

Bush Telegraph

The House Magazine of the Edinburgh Consortium for Rural Research

APPLIANCE OF SCIENCE

A major new service for the UK livestock industry was launched recently with the setting up of Edinburgh Genetic Evaluation Services. This joint initiative between the Scottish Agricultural College (SAC), Roslin Institute and the University of Edinburgh was established following the award of a contract by the Milk Development Council (MDC) to a group of scientists from the three organisations to provide statistics on the breeding worth of the UK's dairy bulls and cows.

UK dairy farmers make widespread use of facts and figures on productivity and functional fitness of bulls and cows in selecting semen or replacement females for use in their herds. It is estimated that the use of this sort of information has brought benefits worth over £450 million to the UK dairy industry over the last 20 years.

As well as producing the rankings of breeding merit, familiar to most dairy farmers, a new state-of-the-art method, the 'test-day model', which helps to disentangle genetics and management more effectively, has been introduced. Together these provide valuable additional tools to help UK dairy farmers pick bulls and cows more effectively to suit their system.

With the award of a further contract by the MLC (Meat and Livestock Commission), the Edinburgh Genetic Evaluation Services team are now set to provide a similar service for the beef and sheep sector by processing the records collected via MLC's Signet Breeding Services. This new service for MLC will be rolled out in 2006. The creation of a modern new database by BASCO Data Ltd – a collaboration between leading sheep and beef breed societies – is central to delivery of these new services in the sheep and beef sectors.



Prof. Bill McKelvey, Drew Sloan, Trevor Lloyd, Prof. Geoff Simm and Dr Mike Coffey at the launch of Edinburgh Genetic Evaluation Service.

Drew Sloan, Managing Director, Semex and President of Holstein UK who launched the service said, "It has taken several years of planning and co-operation to get to where we are today, and we are now working together for the benefit of the whole agricultural industry; with one unit producing genetic evaluations for dairy, beef and sheep."

Trevor Lloyd, Chairman of MDC Evaluations Ltd said, "Dairy farmers are being driven to greater and greater efficiency, and as such they need accurate and reliable breeding information. We know that a bad mating costs the same as a good mating, but takes years to rectify. For these reasons, we are very pleased that through the new unit at Edinburgh we are giving our dairy farmers access to one of the most advanced evaluations systems in the world. I am confident that they will have the best tools available for herd improvement, breeding cows most suited to modern-day milk production and supplying genetics that can compete in an international market."

Professor Bill McKelvey, Chief Executive of SAC, welcomed the development. He said, "SAC is pleased to be part of this major new industry initiative. We see this as a stepping stone which will enable the industry to take greater control over its future and create a platform that allows it to respond to market signals more quickly. Significantly, this is a UK driven initiative, using UK-tailored genetic evaluation methods, designed for UK livestock producers."

"The team, Professor Geoff Simm, Dr Mike Coffey, Dr Raphael Mrode and Dr Huw Jones of SAC, Professor Robin Thompson and Professor John Woolliams of Roslin Institute and Professor Bill Hill and Dr Sue Brotherstone of Edinburgh University are to be congratulated on their vision and hard work in establishing this service."

Scientific Director's Notes

At the AGM in November, ECRR Directors agreed to continue our seminar series with one focused on educational outreach, where the main aim will be to share experience among ECRR members, and the knowledge of who is doing what. It will precede the summer reception at Pollock Halls on 7 June 2006. To coincide with the AGM and autumn reception on 1 November, a postgraduate conference is being organised to bring together our member's research students at a full day event followed by a reception for Directors, guests and delegates.

The next biennial ECRR Forum will be in May 2007 on the subject of "Energy for Scotland". Detailed organisation for this event will commence in Spring 2007 but it will cover leading-edge thinking in energy generation particularly for, and from, rural areas. Watch this space for more details.

At our autumn reception in November, Professor David Sugden (Edinburgh University) presented a new network initiative

for which a proposal is now maturing. With the acronym SAGES, the Scottish Alliance for Geosciences, Environment and Society bid is in the final stage of negotiation for funding. The proposal builds on long-standing collaboration networks. Initial participants will be the Universities of Aberdeen, Abertay, Dundee, Edinburgh, Glasgow, St Andrews, Stirling, UHI (SAMS) and SUERC. It aims to be inclusive and, in particular, strengthen University links with Scottish institutions, including ECRR members.

The 2006 ECRR Peter Wilson Lecture, co-sponsored by RSE and IoB (Scotland), will take place on 17 February at the RSE. Professor Mark Shucksmith of the School of Architecture, Planning and Landscape, University of Newcastle, will address us on **Social Justice in Rural Areas**. An abstract and more details of the lecture are on Page 11.

Mark Shucksmith moved to Newcastle this year from Aberdeen University where he

was Professor of Land Economy for 10 years. His research interests include: agricultural change and pluriactivity, disadvantage and social exclusion in rural areas, rural housing and rural development, capacity building and restructuring. He has attracted wide sponsorship from Scotland and Europe for his research, has acted as expert adviser to the Scottish Executive Rural Affairs Committee and the Joseph Rowntree Foundation, among others. His four published books in the last 10 years include "Rural Scotland Today: the Best of Both Worlds?" Avebury (1996), and "Exclusive Countryside? Social Inclusion and Regeneration in Rural Britain", Joseph Rowntree Foundation (2000). Tickets are available from the ECRR Secretary (m.talbot@bioss.ac.uk) or the RSE.

Chris Browitt
ECRR Scientific Director
December 2005



School of Life Sciences - Heriot-Watt University



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A REMARKABLE CAREER

Professor Geoff Palmer retired recently from his position at the International Centre for Brewing & Distilling, Heriot-Watt University. Over the past 41 years Geoff's contribution to Heriot-Watt University and to the grain, brewing, and distilling industries has been immeasurable. This note provides a brief outline of a remarkable career.

Born Godfrey Henry Oliver Palmer in 1940, Geoff was brought up in Kingston, Jamaica, by his 8 aunts until the age of 14, when he moved to London to join his mother who had emigrated there in 1948 to work.

Fortuitously two months too young to be placed in employment, he was assessed as being "educationally sub-normal" and put in to secondary school. Within a year however, his cricketing prowess had been talent-spotted and he was transferred to a grammar school where he was put in the "slow" stream. He left school three years later with 6 'O' Levels and 2 'A' Levels and began work as a junior lab technician for Professor Garth Chapman at Queen Elizabeth College, London. Professor Chapman encouraged Geoff to study so that he could go to University and between 1958 and 1961 he attended evening classes and improved his exam grades. However, despite having a full grant from the London County Council, every application to University was rejected – Geoff was regarded neither as an overseas student nor as a local British student.

Dismayed by Geoff's situation, Professor Chapman called a friend at Leicester

University and secured a place for him. Geoff played for the 1st team at cricket and also gained a degree in botany.

On returning to London in 1964 after his degree, Geoff was provided with two job vacancies by the Labour Exchange – one as a gardener in Finsbury Park, the other as a potato peeler at a restaurant (the Job Officer did not believe he had a "real" degree!). He chose potato peeling. After various promotions in the kitchen, he applied for a number of jobs amongst which were a joint PhD in grain science and technology at Heriot-Watt College and Edinburgh University. He was interviewed by Professor Anna MacLeod.

Geoff spent much of his time during the interview looking out of window – an act that earned him Anna's favour! "I hate keen people" she said. Geoff subsequently found out that Anna had corresponded with Leicester University who had told her of Professor Chapman and Geoff's early trouble in securing a University place. This had led her to make up her mind that Geoff was the man for her studentship and he began his PhD in 1965. He completed his PhD in less than 3 years and followed it with postdoctoral work before beginning his research career as a grain scientist at the Brewing Research Foundation in Surrey in 1968. He returned to Heriot-Watt in 1977 to take up a lectureship.

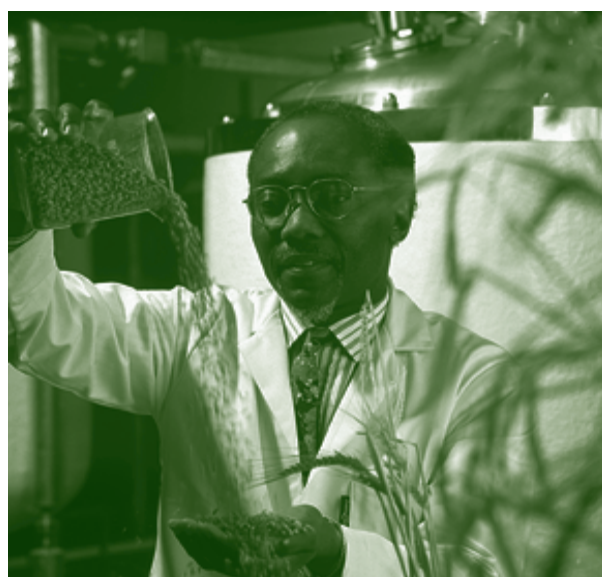
During his career Geoff has contributed over 150 scientific papers and gained a world wide reputation as a grain scientist. In 1998 he was awarded the American Society of Brewing Chemists Award for distinction in research and good citizenship in science. He has also been awarded an OBE for his contribution to grain science and has recently been short listed for a Lifetime Achievement award by The Times Higher.

Geoff's research relates mainly to understanding and applying physiological principles of barley structure and function to improving the malting performance of barley, for use in beer, whisky, or food production.

Geoff's excellent academic achievements described above do not reflect his contribution to life at Heriot-Watt University and to the wider community. He is currently President of the Edinburgh and Lothian Racial Equality Board and a Committee Member of Hanover Housing. In 2002 he was awarded the William Darling bursary for his exceptional contribution to community work and good race relations. Geoff has also written two novelettes, "Mr White and the Ravens" and "The Enlightenment – citizens of Britishness".

When asked about the three areas in which he has worked: teaching, research and the community, his response is "enlightenment, innovation, and care, at any cost", a sentiment that helps explain his successes.

However, it is Geoff's charisma, enthusiasm, sense of fun and good humour that will be most sorely missed around the University. All at the ICBF wish him a long and happy retirement.



Professor Geoff Palmer

Scottish Crop Research Institute



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HOT TOPICS IN CROP R&D

Stabilising Slopes with Vegetation

Landslides, caused by the failure of man-made and natural slopes, can disrupt road and rail links and are a serious safety hazard. In the UK alone, road and rail earthworks and cuttings represent over £20 billion in assets. In 2000-2001, 100 slope failures resulted in over 30 train accidents, prompting the railway industry to spend £40-50 M per annum on remedial work.

Glyn Bengough and Paul Hallett from SCRI's Plant-Soil Interface Programme are working with colleagues from the University of Dundee Civil Engineering Department to study how plant roots interact with soil to stabilise slopes. The work is being supported by funding from EPSRC, Network Rail and the MRC/EPSRC/BBSRC Discipline Hopper Programme.

Amongst the many significant achievements so far are (1) characterisation of the nonlinear biomechanical behaviour of

roots, (2) localised strain measurements in mechanically stressed roots measured with a new image analysis technique, and (3) anchorage mechanics at the root-soil interface.

Waste not, want not

New research is being carried out at SCRI into the viability of using compost from local authority "Green Bin" collections and gardening contractor waste as an agricultural fertiliser. Increased awareness by the public of the benefits of recycling food and garden waste and the increased availability of compost collections by councils is producing a large amount of compostable material at council waste depots. Currently some is sold for home fertiliser use, but this market is limited. SCRI scientists are working in association with Dundee City Council to produce compost that will be suitable for agricultural use. A 3-hectare field experiment at SCRI is looking at the effects of using this compost on crop yields, soil structure, water-holding capacity of the soil and carbon sequestration.

Take a LEAF out of our book

SCRI is a Linking Environment And Farming (LEAF) Innovation Centre, providing access and information on experimental trials for agriculturists, farmers and other interested groups through visits, meetings and

agricultural shows. We strive to safeguard wildlife, their habitat and the environment while running a successful research institute using modern-day farming practices that are compatible with our agricultural industry.

A network of public rights of way through the SCRI grounds forms part of the Invergowrie Walks and SCRI have erected information boards at the beginning and mid-point of the network providing information on environmental research and the flora and fauna found in the area.

Explaining the whys and wherefores

SCRI has been working on a suite of exciting resources called The Living Field. These are aimed at informing schoolchildren and the general public about the importance of the environment, agriculture and science.

The Living Field Community Garden, based at SCRI, is open to the public throughout the year and has been integrated into the Invergowrie walks network. The garden illustrates the close relationship between the land and science using demonstration plots, interactive exhibits, information boards and displays. Different habitats within the garden encourage a variety of wildlife and there is a planting area where schools and other interested groups can design and maintain small experimental plots that can be monitored via a web cam via the SCRI Education Website (available spring/summer 2006).

A new resource for schools, called The Living Field CD, has also been developed. Working with our scientists, teachers and education authority science advisers, the CD supports and enhances studies. The CD has been distributed, free of charge, to all Scottish primary and secondary schools.

Funding has also recently been awarded for The Living Field Study Centre. Located at SCRI, the centre will be a base for studying and understanding biodiversity in farmland systems in the Tayside region, providing an additional interface between science, farming and the general public.

For further information on SCRI educational events and materials, please contact Sharon Neilson, Education Officer. Tel 01382 560032, E-mail Sharon.Neilson@scri.ac.uk).



Professor Peter Gregory and Jim McColl with young friends, at the official launch of the Living Field CD and Opening of the Living Field Community Garden.

Royal Botanic Garden Edinburgh



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NURTURING SCIENTIFIC TALENT IN CONSERVATION

Two leading scientific research institutions are forging fresh links in a bid to ensure Scotland sustains its capacity to deliver world-class expertise for global conservation – by inspiring more young people to consider a future in plant science. In the face of unprecedented environmental pressures and with a third of all plant species under threat of extinction this century, RBGE and University of Edinburgh have announced the collaboration to be based at the £14 million "Gateway" National Biodiversity Interpretation Centre.

RBGE Regius Keeper Professor Stephen Blackmore and Regius Professor Karl J. Oparka, of Edinburgh University's Institute of Molecular Plant Sciences, have outlined proposals for the partnership which will focus on wider interaction with the public than has previously been possible for either organisation. As part of this communication, they aim to promote their science as a career opportunity.

"The great challenge of the 21st century is to identify sustainable ways of using our planet's resources", explained Professor Blackmore. "The Gateway initiative has

always been about communication and inspiring the public to play their part by facilitating likeminded organisations under one roof. This strengthening of links with the university is particularly sensible as there are already common bonds. Indeed, the roles of Regius Keeper and Regius Professor were a combined responsibility until 40 years ago and the two institutions continue to run a successful MSc course in the Biodiversity and Taxonomy of Plants, as well as benefiting from shared research posts. We cannot afford to miss this crucial new opportunity of inspiring a new generation of plant scientists".

His comments were echoed by Professor Oparka: "We need to address a situation

the general public in all matters concerning the essential roles of plants in our lives. The Gateway has the potential of providing the university with a valuable opportunity to interact with the public generally and, crucially, to inspire young people to find out more about opportunities in science."

Due for completion in 2009, the Gateway, at the West Gate of RBGE's Inverleith Garden, will be a window on the world of biodiversity and related issues, such as climate change. It will offer live interpretation, personal interaction and a range of media suitable for all ages and abilities. Designed, built and run to be a model of sustainability, the building will



Professor Karl Oparka and Professor Stephen Blackmore

where plant sciences commonly lose out to the seemingly more exciting animal sciences – and it's up to us to articulate more about what we do, why it is vital to the world in which we live and how plant-based research is both vital and stimulating", he said. "Plants are an enormous part of our environment – both in terms of agriculture and biodiversity – and it is the combined aim of our two institutions to engage

provide free access to upwards of one million visitors a year.

Scotland & Northern Ireland Forum for Environmental Research



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WORKING IN PARTNERSHIP

It is widely recognised that the greater the breadth of input into a research project, the better the quality of the outcome and in the environmental sector the Scotland & Northern Ireland Forum for Environmental Research is increasingly operating as a catalyst for such partnership working.

Soil Resilience Indicators

A recent example of the value of partnership can be seen in the consultation process that formed the final stage in the SNIFFER project entitled, "Indicators of Soil Resilience for Scotland and Northern Ireland". As part of a peer review process to refine the outcomes and test the robustness of the work, SNIFFER organised a wide ranging workshop to bring together a range of key individuals with an expertise of soils science and policy, to review and validate a set of indicators developed by the Scottish Agricultural College (SAC) under contract to SNIFFER.

Held in October at the Edinburgh Scotch Whisky Heritage Centre, the workshop involved some thirty delegates representing nineteen different organisations from Scotland, Northern Ireland and those representing the UK and devolved administrations. The meeting provided an opportunity for discussion about the chosen indicators and implications for soil policy in Scotland and Northern Ireland. Participants were asked to provide their views to support the inclusion or exclusion of proposed biological, physical and chemical indicators measuring soil quality, resilience and resistance, for the soil function of environmental interaction. One of the recommendations arising from the workshop was that Total Nitrogen, an important nutrient



for plan and microbial activity in soils, should be included in the proposed minimum dataset for soil quality, rather than its previously proposed 'secondary indicator' status. The results of the workshop directly informed the final SNIFFER report, which is now published and available on the SNIFFER website: <http://www.sniffer.org.uk/search.asp> (search code LQ06).

SNIFFER is a member of the UK Soil Indicators Consortium (UKSIC), a national network working collectively to identify indicators to be built into a UK soil monitoring scheme. UKSIC aims to identify the indicators that should be built into a national soil monitoring scheme, and to recommend the most appropriate mechanisms for funding and undertaking this monitoring. The outcomes of the SNIFFER report will contribute to the work of UKSIC.

SNIFFER's new focus

SNIFFER's 'agenda-free' approach to bridging

knowledge gaps and partnership working has seen it grow in seven years from an organisation primarily focusing on water related topics to one that now covers:

- urban environment & sustainable communities
- sustainable land use and water management
- environmental pollution and regulation
- climate change
- sustainable economy
- quality of life, environmental justice and health
- marine environment

Whilst it remains firmly committed to its Scotland and Northern Ireland stakeholders, in keeping with its commitment to partnership working, SNIFFER is also widening its membership to include organizations from across the UK and is poised to secure its first major project with direct funding from the EC on urban environmental research co-ordination.

Scottish Natural Heritage



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CARING FOR NATURE

Geese flying high in Scotland

Geese are returning to winter in Scotland in some of the highest numbers recorded since their populations crashed in the early 20th century, a report by SNH shows. The report found that numbers of pink-footed goose, Greenland white-fronted goose, greylag goose and two types of barnacle goose have recovered significantly in recent decades.

Migrating geese have been protected in Scotland since the 1950s, when high levels of shooting meant that their numbers had been depleted to such an extent that some populations were threatened with extinction. In the past the birds were widely regarded as pests as they graze on farmland and damage the crops. Increases are linked to stronger legal protection and the success of goose management schemes, which offer financial rewards for farmers and crofters to manage their land to help conserve goose populations.

According to the SNH commissioned report, Status and population viability analyses of geese in Scotland, pink-footed geese made the most dramatic recovery, with around 230,000 birds migrating to Scotland each year compared to less than 10,000 in the 1950s, with declines now unlikely. Numbers of Greenland white-fronted geese and Icelandic Greylag geese also grew steadily until the mid-

1990s. Thereafter, however, they declined, with the populations now fairly stable at around 17,500 and 73,000 respectively.

Migrating barnacle goose populations from Greenland and Svalbard, which stand at 47,500 and 27,000 respectively, are also at healthy levels and are predicted to continue to grow. The Svalbard population, which winters on the Solway, has exhibited particularly high levels of growth in recent years, but is constrained by current capacity on its breeding grounds. It increased from a low of just 300 birds in the 1940s.

Code will help prevent fossil damage

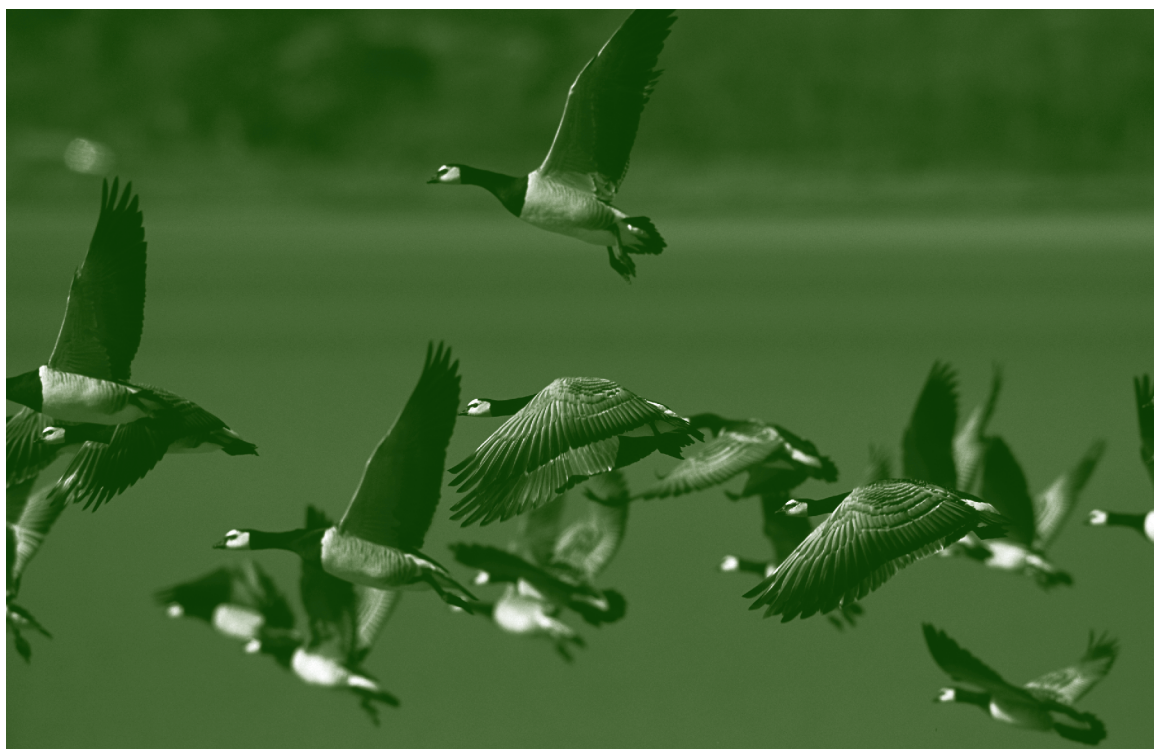
SNH recently launched discussions on the Scottish Fossil Code, which will provide guidelines on how to collect fossils in a responsible way without damaging them or the areas where they are found.

Small-scale fossil collecting is a popular hobby and amateur collectors quite often uncover rare and very important finds. Bathgate is one of a number of important geological areas in the country, including Skye, Caithness, Ayrshire and Lesmahagow in south

rarest and most scientifically important fossils in the world, from some of the earliest land plants and fossil fish to early mammal and dinosaur remains, but in some areas the fossil heritage is threatened by irresponsible collecting

Horse riders thank SNH

Horse riders have given SNH an award for the public agency which has done the most for equestrian access in Britain. The British Horse Society presented its national Access award to SNH for the public agency's pioneering role in the Land Reform (Scotland) Act 2003. The Act



Barnacle geese on the Solway (Courtesy SNH & Laurie Campbell)

Geese which migrate to Scotland are not currently considered a risk in terms of carrying avian influenza (bird flu), since they fly from Iceland, Greenland and Svalbard. This means they are extremely unlikely to come into contact with the virus, which originated in Asia.

Lanarkshire, which is threatened by irresponsible, large-scale collecting. In some cases industrial-scale machinery has been used and some fossils are known to be illegally traded on the international market.

Scotland boasts some of the

provides for a legal right of non-motorised access to most land and inland water, for recreational activities like horse riding, as long as the user behaves responsibly.

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SNIPPETS FROM THE BIOSCIENCES

[Editor's note: The following notes have been abstracted from the October 2005 edition of Bionews, the School of Biological Sciences' newsletter.]

Funding the science

The past year has been another really excellent one for grant awards to members of the School of Biological Sciences. The total value of grants awarded up till August 2005 (over £20 million) is just over a third of the total for the whole of the College of Science & Engineering, and about a fifth of the total for the whole University.

The School has several big initiatives in the offing. Progress is also being made with plans for a new building adjacent to Ashworth to house the Centre for Infectious Diseases, whose Director is Tony Nash.

Stem cell breakthrough

Scientists at the Universities of Edinburgh and Milan have made a major breakthrough in tackling neurological conditions like Parkinson's and Alzheimer's. They are the first in the world to develop a new technique to grow pure brain stem cells helping to discover more about these diseases.

In the body, stem cells divide to produce both copies of themselves and other, more specialised, cell types. Until now, scientists had not been able to sustain the ability

of neural stem cells to produce copies of themselves when grown in a dish. This meant that the population of cells in the dish would always become mixed, with only a few stem cells and many more specialized cells. By changing the growth conditions for the cells, the Edinburgh and Milan labs have for the first time established pure stem cell divisions, thus avoiding the unwanted differentiated cells.

Professor Austin Smith, leading the Edinburgh team, believes that drugs developed to interfere with the onset and/or progression of the disease may now be tested on the neural stem cells, or on specific cell types made from them. Such an approach will reduce the number of animals used in this research. The researchers also feel that their work may be a step towards using stem cells to replace damaged tissue.

Fungus effective against malaria

Scientists have discovered an unlikely ally in the fight against malaria. Infecting mosquitoes with fungi can drastically reduce transmission of the disease, surprising new research from the University of Edinburgh and Imperial College London reveals. A study in Science journal suggests that infecting mosquitoes with fungi while they digest human blood could help to significantly curb the disease that claims at least a million lives each year.

Insecticides like DDT have been used for decades to kill the mosquitoes that transmit malaria, but many mosquitoes have become resistant to chemical pesticides. By contrast, this radical new approach uses a fungus as a biological pesticide. Inert fungal spores are impregnated on cloth or netting, or sprayed on house walls or ceilings. When a mosquito touches the spores, the fungus germinates, penetrating the mosquito and growing within it. The mosquito succumbs to the fungus before it has begun to transmit malaria.

The Edinburgh and Imperial teams discovered that fungal infection reduced malaria transmission in the laboratory by 98 percent. Mostly, the mosquitoes died before they became infectious. But the fungus also reduced transmission by interrupting mosquito feeding and may also have directly interfered with the malaria parasites in the mosquito. "It seems likely that fungal-infected mosquitoes will also fly less well, and produce fewer eggs," said Dr Simon Blanford of the School of Biological Sciences, who carried out the laboratory work.

Hatching more cod

Teaching dim-witted farmed fish new tricks could help to replenish depleted North Sea stocks, research by the Universities of Edinburgh and Bergen claims. Rearing cod in plain, featureless hatcheries – and feeding them mechanically at regular intervals – does nothing to prepare them for life in the open sea, a new study suggests. But, by providing more stimulating nursery environments and varying feeding routines, fish farmers could help cod to survive in the wild, a report in the Proceedings of the Royal Society B claims.

Dr Victoria Braithwaite, of the School of Biological Sciences' Institute for Evolutionary Biology, said: "Millions of hatchery-reared fish are released yearly to help boost collapsed fish stocks. Most of these schemes fail with the released fish dying when they are young and small. One reason is that fish reared in plain hatchery environments do not know how to behave in the wild. It is well known that if birds and mammals grow up in plain, artificial environments, they are often behaviourally incompetent. Our results show that this is also true in fish."

In Brief. . .

Centre for Ecology & Hydrology to restructure

The Natural Environment Research Council (NERC) has issued a statement of intent to restructure the **Centre for Ecology and Hydrology (CEH)**. Under the proposals, five of CEH's nine sites would close – Banchory, Dorset, Monks Wood, Oxford and Swindon. The retained sites would be Wallingford (the headquarters), Edinburgh, Bangor, and Lancaster. The aims of the restructuring plans are to maintain the benefits of a regional presence but improve scientific and leadership focus, and create more cost-effective science delivery.

The announcement follows a review of CEH's science by NERC's Science and Innovation Strategy Board and a decision by NERC Council to approve a £15 million future level of core science funding for CEH. Overall staff numbers at CEH are expected to reduce from approximately 600 to 400, over a four-year transition period. Details of the planned changes have been published at www.nerc.ac.uk/consult/ceh/ceh-businessplan.pdf.

Ian Wilmut to head up new Centre for Regenerative Medicine

Edinburgh University is setting up a new **Centre for Regenerative Medicine** to develop new treatments for human disease through innovative research with stem cells. The new centre will be led by Professor Ian Wilmut, world-renowned for research that led to cloning of Dolly the sheep.

Professor Ian Wilmut said the Centre will provide a unique environment for world class research with stem cells with the aim of developing therapies for diseases which in many cases do not have any treatment at the present time.

Professor John Savill, Head of Edinburgh University's College of Medicine and Veterinary Medicine, said "Ian Wilmut and the new Centre will serve as magnets, drawing the very best young clinical and basic scientists from around the world to Scotland to work with our NHS partners and develop new approaches towards prevention and treatment of debilitating diseases affecting the nervous system, liver and other key organs. I have no doubt that Edinburgh will remain a key player in the UK Stem Cell Initiative, particularly because of strong support from Scottish Enterprise, with whom exciting commercial development plans are being progressed."

The Centre will build upon existing expertise in Edinburgh within the University's **Institute of Stem Cell Research**, and in the **Roslin Institute**.

New research chief



The University of Edinburgh has appointed a new director to lead its research and commercialisation office, **Edinburgh Research and Innovation (ERI)**.

Derek Waddell, who was previously deputy director of ERI, replaces Bob Smailes who has left to take up a new post at the University of Leiden in the Netherlands.

Mr Waddell says he is keen to develop further the work of ERI, which seeks to promote the University of Edinburgh's research and commercialisation activities to research sponsors, collaborators, licensees and investors. "These are

exciting times at Edinburgh – research applications and research awards are increasing, and our commercialisation activities are on the increase too. In the past five years alone, we have set up an average of one company a month, creating 150 new jobs", said Mr Waddell.

Queen's Award

The University of Edinburgh has been awarded one of the prestigious Queen's Anniversary Prizes for the Virtual Hospital Online, a learning support environment developed in the College of Medicine & Veterinary Medicine.

The announcement was made at a reception for prizewinners at St James's Palace on Thursday 17 November 2005. The Prizes for Higher and Further Education are awarded biennially for outstanding achievements of excellence in activities, areas of work and projects which have benefited the Nation.

The Virtual Hospital allows students to access a vast range of online resources and services, tailored specifically to their studies. It currently supports medical, veterinary and postgraduate research students in the College.

Edinburgh medical and veterinary medical students have access to a broad collection of resources: from presentations, lecture notes and reference lists to interactive video and audio, all available at any time.

Teachers have contributed many hundreds of learning activities across the curricula, including 'virtual patients', which engage students with interactive real time case studies and contribute to the development of key clinical competencies and skills.

"I think the idea is a brilliant one, and especially in the later years of the course," said one 4th year medical student. "It is an incredibly powerful teaching aid."

"It's a fantastic way of keeping in touch with students in different places and on different clinical rotations. The discussion boards are very well done and widely used."

"We are very proud of the groundbreaking system devised by Professor Dewhurst and his team, which provides an integrated online system that can be used in successive years by widely dispersed cohorts of students" said Professor Timothy O'Shea, Principal and Vice-Chancellor of The University of Edinburgh.

Looking East at Napier

The opportunities for Scottish colleges and universities in China were highlighted at Napier University recently. The opportunities were highlighted by Chinese government official, Dr Jiang Feng, at Napier University in December 2005. Dr Jiang, China's Deputy Director General of the Department of International Cooperation & Exchanges, Ministry of Education, addressed a conference organised by the China 48 Group at Napier's Craiglockhart Campus.

Representatives from Scotland's colleges and universities were able to gain a greater understanding of how they can help meet the demand for Western education in China and reap the associated economic benefits. In recent years thousands of Chinese students have come to the UK, United States and Australia for university education and the UK has traditionally been the number one destination. However, in the last two years, the numbers of Chinese students coming to the UK has fallen as a result of fierce competition from the United States and higher charges for UK visas.

Napier University continues to attract greater numbers of Chinese students thanks to its long-standing presence in China and to a number of agreements with Chinese FEIs/HEIs where students study partly in China and partly in Scotland and graduate with a Napier degree.

Earthquakes and tsunamis

After the Sumatra-Andaman earthquake and tsunami which occurred on 26 December 2004, survey work and analysis applied to a vast amount of data gathered by sensors around the globe have given scientists a much clearer picture of the event than was possible in its immediate aftermath.. BGS scientists have collaborated with other organisations to produce high quality images of the ocean floor off the coast of Sumatra after the earthquake, to assist recovery work, and assess the low but finite tsunami risk to the UK.

A collection of three papers in the Science journal co-authored by 40 researchers has provided the most detailed picture so far of this great earthquake. Analysis of seismic data indicates that a rupture about 400 km long and 100 km wide, located 30 km under the seabed, formed on the fault off the coast of Aceh. The total energy release in the earthquake caused the Earth's rotation to speed up very slightly, like a skater drawing in her arms to spin faster, and thus reduced the length of day by about 2.5 microseconds, as well as causing Earth to wobble by about 2.5 centimetres at the poles of rotation. However these are not lasting effects, as they are very small compared to tidal effects, and the Earth's natural wobble on its axis.

Edinburgh Research Partnership

A major new research alliance between scientists at the University of Edinburgh and Heriot-Watt University was announced recently with the launch of Edinburgh Research Partnership (ERP). The £24 million award will stimulate collaboration, allowing key research facilities at both institutions to be used to their full potential. Engineers, mathematicians and scientists at each university will work together to develop a shared research strategy, and pool resources where it is beneficial. ERP will also support the development of a joint postgraduate school, which will use the combined resources of both universities to provide high quality courses and training.

The new partnership will focus on five key research areas – signal and image processing; mathematical sciences; energy systems; subsurface science and engineering; and integrated systems, incorporating microelectronics, photonics and micro-systems. It will involve more than 750 researchers and benefit from collaborations with other bodies, including the British Geological Survey, the Scottish Universities Environmental Research Centre and the Astronomy Technology Centre. ERP is funded by the Office of Science and Technology, the Scottish Funding Council and the two universities.

Veterinary Training and Research Initiative

The Veterinary Training and Research initiative is a new, government-sponsored, scheme for veterinary graduates and undergraduates. It provides opportunities for veterinary undergraduates and graduates to find out, first hand, what research really does to advance veterinary science. For participants, there are no obligations to become a researcher, but some will find the experience irresistible. Participation in any of the schemes could open the door to long-term, highly satisfying career options in research, industry or government policy making.

- Summer Vacation Scholarships: For 2nd, 3rd or 4th year undergraduates from all UK veterinary Schools. Spend eight weeks in a top international laboratory and learn some of the state-of-the-art methodology used to address ruminant diseases including tuberculosis, enteric disease and nematode infections. Stipend £200 per week for eight weeks.
- One Year MSc by Research: This programme offers one-year MSc projects in state-of-the-art research, addressing major veterinary problems.
- PhD training: for three years, as part of a research team in the University of Edinburgh or Glasgow Veterinary Schools or in one of the collaborating Research Institutes (Institute for Animal Health [Compton], Moredun Institute, Roslin Institute, Veterinary Laboratory Agency [Weybridge]).

For further details contact Prof Hugh Miller (Hugh.Miller@ed.ac.uk; Tel 0131 650 6215) at R(D)SVS.

People & Events

ECRR DIARY

2006

Feb 6	Directors' lunch	Centre for Mountain Studies, Perth Host: Prof Martin Price	
Feb 17	Annual Lecture	RSE, George Street, Edinburgh "Social justice in rural areas" Prof Mark Shucksmith	17.00
Mar 9	Directors' lunch	MRC Human Reproductive Sciences Unit, Little France, Edinburgh Host: Prof Robert Millar	11.00
Apr 12	Main Board Meeting	Venue TBA	
May 1	Directors' lunch	School of Social & Political Sciences, Edinburgh University Host: Prof Lorraine Waterhouse	12.30
Sep 4	Directors' lunch	Scottish Agricultural Science Agency Gogar, Edinburgh Host: Prof Gordon Machray	12.30
Nov 1	Main Board Meeting & AGM	Venue TBA	

ECRR ANNUAL PETER WILSON LECTURE 2006

Professor Mark Shucksmith, School of Architecture, University of Newcastle upon Tyne, will give the ECRR Peter Wilson Annual Lecture on the 17th February 2006, commencing at 17.30 hours. The title of his talk is "Social justice in rural areas".

Social justice is as much an issue for rural communities as it is for urban people. Poverty affects a substantial minority, with one in three people in rural Britain experiencing low income at some time during 1991-96, for example. A growing body of research has documented people's experiences of social exclusion in rural areas and, to a lesser extent, the forces which lie behind exclusion and inclusion. This lecture reviews this evidence, touching on incomes and employment, housing affordability and civic renewal, as well as the particular circumstances of young and old.

The lecture will take place at the Royal Society of Edinburgh, George Street, Edinburgh. Tickets can be obtained from the RSE or from the ECRR Secretary (email: m.talbot@bioss.ac.uk).



ECRR Member Organisations

University of Edinburgh	www.ed.ac.uk
College of Science & Engineering	
College of Medicine & Veterinary Medicine	
College of Humanities & Social Science	
Scottish Agricultural College	www.sac.ac.uk
Research & Development	
Education & Training	
Heriot Watt University, School of Life Sciences	www.sls.hw.ac.uk
Napier University, School of Life Sciences	www.napier.ac.uk/fhls/lifesciences
University of Stirling, Institute of Aquaculture	www.aquaculture.stir.ac.uk
UHI Millennium Institute	www.uhi.ac.uk
University Marine Biological Station Millport	www.gla.ac.uk/centres/marinestation
Moredun Research Institute	www.mri.sari.ac.uk
Forest Research, Northern Research Station	www.forestry.gov.uk
Roslin Institute	www.roslin.ac.uk
Biomathematics and Statistics Scotland	www.bioss.sari.ac.uk
British Geological Survey	www.bgs.ac.uk
Centre for Ecology & Hydrology Edinburgh	www.ceh.ac.uk
DEFRA Lasswade Veterinary Laboratory	www.defra.gov.uk/vla
MRC Human Reproductive Sciences Unit	www.hrsu.mrc.ac.uk
National Museums of Scotland	www.nms.ac.uk
Royal Botanic Garden Edinburgh	www.rbge.org.uk
Royal Society for the Protection of Birds – Scotland	www.rspb.org.uk
Scottish Agricultural Science Agency	www.sasa.gov.uk
Scottish Crop Research Institute	www.scri.sari.ac.uk
Scottish Natural Heritage	www.snh.org.uk
Scotland & N. Ireland Forum for Environmental Research	www.sniffer.org.uk
Edinburgh Centre for Tropical Forests	www.nmw.ac.uk/ectf
Scottish Centre for Animal Welfare Sciences	

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FUTURE ISSUES

Contributions to the Bush Telegraph are welcomed. All contributions, comments and suggestions can be emailed to Mike Steele at mike.steele@sac.ac.uk.

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