use of new technology to assist conservation dovetails neatly with the Iberian pig case study. For example, DNA analyses can be used not only to verify parentage, and therefore to detect the presence of introgression, but also for the authentication of breed products as part of a quality assurance procedure. DNA analyses also were used to measure genetic diversity in the European pig population, and showed the major contribution of local breeds to marginal diversity.

The main emphasis on new technology was focused in the section 'Reproductive techniques to support conservation', where chapters move from artificial insemination (first generation), to in vivo embryo transfer (second generation), in vitro embryo transfer (third generation) to cloning, nuclear transfer and transgenesis (fourth generation). The successful application of nuclear transfer technology to assist conservation is described most vividly in relation to Enderby Island cattle in New Zealand, where five cloned Enderby heifers were derived from the nuclear DNA of the last surviving cow.

In the section on 'Quantitative and molecular genetic basis for conservation', the net is cast wide, and includes a chapter on experience from the sophisticated methodology of conservation of plant genetic resources. Conservation of animal genetic resources has not been so advanced, and historically there has been an assumption that endangered breeds have no relevance in commercial systems of production. This now is changing, but it is only in the last decade in UK that rare breeds have begun to enjoy wider recognition, and their value has been appreciated. It is a paradox that the success of the national NGO for rare breeds, Rare Breeds Survival Trust,

allowed government to claim for many years that there was no need for it to intervene, and this reinforced the marginalisation of native animal genetic resources.

These contradictions are evident within the book. One chapter effectively dismisses the relevance of native minority breeds in the livestock industry by arguing that they only are an important part of our landscape and culture, and that we retain diversity in museums as part of our history. On the other hand, another chapter describes a programme which reconciles conservation and commercial objectives, and permits endangered breeds to express their productive potential.

There are other mixed messages. The global value of local breeds is highlighted, yet the rate of extinction is increasing. There is increasing use of rare and local breeds, but there remains the persistent notion that they are 'museum pieces'. However, despite these interesting variations of opinion, the overall theme of the book is largely consistent. It serves to dispel many of old myths, and moves forward the philosophy and methodology of the conservation of FAnGR on several fronts. It leaves a clear message that native minority breeds have much to offer the livestock industry.

Lawrence Alderson
Countrywide Livestock
Harnage
Shrewsbury
Shropshire SY5 6EJ, UK
alderson@ccltd.demon.co.uk

Working animals in agriculture and transport: A collection of some current research and development observations. 2003. Eds. R.A. Pearson, P. Lhoste, M. Saastamoinen and W. Martin-Rosset. EAAP Technical Series No. 6. Wageningen Academic Publishers, The Netherlands. 208 pp. ISBN 9076998256 (Softcover).

This book presents recent research observations on the management and use of working animals in tropical agricultural systems. It is compiled of 16 papers, some of which were presented at a special session within the scope of the Horse Commission at the 53rd European Association of Animal Production (EAAP) held 1–4 September 2002 in Cairo, Egypt. The information contained in the papers covers a wide spectrum, including: studies in Africa on the use of cows,

donkeys and oxen; use of equines in central-southern Italy; use of buffaloes in Vietnam; and past and present contributions of camels for work and transport in Africa, Asia and the Pacific, the Middle East and North America. A variety of technical issues on the nutrition, feeding, management, reproduction and health of working animals, and the design and use of different animal-drawn implements and harness systems are discussed. The papers are presented in a scientific format and include a good balance of drawings and figures to illustrate key points. Most papers include a brief review of the literature on the topic or issue being covered. A few give quite detailed reviews, along with a comprehensive listing of references.

Overall, the book provides an interesting collection of papers addressing a variety of socioeconomic, scientific, institutional and developmental issues which influence the use of animals for work in different parts of the world. The type of information given ranges from general reviews on farming systems, contribution of draught animals to crop production and transport, and types of animal-drawn equipment to detailed measurements of scientific parameters, such as energy expenditure, feed intake and various physiological indices. Those readers familiar with the literature will note that in some cases, the information presented is not new per se, but rather updates or reinforces what is already known about a particular topic or region, for example use of animal traction in West Africa (see Starkey and Faye, 1990). Five papers in the book focus on the use of donkeys in Africa and provide a substantial amount of information on management, nutrition, reproduction and health. The book contains several papers that discuss topics concerning physical factors influencing draught and work output, methods of tillage and implement and harness designs. While such information helps to fill “gaps” for some geographical regions, the papers tend to fall short of convincing the reader that farmers using draught animals will actually apply the technical principles or adopt the innovations described. It is perhaps worthwhile to point out here that the number of papers in the literature which discuss the engineering aspects of draught, provide drawings that depict “angle of pull” or show designs for “new or improved” harnesses and implements is in the hundreds. Despite the potential benefits of these so-called improvements, adoption by farmers has not been widespread (Starkey et al., 1990).

The authors state that the book is a “must for any scientist, student or extension worker in rural or urban areas where animal power is found”. Unfortunately, the book’s cost (40 Euros) may put it out of reach for much of the latter part of this target group, especially for those individuals living in developing countries. At present, only the book’s table of contents is available on the Web. If the full papers were accessible online (for example as exists for the proceedings of past ATNESA workshops (ATNESA, 2004), this would greatly increase the potential “user” audience, and thus better promote the dissemination of the information contained in the book.

References

ATNESA, 2004. (<http://www.atnesa.org/atnesaworkshops.htm>). Animal Traction Network for Eastern and Southern Africa.

Starkey, P., Faye, A. (Eds), 1990. Animal traction for agricultural development. Proceedings of the Third Workshop of the West Africa Animal Traction Network, 7–12 July 1988, Saly, Senegal. Technical Centre for Agricultural and Rural Cooperation. Ede-Wageningen, The Netherlands.

Starkey, P.H., Teklu, S., Goe, M.R., 1990. Animal Traction: An Annotated Bibliographic Database. International Livestock Centre for Africa, Addis Ababa, Ethiopia.

Dr. Michael R. Goe
Animal Scientist/Disaster Risk Management
Swiss Federal Institute of Technology,
Zurich, Switzerland
Email: michael.goe@inw.agrl.ethz.ch

Protein feed for animal production with special reference to Central and Eastern Europe. 2001. Eds: C. Février, A. Aumaitre, F. Habe, T Vares and M. Zjalic. EAAP Technical Publication No. 1. ISBN 9076998035. 184 pp. Euro35. US\$39

This book summarizes the proceedings of a workshop held in Rennes, France, late in June 2000. It was published later in 2001.

In its 169 pages, there are 22 separate papers and the book is divided into four sections, of which the first two (Country Reports and Protein Requirements in Europe) contain overview papers and the latter two

(Forages and Sources of Protein and Protein Balance Availability and Digestibility) are made up with a range of research reports. The book begins with a summary that outlines how the workshop reviewed the supply situation for protein feeds and discussed research priorities and extension service needs, especially for small farmers. The summary also mentions how a 'Round Table' discussion at the workshop adopted recommendations for future actions at national and international levels and these are listed within the summary section. Not surprisingly, the participants of the Workshop called for an increase in public and private funding of research in their areas of interest, but perhaps more relevantly, they also identify the need for co-operation within countries amongst technologists, support industry, extension specialists and farmers in the different regions of Europe and also for more co-operation between EU and CEEC research institutions to co-ordinate activities and focus on relevant problems. What the summary fails to do, clearly, is to identify those problem issues for which technical solutions exist, but which require application of existing knowledge to be overcome and, separately, those technical issues for which new solutions need to be found and which, therefore, justify research. As is pointed out in various parts of the book, Europe is barely more than 30% self-sufficient in protein feeds for livestock so it is not unreasonable to see that research on protein feeds to achieve greater self-sufficiency takes a reasonable priority in the field of animal nutrition.

The five papers reporting the situation in Slovenia, Hungary, Croatia, The Czech Republic and Romania, give interesting outlines of livestock agriculture in these countries and in the changes that have happened in the first 10 years since the various political adjustments took place. Although change is happening at different rates in different places, the impression one gets is that the downturns in livestock numbers and the disorientation of production systems that occurred during the 1990s has, in general, 'bottomed-out' and that there is some optimism for a more stable approach to growth. Whilst demand for protein sources in the EU is expected to fall somewhat over the next few years, demands in the Central and Eastern European countries is expected to rise. At the same time, the need to develop agricultural

production systems that accommodate heightened expectations of environmental control are highlighted.

It is interesting that almost nowhere in the book is there any discussion of genetic modifications to crops as a means to overcome protein supply problems. Indeed, the only real mention of GM is to say that the Republic of Croatia sees opportunities for the production of non-GMO species for sale on the international market. If the subject were to be reviewed again in 100 years' time, one wonders if the same comments would apply.

France and French scientists clearly make a significant contribution, both to production of protein feeds in Europe (France produces almost 40% of the total) and to understanding of the protein supply situation; three of the four papers in the book dealing with protein requirements in Europe are by French authors. The paper on Economic Aspects of Production and Use of Animal Feeds in Relation to World Markets is a particularly excellent summary of the situation.

The 13 papers in the Workshop Proceedings, in the form of scientific reports, take up almost two-thirds of the volume but seem to add little to the overall value of this book. No doubt there is some technical information that will strike a chord with a small number of specialists but the real value of this publication lies in the first two Overview sections and in the sheer fact that scientists from the existing European Union countries and from the Central and Eastern European countries had got together to discuss problems of common interest.

The technical emphasis in the book is heavily towards the pig sector which, naturally, reflects the interests and enthusiasms of some of the senior participants. The political context of the Workshop has also now moved on substantially. At the time of the Workshop, the Agenda 2000 proposals were paramount. We now have a much more thorough understanding of the implications of CAP reform and many of the CEEC countries involved in the Workshop will have become members of the EU by the time this review is published. It is inevitable that a publication of this kind will date quickly but the EAAP, with INRA and FAO, who stimulated this Workshop, should be congratulated on a useful initiative. As a report, a punctuation mark, in the clarification of an issue of particular importance to the growing European community, this record of the meeting in 2000 will be a

useful reference mark. It would be nice to think that, in a few years' time, another workshop might be held to look back on the situation as it stood in the year 2000 and to see that some key issues have been resolved and that the scientific community involved has worked effectively together.

Professor John D. Oldham,
Scottish Agricultural Colleges,
Edinburgh, Scotland.
e-mail: e.mccormack@ed.sac.ac.uk

Laboratory production of cattle embryos, 2nd Edition. (2003). Ian Gordon. CABI Publishing, Wallingford, Oxon, OX10 8DE, UK. HB. ISBN 0-85199-666-3. 548 pp. £125 (US\$199)

This book is the second edition of the extensive review of all the technology involved in the production of *in vitro* bovine embryos. It is no longer common to see such a big book (548 pp.) written by a single individual. However, Professor Gordon has been so much involved himself during his entire career in the ruminants' reproductive biology that it is no surprise that he has renewed his first edition that was published 9 years earlier. Similarly, it is no surprise to see how much detail is in this book with accurate descriptions of almost all the single steps or factors to be dealt with in this technology. The book is divided into 10 chapters with four Appendices and the outline follows logically the physiological steps which must be monitored or controlled to achieve the production of *in vitro* embryos. As indicated by the title, the vast majority of the facts and discussion refer to cattle with some references to zebu cattle together with useful comparative analyses with buffaloes, horses and pigs.

The first chapter gives a comprehensive review of the developments of the technology during the last decades with special reference to the pioneers of the Cambridge school and also the Americans (Brackett, Foote, USA), French (Thibault INRA), Germans (Hahn, Hanover) and other well-known scientists. The next eight chapters describe the physiology and the technology involved in the consecutive phases of the production, from the bovine oestrus cycle, the recovery of oocytes to the establishment of pregnancy including sperm capacitation, culture and preservation of embryos. What strikes the reader in studying this

book is the correct association of the basic scientific knowledge and the rationale for every action to take place in the process of producing such embryos. The last chapter entitled "embryos and oocytes in research and commerce" is the one to which most additional information appears in this new edition. In this chapter, in particular that the recent knowledge on sperm sexing, cloning and transgenesis is described.

The three first Appendices report protocols for the process of producing embryos or for preparing culture media or else for cryopreservation. These also can be of great help to personnel involved in this technology.

This book is remarkably illustrated with more than 132 tables and approximately 100 figures. The latter are clear, well designed and both tables and figures are not only very informative but also well put in perspective. Among those tables, there are a few black and white photographs that are also most welcome.

The literature assembled in Appendix 4 is amazing. It comprises more than 140 pages (3360 references). Almost all references are later than 1994 (the date of the first edition). However, two comments may here be made on this section. First, all are in English, surely for obvious reasons; but this underlines one major problem of modern science that excludes all reports that are made nationally in the national language, but which may be of great interest particularly related to field observations and trials. When looking at the world distribution of such a technology, one knows that much is happening also in countries like non-English speaking European countries as well as in South America like in Brazil or Asia such as Korea and Japan. This is a major limitation when a manuscript originates from only one author with mastery of one language. Another interesting comment is that the vast majority of these citations (more than 90%) originate from three scientific journals only: *Biology of Reproduction*, *Theriogenology* and *Journal of Reproduction* plus from the proceedings of two major scientific societies dedicated to this technology, namely the International Embryo Transfer Society and the European Embryo Transfer Association. This of course may lead to some kind of "in breeding" in thoughts and tracks of innovation.

One point might have been perhaps treated in a more satisfactory manner and this is the embryo–pathogen interaction that is so critical for the sake of the industry. After one-half page only (p 19), dealing

with pathogen-free IVP embryos, it is only at the end of the book in chapter 10.3.1. that this point comes up again. Great care should always be taken not to associate any pathogen with the embryos and not only in the situation of international movements. If the practitioner reading this book does not go up to the right end of this text, he might hardly hear of this important problem that is not only to always carry in mind but also put in practice all along the process.

In conclusion, this book has reviewed the wide scope of in vitro-derived embryo production in cattle essentially with pertinent descriptions, comments and appreciated relationships between science and technology, all this being very classical. The author states in his foreword that he wished to write such a book for technical and scientific personnel engaged in this type of production of live individuals at the stage of embryos. This aim has certainly been achieved but the richness is such that it is certain that it will also be most useful to all professors, scientists, students who wish to penetrate the reality of such processes. I even would advice other segments of the society interested in this topic such as sociologists, philosophers involved in ethical issues for example, etc., to read this book and examine precisely numbers from tables, figures, schemes or photographs so as to better understand what all this technology is about. I am sure this book, again for this second edition, will be a great success and the author should certainly be commended to have made this effort.

Professor Michel Thibier
Directeur Général de l'Enseignement et de la Recherche
Ministère de l'Agriculture, de l'Alimentation, de la Pêche et des Affaires Rurales
Paris, France.
e-mail: michel.thibier@agriculture.gouv.fr

Manure Management: Treatment Strategies for Sustainable Agriculture, 2nd Ed. Eds: C. H. Burton and C. Turner. Silsoe Research Institute, Wrest Park, Silsoe, Bedford, UK. ISBN 0-9531282-6-1. 451 pp.

This book presents a very readable, and well-organized treatment of the subject of manure management from primarily an EU perspective, and with an important

focus on the interactions between concentrated animal production, manure production and environmental consequences of various treatment or management schemes, as they relate to EU conditions and the various areas and countries within the EU. While there is cursory mention of manure management in areas outside the EU, the book should not be considered a source of information on the approaches taken in other areas around the world unless the techniques are those used in the EU as well.

This reviewer was especially impressed with the care that went into the selection of the figures and data tables presented. These are well done, illustrative, and not overbearing, and are highly supportive of the text in making key points.

The level of coverage of each of the various treatment processes and systems is adequate to provide the reader with the concepts, benefits and liabilities on a comparative basis, which is essential in decision-making. This is an especially valuable contribution of the book. The treatments described are those that are in current use or those which have been used on an historical basis. If there is a shortcoming in the book it is that it does not provide a vision into the future with respect to technologies or processes on the horizon that may enable manure management to be more efficient and environmentally as well as economically sound. The same can be said for value-added products from manure with the exception of biogas. There is not adequate coverage of the important topic of by-products of commercial and economic value based on manure.

While biological processes are covered in the sections on anaerobic and aerobic treatment and the excellent section presenting Case Studies, there is inadequate attention to the potential role of added biologicals as elements in total manure management. There is significant effort being made in that area, and while the history of these approaches has not always been successful, it should be included.

Overall, this is an excellent book, well written and coordinated, especially so considering the large number of contributors, and should serve as a good text for the student of manure management within the EU. The chapters are well developed, and it is an easy book to read and understand. For those outside the EU, the value is more as a reference text, since technologies unique to other areas and not the EU are not given equal attention.

Dr. Leonard S. Bull,
*Professor of Animal Science and Associate Director,
 Animal and Poultry Waste Management Center,
 North Carolina State University, Raleigh, USA.
 Email: leonard_bull@ncsu.edu*

**TRAINING COURSES
 CIHEAM/IAMZ COURSES,
 MEDITERRANEAN**

The following courses are offered by CIHEAM and IAMZ. Information: Instituto Agronómico Mediterraneo de Zaragoza, Apartado 202-50080 Zaragoza, Spain. Tel.: +34-976-716000; fax: +34-976-716001. E-mail: iamz@iamz.ciheam.org. Web: <http://www.iamz.ciheam.org>.

Advanced Seminar

Implementation of control and eradication programmes of animal diseases will be held from 13 to 17 September 2004 in Zaragoza, Spain.

Animal Production

Traceability of meat products: systems and techniques will be held from 13 to 17 December 2004 in Zaragoza, Spain.

Valorization of sheep and goat dairy products in the Mediterranean. Present Techniques and market perspectives will be held from 7 to 18 February 2005 in Pamplona.

Use of molecular techniques in animal breeding will be held from 4 to 8 April 2005 in Léon, Spain.

Animal production and environmental management will be held from 2 to 6 May 2005 in Fonte Boa.

Environment

Integrated planning for rural development and environmental management will be held from 4 October 2004 to 10 June 2005 in Zaragoza, Spain.

The economics of natural resources and the environment will be held from 24 January to 45 February 2005.

Marketing

The World Trade Organization and its impact on international agro-food trade will be held from 18 to 22 October 2004 in Zaragoza, Spain.

Quality assurance in agro-food marketing: normatives, systems and business implications will be held from 7 to 11 March 2005 in Zaragoza, Spain.

Traceability and food labelling: meeting food safety and market requirements will be held from 14 to 18 March 2005 in Zaragoza, Spain.

Wageningen Business School, Wageningen, The Netherlands

Agricultural Trade, the World Trade Organization and the Doha Round. An international postgraduate course will be held at Wageningen University and Research Centre from 24 to 28 October 2004. Course leader: Prof. Dr. Alison Burrell. Information: International Training Centre PHLO, PO Box 226, 6700 AE Wageningen, The Netherlands. Tel.: +31 317 484093; fax: +31 317 426547. Email: info.phlo@wur.nl. www.phlo.nl.

**BARNEVELD COLLEGE, THE
 NETHERLANDS**

All courses include theory and practical aspects of management and technical operations, with study visits and are suited to beginners and mid-career specialists in production, extension and management. Information: Department of International Studies, PO Box 64, 3770 AB Barneveld, The Netherlands. Tel.: +31 342 414881; fax: +31 342 492813. E-mail: io@ipcder.hacom.nl.

Short Courses at Barneveld College

Courses will be held at various dates through 2004 in the following topics:

- Modern Broiler Management
- Modern Hatchery Management
- Modern Breeder Management
- Modern Pig Farm Management

- Feed Formulation
- Practical Feed Production
- Combination Feed Formulation and Practical Feed Production

CALENDAR OF SCIENTIFIC CONFERENCES

AUGUST 2004

38th Congress of the International Society for Applied Ethology—ISAE will be held from 3 to 7 August 2004 in Finland. Information: www.isae2004.org.

15th International Congress on Animal Reproduction (ICAR) will be held in Porto Seguro, Brazil in August 2004. Information: rsr2004@adinet.com.uy.

Symposium on Reproduction in Small Ruminants 2004 will be held as a Satellite Meeting to the XV Congress on Animal Reproduction (ICAR) on 5–6 August 2004 in Colonia del Sacramento, Uruguay. Information: rsr2004@adinet.com.uy.

SEPTEMBER 2004

The 55th EAAP Annual Meeting will be held from 5 to 9 September 2004 in Bled, Slovenia. Information: Official Congress Agency, CRA-Domale, Groblje 3, 1230 Domžale, Slovenia, Phone: +386 41 546 484, Fax: +386 1 7211 701, E-mail: Marija.Klopčič@bfro.uni-lj.si and from www.bfro.uni-lj.si/EAAP2004.

SYMPOSIA AND WORKSHOPS HELD IN ASSOCIATION WITH THE 55TH EAAP ANNUAL MEETING FOLLOW HERE

12th Animal Science Days on the topic of Animal Production according to Ecological, Ethological and Ethical Norms will be held from 2 to 4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Slavko Čepin Slavko.Cepin@bfro.uni-lj.si or Silvester Žgur Silvo.Zgur@bfro.uni-lj.si.

FAO-ERFP-EAAP Workshop on Animal Genetic Resources—AnGR will be held 2–3 September 2004 in Bled in association with the EAAP Annual

Meeting. Information: Dominique Planchenault: Dominique.Planchenault@inapg.inra.fr or Franc Habe: Franc.Habe@bfro.uni-lj.si or Pal Hajas: Pal.Hajas@fao.org.

DAGENE Meeting Molecular Genetic Methods and Research on the Biodiversity of Autochthonous Domestic Animal Breeds will be held 2–4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Laszlo Radnóczy: Dagene@ommi.hu or Drago Kompan: drago.kompan@bfro.uni-lj.si or Pal Hajas: Pal.Hajas@fao.org.

International Symposium on Sustainable Re-cultivation and Land Use on Karst and Mountainous Regions by Use of Animals will be held on 4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Milan Pogačnik: Milan.Pogačnik@vf.uni-lj.si or Drago Kompan: Drago.Kompan@bfro.uni-lj.si.

CEEC-Working Group Workshop on Farm Management and Extension Needs in CEE under the Restrictions of the EU Milk Quota will be held 4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Arunas Svitojus: kvp2@takas.lt or Abele Kuipers: Abele.Kuipers@wur.nl.

Academic Curricula Programmes: A Workshop on Animal Nutrition Teaching will be held 4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: John D. Oldham: j.oldham@ed.sac.ac.uk or Andrej Lavrenčič: Andrej.Lavrencic@bfro.uni-lj.si.

Elsevier/EAAP Workshop: Preparing and Presenting Scientific Papers will be held 4 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Dr. Phil Garnsworthy: Phil.Garnsworthy@nottingham.ac.uk or Marija Klopčič: Marija.Klopčič@bfro.uni-lj.si.

EAAP-ASAS Workshop on Biology of Lactation in Farm Animals will be held on 9–10 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Rupert Bruckmaier: bruckmaier@wzw.tum.de or Peter Dovč: Dovc@bfro.uni-lj.si.

PhD Course. Estimation of Covariance Components and Breeding Values with the VCE 5 Package will be held from 9 to 14 September 2004 in Bled in association with the EAAP Annual Meeting. Information: Prof. Dr. Milena Kovač: Milena@mrcina.bfro.uni-lj.si.

Endangered Horse Breeds and Genetic Distance. A Joint Session of Rare Breeds International (RBI) and the EAAP Horse Commission will be held in association with the EAAP Annual Meeting in Bled. Information: William Martin-Rosset: wrosset@clermont.infra.fr or from Imre Bodó: bodoi@hu.inter.net.

Annual Meeting of SAVE Foundation and the SAVE Network will be held from 2 to 4 September in Bled, Slovenia in collaboration with DAGENE. Information: office@save-foundation.net.

EuroSafe 2004: Science, Ethics and Society will be held from 2 to 4 September 2004 in Belgium. Information: www.kuleuven.ac.be/cabme/.

Decoupling: Implications for UK Farmers. A BSAS Conference will be held 5–9 September 2004 at the Royal Agricultural College, Cirencester, UK. Information: John Alliston. Email: John.Alliston@royagcol.ac.uk.

DAGENE Symposium “Specificity and influence of the autochthonous animal breeds on the quality of the local meat and milk products” will be held in Bled on 4 September 2004. Exhibition and tasting of Slovenian Local Products. Information: drago.kompan@bfro.uni-lj.si.

11th Animal Science Congress of Asian–Australasian Association of Animal Production Societies will be held in Kuala Lumpur, Malaysia from 5 to 9 September 2004. Information: <http://www.agri.upm.edu.my/~msap/AAAP2004.html>.

8th World Rabbit Congress will be held in Puebla City, Mexico from September 7 to 10, 2004. Information: Carlos M. Becerril, Chairman, 8WRC Organizing Committee: www.wrc8.org.mx and by email: wrc8@colpos.mx.

35th Congress of the World Association for the History of Veterinary Medicine and 4th Italian National Congress of History of Veterinary Medicine-CISO-Veterinaria will be held in Torino and Grugliasco, on September 8–11, 2004. Information: Prof. Marco Galloni, Dipartimento di Morfofisiologia Veterinaria, Università di Torino, Tel.: +36 11 6709125. Email: marco.galloni@unito.it.

Agriculture, Poverty and Rural Development in a Globalizing World will be held from 8 to 11 September 2004 in Italy. Information: www.unifi.it/eaee/.

20th Scientific Meeting of the European Embryo Transfer Association will be held in Lyon, France from 10 to 11 September 2004. Information: Jean-Marc Lalloz, Merial, 29, Avenue Tony Garnier, B.P. No. 7123, 69007 Lyon, France. Tel.: +33 472 72 3221; fax: +33 472 72 3205. Email: jean-marc.lalloz@merial.com. Website: <http://www.fbn-dummerstorf.de/fb4/aete/start.htm>.

29th International Conference on Animal Genetics will be held from 11 to 16 September 2004 at Meiji University, Surugadai, Tokyo, Japan.

38th Nottingham Feed Conference will be held at the University of Nottingham, UK from 14 to 16 September 2004. Information: www.nottingham.ac.uk/feedconf.

Agricultural Biotechnology International Conference will be held from 12 to 15 September 2004 in Cologne, Germany. Information: www.abic2004.org.

1st Conference on Equine Behaviour and Welfare: Research into Practice will be held on 15 September 2004 at Writtle College, Chelmsford, Essex, UK. Information: Mark Kennedy at mjk@2writtle.ac.uk.

Pig Health Conferences will be held on 15 September 2004 at Ingliston, Edinburgh, Scotland and Milton Keynes, England. Information: Aberdeen University +44 1224 274230 or www.abdn.ac.uk/bioscience/.

The Challenge Facing Animal Science Education will be held on 16–17 September 2004 at Writtle College, UK. Information: Julian Hill at Writtle College, Essex, UK.

International Conference on Physiological and Technical Aspects of Machine Milking will be held from 21 to 23 September 2004 at Nitra, Slovakia, 2004. Information: Prof. Stefan Mihina, Tel.: +421 37 6546272. Email: mihina@vuzv.sk.

The Alps of the next generation—from forecast to action. A conference will be held at Kranjska Gora, Slovenia from 22 to 25 September 2004. Information: Web: <http://www.forumalpinum.org>.

2nd Regional Fair Balkan Agrobiodiversity and Rural Heritage will be held in Dimitrovgrad, Serbia-Montenegro will be held 24 September 2004. Exhibition of indigenous Balkan breeds. Information: balkanika@ptt.yu.

SAVE Workshop Rare indigenous breeds of the Balkan will be held in Dimitrovgrad, Serbia-Montenegro 24–25 September 2004. Information: office@save-foundation.net.

8th International Symposium on the Biosafety of Genetically Modified Organisms will be held 26–30 September 2004 at Montpellier, France. Information: ISBGMO, Sophie Masliah, INRA-Versailles, Laboratory of Plant Cell and Molecular Biology, Route de Saint Cyr, 78026 Versailles Cedex, Tel.: +33 1 30 83 37 30; fax: +33 1 30 83 37 28; E-mail: isbgmo@versailles.inra.fr. <http://www.inra.fr/gmobiosafety/>.

Rare Breeds International (RBI) Global Congress will be held from 27 September to 1 October 2004 at Bloemfontein. Information from: Dr. Keith Ramsay KeithR@nda.agric.za and website: rbi.org.

OCTOBER 2004

International Conference of the International Society for Animal Hygiene (ISAH) will be held at Saint-Malo, France from 11 to 13 October 2004. Information from Secretariat: Geneviève CLEMENT ISPAIA-

ZOOPOLE développement, BP 7-22440 PLOUFRA-GAN-France. Tel.: +33 2 96 78 61 30; fax: +33 2 96 78 61 31. Email: isah2004@zoopole.asso.fr. Web: www.zoopole.com/ispaia/isah2004.htm.

Meat Quality and Food Safety in Pigs and Poultry will be held 14–15 October 2004 at the University of Krakow, Poland. Information: Piotr Pasciak, Prof. Migdal and Kathrin Poltowicz, Krakow University, Poland.

A World Meeting of Food Communities (TERRA MADRE)—The Slow Food Movement will be held in Turin, Italy from 20 to 23 October 2004. Information: Slow Food, Via della Mendicita Istruita 14, 12042 Bra (Cn), Italy. Tel.: +39 172 419611; fax: +39 172 414 498. Email: p.jona@slowfood.it. Websites: www.slowfood.com, www.terramadre2004.org.

Salone del Gusto, Slow Food International Food and Wine Show will be held in Torino, Italy from 21 to 25 October 2004. Information: s.abbona@slowfood.it. Web: <http://www.slowfood.com>.

7th World Buffalo Congress will be held in Manila, The Philippines from 20 to 23 October 2004. Information by opening the PCC website at www.pcc.da.gov.ph and from Antonio Borghese, General-Secretary of the International Buffalo Federation, Monterorondo, Rome, Italy.

Farm Income Stabilization: What Role should Public Policies Play? 86th Seminar of European Association of Agricultural Economists will be held from 21 to 22 October 2004 in Villa Orlando, Capri, Italy. Information: www.depa.unima.it/eaeseminar.htm.

International Symposium on the Future of the Sheep and Goats Sectors will be held in Zaragoza, Spain from 28 to 30 October 2004 organized by CIHEAM, IAMZ, IDF, FAO, EAAP and ICAR. Information: iamz@iamz.ciheam.org. Website: www.fil-idf.org/sheepgoat2004.

NOVEMBER 2004

5th National Colloquium Un dialogue pour la diversité génétique, will be held in Lyon, France

from 3 to 5 November. Information: BRG@inapg.inra.fr, Web: <http://www.brg.prd.fr>.

5th International Symposium of the Mediterranean Pig will be held in Tarbes, France from 16 to 19 November 2004. Information: Dr. Annick Audiot, INRA, SAD Unité de Recherches SICOMOR, Conservatoire du Patrimoine Biologique Régional de Midi-Pyrénées, Castanet-Tolosan cedex, France. Tel.: +33 5 61 28 50 85; fax: +33 5 61 73 20 77 Website: www.mail2web.com/cgi-bin/redir.asp?lid=0 and [newsite=http://www.patrimoine-biologique.midipyrénées.fr](http://www.patrimoine-biologique.midipyrénées.fr).

7th World Conference of Bioethics will be held 9–12 November 2004 at the University of New South Wales, Sydney, Australia. Information: www.bioethicsworldcongress.com.

APRIL 2005

Assessing Rural Development Policies of the CAP. 87th Seminar of European Association of Agricultural Economists will be held 21–23 April 2005 in Vienna, Austria. Information: www.eaae.org/activities/indexa.htm.

JUNE 2005

56th EAAP Annual Meeting will be held in at the Swedish University of Agricultural Sciences in Uppsala, Sweden from 5 to 8 June 2005. Information: www.conference.slu.se/EAAP2005.

7th International Conference on Pig Reproduction will be held at Rolduc, The Netherlands from 12 to 15 June 2005. Information: Dr. P. Langendijk; email: Pieter.Langendijk@wur.nl. Web: <http://www.zod.wau.nl/icpr2005/>.

XX International Grassland Congress will be held in Dublin, Ireland from 26 June to 1 July 2005. Information: Congress Secretary, Dr. Frank O'Mara, Department of Animal Science, University College Dublin, Belfield, Dublin 4, Ireland. Tel.: +353 1 716 7142; fax: +353 1 716 1103. E-mail: igc2005@ucd.ie. Web site <http://www.igc2005.com>.

AUGUST 2005

2005 FEBS-IUBMB Congress will be held in Budapest, Hungary from 2 to 7 July 2005 with the major topic of Proteins and Peptides. Information: <http://www.febs-iubmb-2005.com>. Prof. Peter Csermely, Chairman of the Organizing Committee. E-mail: organizing.committee@febs-iubmb-2005.com.

OCTOBER 2005

2005 Animal Waste Management Symposium will be held from 5 to 7 October 2005 in Raleigh, NC, USA. Information: Dr. Gerald B. Havenstein, North Carolina State University, Raleigh, NC, USA. Tel.: +1 919 515 5555; fax: +1 919 513 1762. E-mail: Gerald_Havenstein@ncsu.edu. Website: www.cals.ncsu.edu/waste_mgt/.

2005: Other Events

3rd Global Conference by the British Society of Animal Science will be held in Asia in 2005.

5th Asian Buffalo Congress will be held in China. Information: Antonio Borghese, General-Secretary of the International Buffalo Federation, Monterorondo, Rome, Italy.

2006

10th Symposium on Digestive Physiology in Pigs (which is held every 3 years under the auspices of the European Association of Animal Production Commission on Pig Production) will be held in Denmark in May 2006. Information: J.A. Fernández: josea.fernandez@agrsci.dk. Web: www.dpp2006.dk.

Paradigms in Pig Science. A Nottingham University Conference will be held in June 2006. Information: julian.wiseman@nottingham.ac.uk.

8th World Conference of Genetics applied to Animal Production (8WCGALP) will be held from 13 to 18 August 2006 at Belo Horizonte, Brazil.

57th EAAP Annual Meeting will be held in Antalya, Turkey.

2007

58th EAAP Annual Meeting will be held in Ireland.