

# BUSH TELEGRAPH

The House Magazine of the Edinburgh Centre for Rural Research

## Web Watch ...

### ECRR

View the ECRR web site at  
[www.ecrr.org.uk](http://www.ecrr.org.uk)

### Science at SCRI

A revamped website provides an excellent overview of the **Scottish Crop Research Institute's** research and other activities.

[www.scri.sari.ac.uk](http://www.scri.sari.ac.uk)

### Science strategy for Scotland

The **Scottish Science Advisory Committee** is shaping the future of science in Scotland.  
[www.scottishscience.org.uk](http://www.scottishscience.org.uk)

### Sustaining the world's forests

The **Edinburgh Centre for Tropical Forests** draws together a unique blend of research expertise.

[www.nmw.ac.uk/ectf](http://www.nmw.ac.uk/ectf)

### Aberdeen Research Consortium

ECRR's sister organisation in Aberdeen.

[www.aberdeenrescon.ac.uk](http://www.aberdeenrescon.ac.uk)

### Science News

[www.newscientist.com](http://www.newscientist.com)

[www.nature.com](http://www.nature.com)

[www.sciencemag.org](http://www.sciencemag.org)

## Inside ...

### Developments at Bush

A report on Edinburgh University's continuing investment in the Bush Estate.

**Page 8**

### Tropical medicine

Scientists at the **Centre for Tropical Veterinary Medicine** are fighting killer diseases of animals and humans.

**Page 10**



### Harvesting our seas

Lots of cod at **Stirling University's** Machrihanish Marine Farm.

**Page 12**

### Forest Research

A new CEO, scientific reviews, woodland surveys, wood fuel, sitka spruce, genetic resources, visitors & strawberry spiders.

**Page 14**

## And more ...

### Crop science

Excellent science is not enough for researchers at the **Scottish Crop Research Institute**. The public must also know the motivation for their work.

**Page 17**

### News from SAC

Hi-tech communications, DNA sheep tags, sheep scab and a new sustainable environmental management course.

**Page 19**

### Edinburgh Science Triangle

Seven science parks in the Lothians are joining together to market their facilities under the banner "The Edinburgh Science Triangle".

**Page 20**

### Cats – a species of predators?



An exhibition on the very varied *Felidae* species opens at the **National Museums of Scotland** in February 2004.

**Page 22**

**CONTENTS**

	<b>Page</b>
EDITORIAL	1
ROTA OF SOLICITED CONTRIBUTIONS	2
SCIENTIFIC DIRECTOR'S NOTES	3
ECRR EVENTS	5
ECRR ANNUAL LECTURE 2004	6
MEMBERS' REPORTS:	
EDINBURGH UNIVERSITY ESTATES & BUILDINGS OFFICE	8
CENTRE FOR TROPICAL VETERINARY MEDICINE	10
INSTITUTE OF AQUACULTURE STIRLING UNIVERSITY	12
FOREST RESEARCH NORTHERN RESEARCH STATION	14
EDINBURGH UNIVERSITY ESTATES & BUILDINGS OFFICE	8
CENTRE FOR TROPICAL VETERINARY MEDICINE	10
SCOTTISH CROP RESEARCH INSTITUTE	17
SCOTTISH AGRICULTURAL COLLEGE	19
MOREDUN RESEARCH INSTITUTE	20
NATIONAL MUSEUMS OF SCOTLAND	22
FUNDING OPPORTUNITIES	
GENESIS-FARADAY PARTNERSHIP - <i>CASE Studentships</i>	23

## **EDITORIAL**

This edition contains Chris Browitt's first contribution as scientific director of ECRR. We welcome him as the new scientific director although he already knows ECRR very well. We hope he enjoys his time at the scientific tiller.

I would also like to draw attention to the excellent news from the Scottish Crop Research Institute of the appointment of an educational officer during 2003. This role includes encouraging schoolchildren to take a much keener interest in science with a view that they may eventually join us in this exciting industry. This appointment is another encouraging investment in our future and signals a much more proactive approach needed by the scientific community to sell itself to a sceptical population where currently scientists are ranked far too low for their worth.

The new year beckons and with it exciting opportunities along with some difficult challenges. Can I thank everybody who has contributed to the content of the Bush Telegraph in 2003 and wish everyone a very successful 2004.

Your electronic copy of Bush Telegraph is available on the ECRR website at [www.ecrr.org.uk](http://www.ecrr.org.uk)

**Mike Steele**

Editor

**As it's a leap year (!) the deadline for copy for the  
next issue is  
March 1st 2004.**

**All contributions, comments and suggestions can be  
e-mailed to [M.Steele@ed.sac.ac.uk](mailto:M.Steele@ed.sac.ac.uk)**

**with copies to [m.talbot@bioss.ac.uk](mailto:m.talbot@bioss.ac.uk) please.**

## **ROTA OF SOLICITED CONTRIBUTIONS TO BUSH TELEGRAPH**

### **SPRING**

British Geological Survey  
Biomathematics & Statistics Scotland  
University of Edinburgh, School of Biological Sciences  
Royal Society for the Protection of Birds  
SAC  
Edinburgh Centre for Tropical Forests

### **SUMMER**

University of Edinburgh, Institute of Cell, Animal & Population Biology  
Centre for Ecology & Hydrology  
MRC Human Reproductive Sciences Unit  
University of Edinburgh Royal (Dick) School of Veterinary Studies  
Royal Zoological Society of Scotland  
Napier University, School of Life Sciences

### **AUTUMN**

DEFRA Lasswade Veterinary Laboratory  
National Museums of Scotland  
Roslin Institute  
Royal Botanic Garden Edinburgh  
Scottish Natural Heritage  
University Marine Biological Station, Millport  
University of Edinburgh, School of Geosciences

### **WINTER**

University of Stirling, Institute of Aquaculture  
Moredun Research Institute  
Forest Research Northern Research Station  
University of Edinburgh, School of Social & Political Studies  
Scottish Agricultural Science Agency  
Scottish Centre for Animal Welfare Sciences  
Scottish Crop Research Institute

## SCIENTIFIC DIRECTOR'S NOTES



### **Dr Chris Browitt**

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### **INTRODUCTION**

The handover from Ian Aitken has already been announced in his previous notes. It took place, formally, at our Board Meeting on 4 November at the Moredun Research Institute, a most suitable venue offered by Quintin McKellar in recognition of Ian's retirement. Ian has led the ECRR since March 1997 following his previous retirement from the Moredun Directorship. After 6½ years developing and consolidating the science network which is ECRR, he has left us in excellent shape; with active outreach, networking, visibility and external linkages. On behalf of all of us I would like to add my thanks to those expressed by our chairman, Mary Bownes, in presenting, to Ian, a life membership of the National Trust for Scotland at our Winter Reception which followed the Board Meeting. I am particularly grateful for his insight, encyclopaedic knowledge and energy which he brought to the Scientific Director's post, and which made my life as Chairman of the ECRR Executive Committee so easy over the past 2½ years.

Since Peter Wilson brought me in to ECRR as Director of BGS Scotland, in 1995, I have recognised how wide the catchment of rural research really is; far beyond biology and agriculture. This was highlighted during the FMD crisis when we recognised that almost every ECRR member was involved in some way, from understanding the disease and its impact, through protecting stock and animal welfare, to finding safe geological sites for the disposal of carcasses. It was the recognition that we had such a spectrum of capability at our disposal that led to our successful FMD Forum in October 2001.

Since taking early retirement from BGS in February 2003 and strengthening my links with the University's School of Geoscience, I have, in addition to ECRR, been developing my interests in geohazards and natural disaster reduction through the UK national disaster committee and through European and international seismological centres. Involvement in a European Space Agency Global Monitoring programme is bringing me new insights in this area and is seeding ideas on how ECRR might engage more in Earth Observation, including on a global scale.

### **CENTRE FOR MOUNTAIN STUDIES**

At the November Board Meeting, we welcomed, as guest observers, Dr Martin Price, Director of the Centre for Mountain Studies (CMS) in Perth, and his colleague Dr Rhys Evans. Recently established in 2000, and the first of its kind in the UK, CMS is focused on building a centre of excellence on issues relating to sustainable development in mountain regions. Links with the University of the Highlands and Islands provide it with a network of skills and contacts through the UHI Millennium Institute, the wider Highlands community, and partners in academic and research institutions in Scotland and beyond. In recognition of this remit, capabilities and aspirations, which could provide another element of the rural spectrum of ECRR, Martin Price has been invited to join our community. He will be consulting with colleagues in the New Year. In the meantime, for further information he may be contacted at the CMS, Perth College, UHI Millennium Institute; details on [www.cms.uhi.ac.uk](http://www.cms.uhi.ac.uk).

## EVENTS

**Annual Lecture:** The forthcoming ECRR Lecture, supported jointly by the Institute of Biology (Scotland) and the Royal Society of Edinburgh, will be given by Lord Peter Melchett, Policy Director of the Soil Association, and organic farmer in Norfolk. He has been a Labour Government Minister (1974-79), a trustee of the World Wildlife Fund UK and a leading figure in other nature conservation and wildlife NGO's before working for Greenpeace in 1989, where he was Executive Director UK for 11 years. His subject for our Lecture will be "The Future of Food and Farming". It will have a focus on issues concerning production in Western Europe and North America; including overproduction, dumping, public and political concerns, wildlife impacts, quality and diet.

**This year's Lecture promises to be stimulating, perhaps provocative, and certain to engender a lively discussion. The date for your diary is the evening of 20 February 2004, together with an informal meeting over lunch beforehand.**

**Ministerial visit:** The visit of Ross Finnie, Minister for the Environment and Rural Development, to the ECRR Directors' lunch at Heriot Watt University on 1 December 2003, has been rescheduled at the Minister's request. It will now take place, on 5 April 2004, at a venue to be confirmed. The theme will be "Rural Development – Challenges and Opportunities", within which we might include discussion on the implications of CAP reform and on the (by then) newly published SEERAD Research Strategy.

## CHANGE OF NAME FOR ECRR?

For some years, the idea of changing the name of ECRR to better reflect the organisation's current role and membership has been on the agenda without resolution. At the November Board meeting, several options were put forward for consideration. It was felt that the word "Rural" encapsulates the broad theme to which all members can relate and, furthermore, it has become fashionable once again. There are benefits, therefore, in retaining it. Members based outside Edinburgh were canvassed in relation to that city's name remaining, and it was seen to be very acceptable given the historical reason for its position in the title. As a consequence, only one alternative was short-listed: to replace "Centre" with "Consortium" in the "Edinburgh Centre for Rural Research" (or retain "Centre" and the status quo).

The Executive Committee was charged with organising a ballot between "Centre" and "Consortium" and has set itself the target of a 90% response. All Directors have now been asked to vote by e-mail and are urged to do so. Mike Talbot and Chris Browitt will follow-up by telephone, if necessary, to achieve the high turnout required.

Merry Christmas and a Happy New Year.

## ECRR EVENTS 2004

<b>Feb 2</b>	Directors' lunch	Scottish Natural Heritage Anderson Place, Edinburgh Host: Dr Colin Galbraith	12.30
<b>Feb 20</b>	Annual Lecture 2004	The future of food & farming – what role for science? Lord Peter Melchett RSE, George St., Edinburgh	17.00
<b>Mar 1</b>	Directors' lunch	National Museums of Scotland Chambers Street, Edinburgh Host: Dr Mark Shaw	12.30
	Main Board meeting	Venue TBA	14.00
<b>Apr 5</b>	Directors' lunch	Venue TBA	12.30
<b>Apr 29</b>	Executive Committee	SAC, King's Buildings	
<b>May 12</b>	Summer reception	Venue TBA	17.00
<b>Jun 7</b>	Directors' lunch	Venue TBA	12.30
<b>Sep 6</b>	Directors' lunch	Venue TBA	12.30
<b>Oct 4</b>	Directors' lunch Executive Committee	Venue TBA Venue TBA	12.30 -
<b>Nov 3</b>	Directors' lunch Main Board meeting Winter reception	Venue TBA	-
<b>Dec 6</b>	Directors' lunch Executive Committee	Venue TBA	-

# ANNUAL ECRR LECTURE 2004

by  
Lord Peter Melchett  
Policy Director, Soil Association  
on

## The future of food and farming – what role for science?

at the Royal Society of Edinburgh, 22-24 George Street, Edinburgh  
On Friday 20<sup>th</sup> February 2004 at 5.00pm for 5.30pm.

### ABSTRACT

Farming and food production in Western Europe and North America face unprecedented problems. These consist of a combination of: massive over production and dumping on world markets of most commodity crops; continuing rapid losses of jobs in farming, and of farmers; public and political concern about taxpayers subsidies for farmers; dramatic declines in farmland wildlife; belated recognition of the decline in food quality and rapidly increasing concern about the rise of diet related illness, particularly among children. These long-term trends are far more significant than the brief public eruptions such as those over fields of dead and dying birds killed by DDT, salmonella in eggs, public concern over straw burning or the removal of hedges, Mad Cow Disease or Foot and Mouth. However, all of these examples, and more, have served to remind the public that something is seriously wrong with farming.

These problems are not confined to the UK or the EU, but are a feature of farming in developed countries world-wide, and especially in North America, Western Europe and much of Asia, and of the so-called 'green revolution' in developing countries.

All these problems have their origin in the rise of intensive and industrial farming, based on Nitrogen fertilisers and pesticides, and the routine medication of livestock, a process that started in earnest a mere 50 years ago. Most damage was probably caused in the 1960s and 70s, but it has continued relentlessly. The impact on farmland wildlife was recognised about thirty years late, but still well before

any official concern about the negative social and human health impacts. Despite expensive attempts to mitigate the wildlife losses, there has been no significant reversal of the declines suffered over the last 50 years. Excellent science done by a small number of dedicated scientists working with very limited funds eventually provided the evidence not just of the declines, but also the causes. The role played by Government scientists, industry scientists and research councils was, on the whole, a disgrace to science. The shining exception was a Government Chief Scientist prepared to tell politicians things that did not fit with the prevailing industry and scientific orthodoxy.

Does this combination of wildlife losses, job losses, loss of farms, and decline in human health mark the beginning of the end of the agricultural system based on pesticides and artificial fertilisers which has, briefly, dominated agriculture for the last 50 years? What is the alternative?

The forces behind intensive agriculture have yet to see the environmental, human health or social damage of the system as a serious problem. Rather they saw the increased problems of keeping one step ahead of nature with new pesticides as a threat to the system. This came largely from environmental campaigns not connected with farming, but rather aimed at protecting people and wildlife, and ground water, rivers, lakes and coastal seas from damaging, persistent and bioaccumulative poisons. The measures taken to protect the environment and human health restrict the molecules available for new

pesticides – hence the industry drive to achieve what pesticides deliver through genetic engineering. Against this background, the paper will explore the impact that the drive to introduce genetically engineered crops has had on science, in particular the public view of industry and government scientists, on institutions like the Royal Society, and on the role of the Government's Chief Scientist.

### **BIOGRAPHICAL NOTE**

Peter Melchett runs an 890-acre organic farm in Norfolk, in the East of England. The farm has a herd of Red Poll beef cattle, an ancient, native breed. Crops include barley, wheat, peas and grass. The farm is well known for the wildlife conservation work done there over the last 30 years, and for the high level of public access provided for more than 20 years. Peter also works as part-time Policy Director of the Soil Association, the UK's main organic food and farming organisation, and is doing some work as an environmental consultant, mainly with IKEA in the UK.

Peter was a Labour Government Minister from 1974 to 1979, first at the Department of the Environment, then Department of Industry and finally in Northern Ireland, responsible for education, health and social services. He was a trustee of the World Wildlife Fund UK for seven years from 1977, and was President, Chair or Council member of several of the UK's leading nature conservation and wildlife NGOs before working full-time at Greenpeace UK from 1989.

Peter was Chair of Greenpeace UK between 1986 and 1988, a member of the International Board in 1988 and 2001, and Chair of the Board of Greenpeace Japan from 1995 to 2001. He was Executive Director of Greenpeace UK for eleven years from 1989 to 2000.

### **TICKETS**

Please note that admission is by ticket only. Requests for tickets to ECRR Secretary at [m.talbot@bioss.ac.uk](mailto:m.talbot@bioss.ac.uk)

## UNIVERSITY OF EDINBURGH ESTATES & BUILDINGS OFFICE



### Angus Currie

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## DEVELOPMENTS AT BUSH

*[Angus Currie kindly provided this summary of a talk he gave at a meeting of the ECRR Main Board in November 2003 on the University's investment in the infrastructures at Bush: Editor]*

### EASTER BUSH VETERINARY CENTRE

A substantial estate investment programme has been progressing over the past 4 or 5 years.

The Hospital for Small Animals was completed in 1999.

A rolling programme of refurbishment and new build has been almost completed for the Hospital for Large Animals. Most recently the Reception Centre was completed and opened by Princess Royal.

Accommodation for the Centre for Tropical Veterinary Medicine was refurbished officially opened with funding contributions from the Science Research Infrastructure Fund.

A programme to improve and extend teaching and student facilities started in 2001 with the creation of a new study and library space and cafeteria and dining space. This year we have just completed upgrading and extending lecture facilities so that there are now 180 and 130 seat theatres with full AV facilities.

There is ongoing work to prepare a site development masterplan. This will enable us

to plan for future flexibility and possible expansion at the centre, have advance discussions with Mid Lothian planners and give us a sound basis from which to react to future funding opportunities. This is what we are trying to get in place for all our main accommodation clusters.

The University farms are now formally linked to the College of Meds and Vets for management purposes. The farms joint venture with SAC (Langhill / Seafielldmill / Easterhowgate) was wound up last year with the Langhill research dairy herd moved to Dumfries. A University Farm Group has been set up incorporating Easter Bush and Langhill farms as an integrated trading unit within the College of Meds and Vets.

Following the US accreditation exercise teaching facilities are now provided at Langhill and the physical development of the farms will be linked into the Bush Development Plan so it is interpreted into our academic and estate planning.

### BUSH ESTATE

At the Technopole site the partnership with Grosvener Development is now beginning to work well with activity including:

- Phase 2 – Charles Darwin House. Indigo vision have started to move into the recently completed building where they will occupy 2 floors.
- Planning consent has been obtained for Phase 3. This mixed lab and office

building will extend to 3252 sq m. It is hoped that construction can start at the end of 2003 or early 2004.

- Work that includes the creation of restaurant and crèche facilities is planned to start in Bush House early next year with a summer completion date.
- Work has begun on the next phase of site including a road infrastructure link to Pentlands Science Park. The work will take approximately 6 months to complete.

The University is also preparing plans to refurbish the old Distillers building with construction planned to start early 2004.

## CENTRE FOR TROPICAL VETERINARY MEDICINE

### Professor Ian Maudlin

*Centre for Tropical Veterinary Medicine  
University of Edinburgh,  
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### FIGHTING KILLER DISEASES

University of Edinburgh researchers striving to develop treatments for diseases, which kill large numbers of people and animals in Africa, will be helped by the opening of new £1.2m laboratories. The new facilities, opened by the University's Rector Tam Dalyell MP at the Centre for Tropical Veterinary Medicine, Royal (Dick) School of Veterinary Studies, Easter Bush, will enable the scientists to push forward their knowledge of the twin scourges of Sleeping Sickness and East Coast Fever, as well as other diseases.



The Edinburgh researchers are looking for ways to prevent and treat Sleeping Sickness with the most effective and inexpensive drugs. Although the potentially fatal disease - which causes fever, anaemia, joint pains and mental deterioration - is treatable, the drugs are expensive and can in themselves be fatal.

Sleeping sickness, found only in sub-Saharan Africa, affects up to half a million people each year and is caused by a parasite carried by the tsetse fly. Cattle harbour the parasites, and tsetse fly bites transmit the parasite to humans. The University researchers are currently assessing the level of parasite prevalence in cattle and finding the best and most cost-effective level of treatment for affected animals.

The Edinburgh team is also developing an improved vaccine, to replace the current primitive defence methods, against the deadly East Coast Fever, a disease common in cattle in east and central Africa. The disease is caused by a blood parasite transmitted by the Brown Ear Tick. This parasite multiplies in the tick's salivary glands and the infection is introduced into the animal through the tick's saliva. Once inside the animal, the parasites invade the lymphatic system, making it sick and often causing its death. Although local cattle have some resistance to the disease, East Coast Fever is always fatal amongst other more productive breeds which farmers try to introduce to improve their livelihoods.



Professor Ian Maudlin, Director of the Centre for Tropical Veterinary Medicine, said:

“Stockmen can keep local cattle but not the black and white cattle which we breed in this country, and which are better milk-yielders. The present unsatisfactory defence against East Coast Fever is by tick control, primitive vaccination and chemotherapy. Our new laboratories will help our efforts to understand and fight these and other diseases found in tropical countries. By improving animal welfare, we can alleviate poverty and enhance the quality of life for people in these areas.”

## INSTITUTE OF AQUACULTURE

### Professor RH Richards

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## MACHRIHANISH MARINE FARM

*Report by Derek Robertson, Director of External Facilities and Chief Executive MMF Ltd.*

Life at Machrihanish has certainly changed recently with the construction of a large cod hatchery as a joint venture between Stirling University and Marine Farm Technology Ltd. The hatchery will trade as Machrihanish Marine Farms Ltd and is one of the first large-scale cod hatcheries in Europe.

Building of Phase 1 of the Institutes Cod Hatchery started in January 2002 and was completed in August 2002. Phase 1 is the Hatchery building and consists of a large live feeds room, an algal room, a small but well equipped laboratory, a computer room, a very large larval rearing room, an egg incubation room and 4 broodstock rooms which are light and temperature controlled. Separate from these facilities is a plant room housing the chillers, blowers and UV systems. Outside of the hatchery are the boiler room and the water treatment plant. Last but not least is a canteen, which provides eating facilities for the staff of the hatchery.

All incoming water is filtered to 10 micron through a series of belt and drum filters; the water to the live feeds and larvae is then filtered to 1 micron through bag filters. Water temperatures can be manipulated up or down to match the optimum requirement for eggs, larvae and broodstock.

Following commissioning, a trial batch of 25,000 cod juveniles was produced to test out the systems. The quality of this batch has

been exceptional and all of these fish have now been allocated to customers in Shetland and Wester Ross.

Following the successful pilot run the first major commercial production run started in February using 3-year-old light-manipulated broodstock. Egg production from this stock has been enormous and at the time of writing we have in excess of 8 million larvae of various ages in the larvae room. Rotifer production is running at around 1 billion per day supplied from a mix of batch and continuous culture systems. Larvae and rotifers are supplemented with algae paste and live algae produced from our two Continuous Algae Production System (CAPS).

The juveniles are weaned from live feeds from around day 30 and we are currently using Nutreco Gemma diets with very good results.

The target from this current batch is 500,000 juveniles and these will be moved into phase 2 at around 0.5 grams.

Work on Phase 2 started in December 2002 and is expected to be completed by Mid May 2003. Phase 2 consists of nine 6 metre GRP circular tanks and eight 10 metre D-ended tanks housed in a very large polytunnel. A new sea water supply is being installed that will pump up to 1000 cubic meters of seawater per hour. Incoming water is filtered to 100 microns and injected with oxygen through oxygen cones supplemented by oxygen stones controlled by an Oxyguard Commander system.

Juveniles will be pumped to the D-ended tanks from the hatchery and ongrown to around 5 grams before being pumped to the 6 metre tanks for final growth before delivery. The system has been designed with minimal physical handling of the fish in mind and passive grading will take place in the D-ended tanks. Phase 2 has been designed to hold between 300-500,000 depending on customers preferred size. All fish will be vaccinated against *Vibrio* before being delivered by helicopter to a wellboat lying offshore from Machrihanish. From here, codlings will be delivered to their final growout destinations on the West Coast of Scotland; the Northern Isles or even further afield.

Our plan is to produce 3 crops per annum and therefore production is expected to be around 1.2-1.5 million juveniles per annum.

The entire 2003 crop has been pre-sold to Wester Ross Salmon, Lakeland Marine Farm and Johnston Seafarm in Shetland. The latter have recently signed an agreement to purchase 80% of the MMF crop in 2003 as part of their ambitious plans to become the largest producer of cod in the UK, if not the world.

Currently five staff work at the hatchery under the watchful eye of Julian Pajak the MMF manager with another 2 members of

staff being recruited at the time of writing. Derek Robertson and Richard Prickett of Marine Farm, our partner in the project, jointly oversee the whole operation. Through Marine Farm Technology Ltd MMF also have access to the expertise of Elizabeth Sweetman of Ecomarine and Nick Fullerton of Fish Tech on a consultancy basis should any technical problems arise. Overall this team has produced more cod juveniles world-wide than any other group and will help ensure the success of the projects.

## FOREST RESEARCH NORTHERN RESEARCH STATION



### **Martin Abrahams**

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## **QUINQUENNIAL REVIEW**

Last year we reported that stage 1 of the review had been successfully concluded with the 5 year targets for the agency having been fully met. The main challenges identified for FR were to ensure greater involvement by stakeholders (including the devolved administrations) in the setting of research priorities, and to improve methods of technology transfer. The report on stage 2 of the review was delivered to Ministers in October 2002 and accepted in early 2003. The main features are slightly revised aims and objectives for FR and an expanded set of key performance indicators. An executive summary of the stage 2 report can be found on the Forestry Commission website [www.forestry.gov.uk/forestresearch/reviews/](http://www.forestry.gov.uk/forestresearch/reviews/)

## **NEW CHIEF EXECUTIVE**

Professor Jim Lynch was appointed as the new Chief Executive of Forest Research in February 2003 and took up his position at the beginning of July 2003. He will be based at the Alice Holt research station near Farnham, Surrey, but will spend appreciable time in the north.

Professor Lynch graduated in industrial chemistry from Loughborough University of Technology in 1968 and then gained PhD and

DSc degrees from the University of London, which led to a distinguished career in agricultural research at universities and research institutes in the UK and USA. Until his appointment he was Professor of Biotechnology and Head of the 5 star, 'A' rated, School of Biomedical and Life Sciences at the University of Surrey, a post he held since 1993. Since 1989 he has been Co-ordinator of the Organisation for Economic Co-operation and Development (OECD) Programme on Biological resource Management and in 1993 he was awarded the UNESCO Microbiology Prize for his contributions towards the development of the ground and scope to allow the modification on the population balance of soil to the benefit of man. He is a fellow of the Royal Society of Chemistry, the Institute of Biology, the International Institute of Biotechnology, and the Royal Society of the Arts. He is also a director of the University of Surrey Environmental Body; Beacon Bio and Phytobial Technologies Inc.

Commenting on his appointment, Professor Lynch said:

"From the days when I taught microbiology to agriculture and forestry students in Oxford, I realised the scope for the natural science approach to forestry research. However, with the recognition today of the societal value of forests and the potential of forestry as a clean technology capable of reducing environmental contamination, it is clear that a

fully interdisciplinary approach is needed to realise the full potential of forests.

"It is also clear from my experiences in OECD that the scope for international co-operation is enormous. I feel very privileged to be leading an organisation which has already demonstrated its competence at a time of such great opportunity, and also look forward to retaining my association with the University of Surrey as a Professor where the academic and entrepreneurial spirit is so strong."

### **WOODLANDS SURVEY MOVE**

In April staff from Woodland Surveys branch moved from Silvan House, the former HQ of the Forestry Commission in Corstorphine, Edinburgh to Northern Research Station. The staff are responsible for collecting, analysing and spatial modelling of woodland data at forest, regional and national levels for a variety of purposes. For instance, they have recently produced a new National Inventory of Woods and Trees which shows that forest cover in Scotland is now 17 per cent of the land area, or more than at any time since the days of Robert the Bruce. For more details on the work of Woodland Surveys, contact Steve Smith ([steve.smith@forestry.gsi.gov.uk](mailto:steve.smith@forestry.gsi.gov.uk)).

### **VISITING SCIENTISTS**

Forest Research is fortunate in being able to welcome a never-ending flow of visiting researchers from many parts of the world. Among those with us this year, we have for the first time, a Forest Management Researcher from Dandong Province in China. Kong Xiangwen is working with Silviculture (North) branch for one year funded by a Chinese government scholarship.

### **SITKA PROPERTIES**

A consortium led by Napier University and with Glasgow University and FR as partners has been successful in obtaining £1.2M funding from SHEFC to support the

development of a virtual centre of excellence for research on wood properties and products from Sitka spruce. Details are still being negotiated, but will provide additional staff to support the Centre (mainly based at Napier and Glasgow) and some additional equipment for NRS.

### **WOOD FUEL**

The Forestry Commission is leading a new study to estimate the size of the wood fuel resource potentially available in Britain. The DTI, Welsh Assembly and the Scottish Executive are funding the work. The partnership includes the Forestry Contracting Association (FCA), Forest Research and Forest Enterprise. The forest industries are represented on the steering committee.

The study will examine the potential wood fuel resource available from FC and private sector forests within each Forest Enterprise District. It will also assess the resource available from short rotation coppice, co-products from primary timber processors and arboricultural operations. FE staff, guided by FR's Technical Development branch and the FCA are producing harvesting and environmental constraints, which will be applied to FE outputs and adapted for the private sector. Input from a variety of sources will be combined and presented on a website.

Potential users of wood fuel will then be able to access the website and look at the wood fuel potentially available from forestry and woodland, primary processors and arboricultural operations in each Forest District. A service will then be provided to those who wish to have the same information by some other geographic region, or radius of a proposed site. The results, by Forest District should be available by early 2004.

## CONSERVATION OF GENETIC RESOURCES

EUFORGEN is a pan-European initiative encouraging understanding, policy development and relevant field and lab activity in the conservation of forest genetic resources. It is organised into species networks and Tree Improvement branch at NRS, hosted the 2003 meeting at Pitlochry of the Conifers Network. The UK was chosen as perhaps the best country to demonstrate the theme of the meeting which was to consider the position of exotic species. Representatives from 26 European countries attended together with 3 delegates from Iceland who are considering joining the network. There was a broad consensus among those present that exotic species adapted very fast to the major environmental changes imposed by translocation from their natural range and that conservation measures should concentrate primarily on this material.

## ANOTHER RARE FIND!

Last year I reported the recording of a rare moth by a member of our staff from the Newton office near Elgin. The same member of staff has this year found one of Britain's rarest spiders. He was working on peatland in the Fort Augustus area when he encountered the spider *Araneus alsine*, whilst in the process of vegetation monitoring. *Araneus alsine* belongs to the same genus as the so-called garden spider commonly encountered on large conspicuous orb-webs spun on tall vegetation in a variety of habitats throughout the British Isles. *Araneus alsine* however seems distinct in having a preference for spinning its web in much shorter vegetation occurring in damp, sheltered, open areas in woodlands. The species is highly distinctive, very often deep red ground colour, with a pattern of yellowish dots on the abdomen giving the spider a curious resemblance to a plump, ripe strawberry (hence the common name, Strawberry spider). We believe this new sighting is only the third for Scotland and fifth recorded UK sighting of *Araneus alsine*.

## SCOTTISH CROP RESEARCH INSTITUTE

**Professor J R Hillman**

*Director*

*Scottish Crop Research Institute*

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### FILLING THE EDUCATION GAP

Crop research is often seen as unimportant or irrelevant by the general public and there is little understanding of what science actually does to benefit farmers, consumers or the environment, or why such research is needed. The media do not often publish stories on agricultural science unless there is a 'scare' story such as links between GMO's and health fears or chemical residue problems.

In January 2003, SCRI appointed a full-time Education Officer to promote the need and benefits of scientific research to schools, other educational organisations and the public in general. The Education Officer is working in conjunction with schools and other education providers to increase knowledge of basic, strategic and applied research into crop-based bioscience, and related environmental sciences, and to promote science both as a career and an essential part of daily life. SCRI is currently constructing a new education website to further improve the image of science in general and crop research in particular.

SCRI is looking to the future by increasing knowledge of crop-based bioscience through education, leading to a well-informed and hopefully supportive public that will be of benefit to all those involved in rural research from scientist to consumer via farmers themselves.

For more information on SCRI and Education, please contact our Education Officer, Sharon Neilson

([S.Neilson@scri.sari.ac.uk](mailto:S.Neilson@scri.sari.ac.uk)) Tel:01382 562731 [www.scri.sari.ac.uk/education](http://www.scri.sari.ac.uk/education)

### ENVIRONMENTAL RESEARCH

Recent research by the *Managing Genes and Organisms in the Environment* Theme on the Farm Scale Evaluation of GM herbicide-resistant Oilseed Rape is helping form UK government policy. SCRI were an integral part of the consortium conducting research into Farm Scale Evaluations of spring-sown genetically modified crops. The resulting report was published in October 2003 and is available through the DEFRA website (<http://www.defra.gov.uk/environment/gm/fse/index.htm>). Data from winter oilseed rape trials are being collated now and it is intended the results will be published in mid-2004. The Advisory Committee on Releases to the Environment (ACRE) will advise the UK Government on the implications for any existing, pending or future releases of GM crops of this research.

### LINKING ENVIRONMENT AND FARMING

The Institute became a LEAF (Linking Environment and Farming) Innovation Centre in 2003. LEAF Innovation Centres are not typical working farms, but push forward the boundaries of Integrated Farm Management (IFM) through research and practical experimentation to pioneer new approaches in sustainable land management. Farmers, students, agricultural groups or other

interested groups can visit SCRI to discover how science and agriculture are working together for the benefit of the environment. Current experiments include: Management of fields and landscapes looking at micro-scale process in soils; The use of plant genetics and genomics for environmental benefit; The use of scientific probes to define soil health and quality; Environmental benefits of canopy heterogeneity (e.g. through varietal mixtures; Seedbank community management as a basis for sustainable food webs.

### **SCRI OPEN DAYS June 4<sup>th</sup> & 5<sup>th</sup> 2004**

SCRI will be holding Open Days for school visits and general public on the 4<sup>th</sup> and 5<sup>th</sup> of June respectively. The whole range of SCRI research will be represented and demonstrated through presentations, discussions and displays at this 4-yearly event.

Topics to be covered will include: New fruit and potato varieties; How foods can make us healthier; New weapons against pests and diseases; How science is helping the environment; New Scientific Technologies and much, much more.

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Tel:01382 562731

Sarah Stephens, ([S.Stephens@scri.sari.ac.uk](mailto:S.Stephens@scri.sari.ac.uk))  
Tel: 01382 560000

### **FRUIT FOR THE FUTURE July 15<sup>th</sup> 2004**

Fruit for the Future will be held at the Scottish Crop Research Institute from 2pm to 6pm on. The event will showcase current fruit breeding and associated research at SCRI and will feature organised tours of the fruit trials, visual displays and talks of interest to fruit breeders and those associated with the fruit industry.

Fruit for the Future will enable visitors to learn about (and sample) exciting new raspberry, strawberry and blackcurrant cultivars and to discuss all aspects of fruit breeding and research with our leading soft fruit scientists. The field tour will be accompanied by talks relating to current research and technologies and a poster session on fruit-related science by PhD students and new researchers at SCRI.

Contact: Jane Fairlie  
([J.Fairlie@scri.sari.ac.uk](mailto:J.Fairlie@scri.sari.ac.uk)) Tel: 01382 562731

Sarah Stephens ([S.Stephens@scri.sari.ac.uk](mailto:S.Stephens@scri.sari.ac.uk))  
Tel: 01382 560000

### **POTATOES IN PRACTICE August 5<sup>th</sup> 2004**

Potatoes in Practice is a full-day event held in conjunction with the BPC and SAC and is held at the Scottish Crop Research Institute's GOURDIE FARM site, near Invergowrie. It is sponsored by the British Potato Council. and is an opportunity for farmers, advisers and others connected with the potato industry to view, at a single site, field trials by SCRI and SAC including trials funded by the BPC.

Organised field tours will be led by key SCRI and SAC scientists, allowing the opportunity for individuals to interact with research staff involved. The tours will be complemented by a poster tent showcasing current research at SCRI alongside displays from a range of organizations including SAC and the BPC. Scientists will be available for discussion and consultation throughout the day.

Contact: Stuart Wale (SAC) Tel. 01224  
711213 [s.wale@ab.sac.ac.uk](mailto:s.wale@ab.sac.ac.uk)

Sarah Stephens 01382 560000  
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# SCOTTISH AGRICULTURAL COLLEGE



## **Janette Elder**

*Corporate Information Office, SAC  
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## **HI-TECH COMMUNICATIONS**

Farmers, crofters and vets in Argyll and the Islands recently participated in the largest Video conference link-up, yet undertaken by SAC to see and hear SAC Vets talk on liver fluke in livestock. The videoconference linked together 12 centres enabling people at each centre to participate fully in the proceedings, to ask questions and to hear the answers. Organised by SAC's Farm Business Services Office in Oban, the use of videoconferencing provided a very practical way of dispersing information and communicating knowledge to this wide geographical area, in a short time scale and at realistic costs.

*Donald Harrison SAC Oban  
01631 563093, [AOOban@ed.sac.ac.uk](mailto:AOOban@ed.sac.ac.uk)*

## **TAGGING AND DNA SAMPLING**

Fourteen hundred Scottish Blackface lambs at SAC Castlelaw and SAC Kirkton farms have been individually tagged with a new 'DNA tag' that collects a little ear tissue as a result of the tagging process. In the process of tagging, the sample is automatically collected in a small removable tube attached to the back of the tag that is subsequently sent to the laboratory for the genetic test. The tube bears the same identity reference as that on the ear tag and provides for an easy sample recording procedure. With current methods of assessing scrapie susceptibility requiring a blood sample, this more automated process has advantages for the industry and the animals alike.

*Jo Conington, SAC Edinburgh  
0131 535 3226, [j.conington@ed.sac.ac.uk](mailto:j.conington@ed.sac.ac.uk)*

## **SHEEP SCAB ELIMINATION**

Following a series of meetings held in the Uists and Barra to discuss the control and eradication of sheep scab from the islands, three clear areas for action have emerged; CO-ORDINATION, CO-OPERATION and PROTECTION. As well as identifying these action areas, the meetings have already resulted in active consideration of a plan to co-ordinate treatment of all sheep on Barra with a view to developing a three-year programme leading to the complete eradication of sheep scab from the island. The island meetings were organised and chaired by local SAC (Benbecula Office) Adviser, Wilson McKinlay. They marked the start of a sheep scab eradication initiative in which SAC is working in partnership with Comhairle nan Eilean Siar to raise awareness of the problems associated with the disease and to help islanders plan a control and eradication programme.

*Wilson McKinlay, SAC Balivanich  
01870 602336 [w.mckinlay@ed.sac.ac.uk](mailto:w.mckinlay@ed.sac.ac.uk)*

## **SUSTAINABLE ENVIRONMENTAL MANAGEMENT**

Sustainable Environmental Management, integrates the three main strands of sustainability; ecology and living organisms; the physical environment, and socio-economics. It offers multi-disciplinary BSc (Hons) degree and HND courses which explore the interface between society and the natural environment and draw together the sometimes contradictory themes of concern for the environment and the need for continuing development. The course, which can be taken on a full time or part time basis, is available at SAC's Aberdeen and Ayr Campuses.

## MOREDUN RESEARCH INSTITUTE

### Margaret Bennett

*Communications Manager, The Moredun Foundation  
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## EDINBURGH SCIENCE TRIANGLE

The Edinburgh Science Triangle is the collective brand name of a partnership of seven science parks in the Edinburgh and Lothians area.

The seven parks are:

- Pentlands Science Park
- Edinburgh Technopole
- BioCampus
- Roslin BioCentre
- Heriot Watt Research Park
- Centre for Biomedical Research, Edinburgh
- The Alba Centre, Livingston

The aim of the group is to improve the worldwide awareness and standing of the Edinburgh and Lothian Parks and to develop an effective marketing strategy to attract companies to locate to the area. There was a realisation that other areas within the UK and the wider world had developed successful marketing programmes and that the group had to improve the overall marketing of the area if it hoped to retain and improve its position as one of the leading science clusters in the world.

The project stemmed from a report commissioned by Scottish Enterprise Edinburgh & Lothians (SEE&L) in 2001 and prepared by Laura Meagher PhD of the Technology Development Group. This report focused on the potential synergies of both operations and marketing of the Edinburgh Technopole, Pentlands Science Park and Roslin BioCentre. These three parks had established a good working

relationship and were actively pursuing ways improving local awareness and transportation issues with both SEE&L and the local authorities. In December 2002, the group increased in size to the seven members with SEE&L, who have a 50 overall interest in the Parks, co-ordinating strategy with the partners.

It was recognized that, individually, the established parks had been successful in promoting their respective sites but there was potential to promote the area as one of the leading science clusters world-wide by collective marketing while retaining each Park's individual status.

The key strengths were seen to be: -

- The excellent accommodation and services provided at each site.
- The world-wide reputation of Scotland for pioneering science, innovation and invention.
- The worldwide reputation of, for example, Roslin Institute (Dolly the sheep), Moredun Research Institute (Veterinary science) and Heriot Watt (Engineering and offshore), and the opportunity for commercial companies to engage in collaborative research with these bodies.
- Opportunities for commercial companies to locate and create a cluster of expertise based around the research expertise of universities and research institutes

- Strong links with local universities which would supply the academic staff that science and technology based companies require.
- Good transport links.
- Excellent quality of life in and around Edinburgh.

It was felt that an overall brand identity and a marketing strategy would be required. Following a competitive tendering exercise, Marketing Management Services International was appointed to bring forward a marketing strategy proposal in partnership with Graven Images, graphic designers, who were to create the brand name and suitable logo.

MMSI interviewed all members of the group on their individual needs and requirements and carried out research covering the group's world-wide competitors to gauge the

Edinburgh & Lothian's area's current standing relative to these competitors. Key target market areas were identified together with potential funding partners and vital information relating to key factors, which will influence where companies locate. The strength of Edinburgh's universities and track record in research, innovation and producing spin-out companies was also seen as a key component in the marketing strategy. MMSI reported back to the group in the summer of 2003 and the brand identity of "The Edinburgh Science Triangle" was adopted. The group is currently discussing the marketing options proposed by MMSI and hopes to agree a plan, budget and timetable in the near future. With the benefit of SEE&L's existing knowledge, expertise and support to drive the project forward the group is well positioned to become an important global player.

## NATIONAL MUSEUMS OF SCOTLAND



**Andrew Kitchener,**  
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### CATS ... THE ULTIMATE PREDATORS

For the last four years cats from all around the world have been gathering slowly at the National Museums of Scotland for an unprecedented event. On 12<sup>th</sup> February 2004 all 37 species of cat will assemble for ***Cats...the ultimate predators***, a temporary exhibition on their natural history and conservation. As far as we know this is the first time that all the world's cats have been exhibited together. You might be expecting serried ranks of "stuffed" felids sufficient to make anyone yawn. Instead you will find a rich and vibrant exhibition, packed with interactives to attract and delight families. The taxidermy for this exhibition is breathtaking. It shows all but two species of the world's cats in a variety of dynamic poses, so that we can use the wealth of diversity in the *Felidae* to illustrate their natural history. Everything from roaring lions to racing cheetahs and pouncing pampas cats will be shown in life-like poses. Our aim is to show all of the cats, where possible, enacting particular behaviours that you would rarely see in the wild, and which illustrate particular zoological themes or morphological adaptations. But how did all these cats get to come to Edinburgh?

In part it was a result of our long-term collecting policy, which has allowed us to establish excellent links with many of the major zoos in Britain and, increasingly, in Europe. A major theme of the exhibition is

the conservation needs of the cat family, and of course in this enlightened age NMS does not kill mammals and birds to put them on display. Therefore, natural mortalities were saved after post mortem and transported to us to preserve their skins for later use. In this way we gathered a reasonable assortment of cats, including the very rare African golden cat from Port Lympne Wild Animal Park. Today this species is no longer found in western zoos. As time went on and word of the project spread, so we became luckier at finding some extraordinary cats sitting in freezers around the world. In this way, we were able to add the Bornean bay cat, which at a total of eleven known museum specimens including the one we have, is possibly the world's rarest cat, and the Iberian lynx which, with a total population of perhaps only 120, is the world's most endangered cat. As a result of enormous cooperation and support, especially from conservation biologists in various guises, we now own specimens of almost all species. The only ones we failed to get were the Andean mountain cat and the Chinese mountain cat – these will be represented by research skins or old mounted specimens on loan from other museums. Acquiring so many cats has also provided research opportunities through samples for molecular analyses, new morphological information on the Bornean bay cat and an investigation into the possibility of new species of cat waiting to be discovered in South America.

## FUNDING OPPORTUNITIES

### GENESIS FARADAY PARTNERSHIP Farm Animal Genetics and Genomics

#### Guidance notes and SECOND call for applications for CASE Studentships 2003/2004

#### INTRODUCTION

The BBSRC is providing the Genesis Faraday Partnership with £1M of research funding. Part of this sum is allocated to fund a total of nine BBSRC CASE studentships in the first three years of the Faraday. Students undergoing training through this route will be known as Faraday Associates.

In order to attract high quality students to study as Faraday Associates, Faraday core funds from the Scottish Executive and Defra will be used to top- up the stipend paid by BBSRC.

CASE (Co-operative Awards in Science and Engineering) studentships involve post-graduate students studying for a PhD through research with both an academic institution and a commercial company. The student is predominantly based with the academic institution, but the research project is relevant to the needs of the industrial partner. The industrial partner is expected to provide joint supervision of the student, a financial contribution to the project and industrial placements) during the three years of the project.

The allocation of these studentships is at the discretion of the Genesis Faraday Partnership Research and Development Committee provided certain BBSRC conditions are met. Three out of five CASE studentships for students starting between 1 October 2004 and 31 January 2005 were allocated following the first call for proposals. This second call is to

allocate the 2 remaining CASE studentships to start in that same period.

This note explains the process for the allocation of the two remaining Genesis Faraday studentships in 2003/2004. The approximate timetable is as follows:

#### Closing date for applications

**Midnight 29 February 2004**

#### Notification of successful applications

31 March 2004

#### Completion of notifications to BBSRC

1 July 2004

#### Student start date

1 October 2004 to 31 January 2005

Applications need to be submitted in the Word-forms which can be requested from Pauline McCrossan@genesis-faraday.org or can be found at our website

[www.genesis-faraday.org](http://www.genesis-faraday.org/downloadables/downloadables/htm)  
/downloadables/downloadables/htm.

## **ECRR MEMBER ORGANISATIONS**

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**University of Edinburgh**

**Heriot-Watt University**

**Napier University**

**University of Stirling**

**Scottish Agricultural College**

**Biomathematics & Statistics Scotland**

**British Geological Survey**

**NERC Centre for Ecology & Hydrology Edinburgh**

**Forest Research Northern Research Station**

**CVL Lasswade Veterinary Laboratory**

**Moredun Research Institute**

**MRC Human Reproductive Sciences Unit**

**National Museums of Scotland**

**Roslin Institute**

**Royal Botanic Garden Edinburgh**

**Royal Society for the Protection of Birds**

**Royal Zoological Society of Scotland**

**Scottish Agricultural Science Agency**

**Scottish Crop Research Institute**

**Scottish Natural Heritage**

**University Marine Biological Station Millport**

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**ECRR web site : [www.ecrr.org.uk](http://www.ecrr.org.uk)**

