

auktalk

the newsletter of the zoology department of trinity college dublin
number 7, michaelmas term 2006

STARTING OUT



Some of the 2006-7 rising Junior Sophisters come face to face with marine invertebrates for the first time on the legendary autumn Marine Biology Field Course to Portaferry, organised by Frank Jeal and Jim Wilson.

FINISHING UP



Some of the 2005-6 Senior Sophister Zoology Class pose on the steps of the Zoology Building following the November 2006 Commencements.

..... AND MOVING ON

Following on from the picture of the 2005 class in the last *auktalk*, and hard on the heels of the College Open Day, where the second most popular question was "What jobs are there for Zoologists?" here is an abbreviated list of what that class are currently doing:

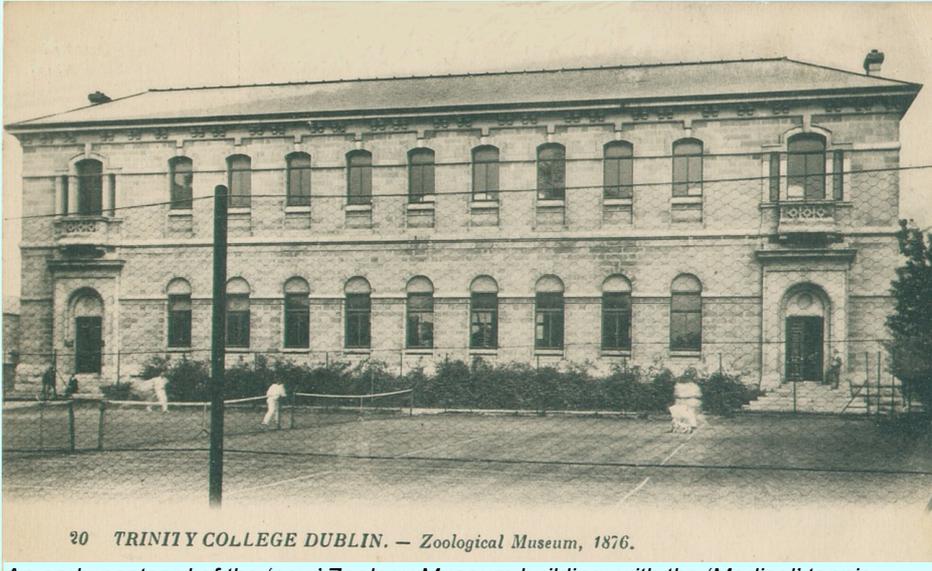
- Patricia Fay – working in Permanent TSB
- Niamh McKeon – Production assistant on RTE2 science programme 'Scope'
- Niamh Murray – Training to be a wildlife ranger, South Africa
- Yvonne McCann – Trainee Zoo Keeper, Dublin Zoo
- Norman Champ – Pilot training, South Africa
- John O'Neill – Physiotherapy degree, Manchester
- Louise Delaney – Pharmacy degree, Manchester
- Fiona Culhane – Aquatic Ecosystem Management MSc, Napier, Edinburgh
- Fiona Flynn – Wildlife Conservation and Management MSc, Newcastle
- Liadhan Casey – Physiotherapy degree, Kings College London
- Andy Byrne – PhD in conservation ecology, Trinity College Dublin
- Mark Murphy – Retail work to save for travelling
- Fergal Chambers – Teaching
- Caroline Cassidy – Travelling in Asia

As a PS to this section, we can report that the Zoology stand at the College Open Day for schools was as popular as ever, with its "dinosaur" skull (actually *Hippopotamus amphibious*), the "exploding slugs" (really their nematode parasites), blood-sucking leeches and spectacular stick insects.

Thanks to all who helped and especially Paula Murphy and Alison Boyce for all their work. Hopefully it means we will continue to attract lots of the good students into Zoology in the future.

EDITORIAL

Well, it's that time of year again when *auktalk* hits the Xmas mail and fights with all the other coffee-table offerings for your attention. This is a special birthday anniversary issue, as the Zoology building is officially 130 years old this year, and in this issue we have some recollections of what it used to be like and also the latest update on the Museum.



20 TRINITY COLLEGE DUBLIN. — Zoological Museum, 1876.

An early postcard of the 'new' Zoology Museum building, with the 'Medical' tennis courts in the foreground. Now who could that be standing on the steps? (from the College Library archives).

A lot of the news is covered in the accompanying articles, but I thought I'd give a brief update on what's been happening since this time last year. The *School of Natural Sciences*, while still struggling like many other Schools with a considerable budget deficit, has made a lot of progress, notably in getting vacant posts re-filled. Five posts, including two in Zoology (see elsewhere in this issue) are being filled, and the SNS has also gained one of the two New Blood posts offered to College. Zoology itself is proving as popular as ever with the students, with record numbers (>50) in the Sophister years. As a consequence of its popularity, the Terrestrial Field Course, always a favourite, has had to be switched from Killarney to Glendalough to cope with the extra numbers (see photo opposite).

Celia Holland has stepped down as HoD, to be replaced by Jim Wilson, and Ken Irvine is now the SNS *Director of Teaching and Learning*. While he is thus occupied, Ian Donohue has taken over his teaching and other responsibilities. Congratulations are due to various Zoology staff for official recognition of their merits: Fellowship – Ken Irvine (2005), Nicola Marples (2006): Promotion - Jim Wilson (Assoc. Prof. 2006), Ken Irvine (Senior Lecturer 2005), Mark Brown (accelerated promotion 2005), and, as Nicola Marples stepped down from Council in 2006, Mark Brown was elected by the Faculty to Council.

Reorganisation continues apace, with College now attempting to form the various Schools into clusters, of which Zoology (and SNS) are likely to be in with rest of what were the Faculties of Science and of Engineering. Internally, teaching is being re-arranged into standardised modules (as part of the pan-EC Bologna Agreement) from the JF Biology to the post-grad ES MSc, and this means also a change in the Exam and evaluation formats.

A word of thanks for their service to the Department is due to Suzanne Borich (of whom more news later in this issue) and Rick Rolfe, whose departures in 2006 were mourned with the usual cakes and speeches.

Finally, please take a couple of minutes to look over the revamped Zoology website (www.tcd.ie/zoology/). Note that there is an Alumni page, which we hope you'll use to pass on any news and to keep in touch not only with the Department but also with the other alumni.

As usual, my own thanks to all the contributors to this issue, particularly my co-editors, Frank, John and Paddy, and to all those who contributed news, text and/or pictures. Remember that although the hard copy is just in black and white, the colour version is available as a pdf on the Zoology website, so refer to that for the full value photos. Looking forward to hearing from the rest of you very soon!

Jim Wilson



The 2006 JS Terrestrial Field Course to Killarney proved so popular that it was not possible to accommodate everyone in the Arthur Vincent Lodge, and some were forced to camp out in the idyllic surroundings of the Killarney National Park – real field zoologists.

RESEARCH IN THE DEPARTMENT

The Department continues to be very active in research, and its staff interests can be found on both the College's *Research Support System* pages and on the *Expertise Ireland* portal (www.expertiseireland.com).

The major research groupings in the Department are Behavioural and Evolutionary Ecology, Conservation and Wildlife Biology, Developmental Biology, Freshwater Biology, Marine Biology and Fisheries, and Parasitology. Zoology is also a major contributor to research in the Centre for the Environment.

Since 2000, the Department has attracted over €2 million in research funding from national (SFI, HRB, EPA etc) and international (mainly EU) sources. The Zoology Department currently accommodates a total of 34 post-graduates, funded through a variety of research income, Embark scholarships and College grants.

Some of the recent publications by Dept Staff are listed below.

Astanei, I., E. Gosling, **J.G. Wilson** & E. Powell, Genetic variability and phylogeography of the invasive zebra mussel, *Dreissena polymorpha* (Pallas), *Molecular Ecology*, 14, 2005, p1655 – 1666

Byrne, C., Holland, C., Walsh, E., Mulligan, C and Poole, R., Utilisation of brown trout by *Acanthocephalus clavula* (*Acanthocephala*) in brown trout (*Salmo trutta*) in an Irish lake: is this evidence of a host shift?, *Journal of Helminthology*, 78, 2004, p201 – 206

Jennings, E. Allott, N., Position of the Gulf Stream influences lake nitrate concentrations in SW Ireland, *Aquatic Sciences*, 2006

Lewis, R., Stafford, P., Behnke, J.M. and Holland, C., The development of a mouse model to explore

resistance and susceptibility to early *Ascaris suum* infection, *Parasitology*, 132, (02), 2006, p289 – 300

Lioubinski O, Alonso MT, Alvarez Y, **Vendrell V**, Garrosa M, **Murphy P**, Schimmang T., FGF signalling controls expression of vomeronasal receptors during embryogenesis., *Mechanisms of Development*, 123, (1), 2006, p17 – 23

Lynch AB, Brown MJF, Molecular sexing of pine marten (*Martes martes*): How many replicates?, *Molecular Ecology Notes*, 6, 2006, p631 – 633

Mappes, J., **Marples, N.M** & Endler, J. A., The Complex business of survival by aposematism., *Trends in Ecology and Evolution*, 20, 2005, p598 – 603

Marples, N. M., Kelly, D. J. & Thomas, R. J., Perspective: The evolution of warning coloration is not paradoxical, *Evolution*, 59, 2005, p933 - 940

McCarthy, V., Donohue, I. & Irvine, K., Field evidence for stoichiometric relationships between zooplankton and N and P availability in a shallow calcareous lake, *Freshwater Biology*, 51, 2006, p1589 – 1604

O'Higgins, T. Wilson, J.G., Impact of the River Liffey discharge on nutrient and chlorophyll concentrations in the Liffey estuary and Dublin bay (Irish Sea)., *Estuarine, Coastal and Shelf Science*, 64, 2005, p323 – 334

Regan, E.C. & Moran, J., *Thanatophilus dispar* (Herbst) in turloughs in the west of Ireland., *The Coleopterist*, 14, (2), 2005, p89 – 91

Ruiz-González MX, Brown MJF, Honey bee and bumble bee trypanosomatids: specificity and potential for transmission, *Ecological Entomology*, 31, 2006, p616 – 622

Styles, D., Donohue, I., Coxon, C.E. & Irvine, K., Linking soil phosphorus to water quality in the west of Ireland through the analysis of moist soil samples, *Agriculture, Ecosystems and Environment*, 112, 2006, p300 – 312

Peter Wilson (Adjunct Professor) with some of the 2005-06 Senior Sophister students on a visit to Dublin Zoo as part of the Conservation and Wildlife Management Course



RESEARCH FOCUS 2:

Malaria, Worms, Nigeria and a PhD

Paddy Kirwan (2003), Parasitology Group

Just over two years ago I sought funding from IRCSET for a project entitled '*Geohelminth infection in children under 24 months: epidemiology, impact and strategies for control*'. Today while writing this article I looked at the aims for that proposal and I barely recognise them. It's shocking to think how my PhD has changed since then and exciting to think of where it's going to take me next!

During my first trip to Nigeria we examined geohelminth (worm) and protozoan infections in children under the age of 24 months. This survey opened my eyes to the heavy parasite loads that these children harbour. Some children were infected with geohelminths (*Ascaris lumbricoides*, *Trichuris trichiura* and Hookworm), malaria, *Cryptosporidium* sp. and other intestinal protozoan infections. Our results showed that children over 12 months are more exposed to geohelminth infection. The prevalence jumped from 3% in children aged 0–1 year to nearly 30% in children aged 1–2 years.

Our work takes place in four villages outside Ile-Ife, a town 3hrs north of Lagos. Everyday I take a short walk down to the main campus with Sife (a postgrad working on *Cryptosporidium* spp.) and we pass through the Obafemi Awolowo University parks and gardens. You don't have to strain your eyes to see beautiful butterflies, birds, soldier ants, millipedes, fruit bats, lizards and lots of other little creatures all in the space of 15 minutes. From the Zoology Department we take all our equipment to one of the four project villages. Setting up in the local palace/town hall we hurry to unload the vehicle and

prepare to take the children. Usually when we are just starting in a village there are lots of women waiting for us to arrive. Once the women register their children they proceed to an interviewer where they are given a questionnaire, the child's height and weight are taken and then come the bloods. It sounds worse than it is but if you are a child under five it's a good reason to exercise your lungs! We take a finger prick blood sample to make blood smears and undertake a malaria rapid test. Some children take it in their stride and others shout '*I'm dead, I'm dead they've killed me*' or threaten me with their dads. I'm sure I'll be in their nightmares for years to come. Although it's not all bad, after that they get a lolly and go off to see the doctor. After a gruelling day of fieldwork, we head back to the campus to pack the boxes for the next day and fix our faecal samples. Samuel, our collaborator, usually drives us back to the guesthouse in the evening where we get a bite to eat. The food is manageable in the guesthouse but if you get a chance to eat outside you'd be amazed at the difference. Samuel's pounded yam is delicious.

Nigeria has quite a bad reputation. Prior to my first trip, the only nice comments I heard about the country came from Nigerians! Having just come back from my third trip I can say that it's a great place to work. Even though there are some fragments of truth in what people say, Nigeria has a lot to offer. The people are remarkable. They are strong, resilient, kind and very welcoming. The weather is incredible, brilliant sunshine one minute and vigorous rain the next. Animals of all sorts just outside the front door,



Women and children attending field assessments in Moro.

a praying mantis called the African flower being most impressive. Everything is so vibrant, you know you're alive. It's striking to see how we, as westerns, have become so removed from nature and interesting to contemplate the consequences of that shift.

Getting back to the science, presently we are examining the relationship between geohelminths and malaria in children from 12 to 60 months. Previous studies have suggested that worms can change the host's immune response to HIV and TB which can increase the susceptibility and spread of these diseases in the developing world. Recently it has been suggested that there is a similar association with worms and malaria. We are looking to see how deworming children can affect their malarial status. We think that children in the treatment group will suffer fewer malaria attacks than children in the control group who are receiving no treatment for their worm infections. As you all know malaria is a huge killer disease. Every year, between 700,000 and 2.7 million people die from malaria, over 75% of them are African children. If worms make people more susceptible to malaria, treating people for their worm infections would be a cheap effective method to roll back malaria. We have started fundraising to buy mosquito nets for the families we are working with in the villages. We are hoping to raise about €15,000. Last Christmas ('05) the zoology department held a tea morning which raised €2000 and this year we have made greeting cards using pictures that were



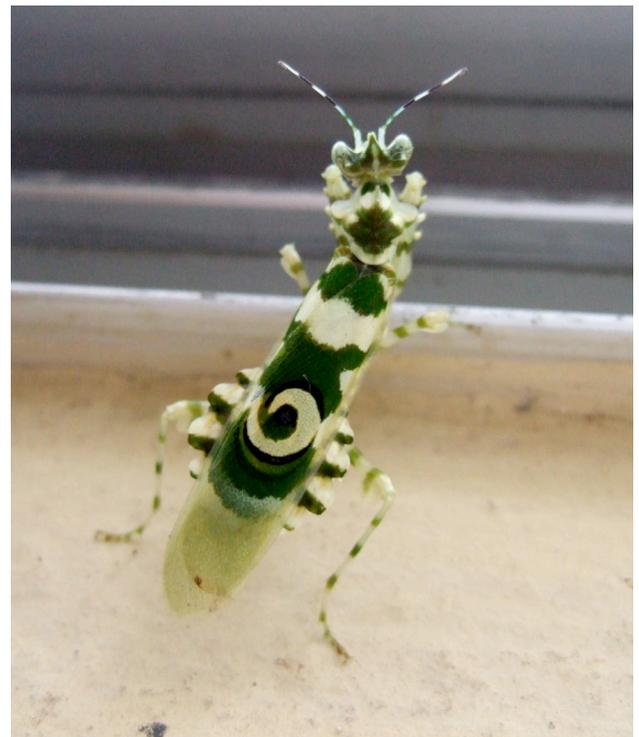
Some of the team of fieldworkers

taken during fieldwork, which will hopefully raise €1000.

We have also received donations from the running club in Trinity, schools and businesses. You can donate money by either sending a cheque, made out to **Ife Clinics Fundraising '06/'07** to Ife Clinics, c/o Patrick Kirwan and/or Prof. Celia Holland, Parasitology Research Group, Department of Zoology, Trinity College Dublin, Dublin 2, or lodging money into the Ife Clinic's Fundraising account at the Bank of Ireland (Account no. 27664907; Bank Sort Code 90-00-17). If you have any questions about the study or donating money please email me at kirwanpa@tcd.ie



Dr Abiona consulting with a mother and child



Praying Mantis – African Flower

REUNION



Some of the graduates who visited the Department during 2006, meeting up with Frank Jeal and Martyn Linnie. In the photo (from left to right) are Frank, Myles Parker, Mark Holmes, Alec Elliott, Daphne (nee) Purdue, Erica Brandt and Martyn.

As part of a wider College Alumni get-together, Zoology had its own reunion for some eminent graduates from the '60s and '70s. Among this group was Peter Norton, who sends his recollections (below) of Zoology as it was in his day. As his article states, Peter is now with the Norfolk Museums Service and readers are welcome to follow this up at www.comucopia.org.uk/html/search/verb/GetRecord/7433

Also in 2006 we had a visitor from Australia, Donal Mullen, who was Prof. Grainger's Research Assistant in the '60s, so it can be seen that the attachment to Zoology is extremely persistent!

Thanks especially to Frank and Martyn for organising the welcome and the subsequent tour around the Department.

REMEMBERING ZOOLOGY NINETEEN-SIXTY-ONE

There were Peter Davies, Peter Norton, Clare McClenaghan, Val Poynton, Sidney Baker, old Uncle Dave Griffiths and all. We had the Honours lab one flight up the stairs. The big museum went up from ground floor to roof, one room. In it were all sorts of exhibits, most of which are still in the Department somewhere, some we liked and cherished, some we learned from and some we wanted to see no more of. *"In case of fire in the museum, throw the Lion Cubs 1 day old into the middle of it, and leave by the nearest exit"* was an unwritten fire regulation passed down to us. In the top floor of the recently flatted, western, part of the museum, were the Geneticists.

On the middle floor were the Honours lab, the Professor, and in the back of the building the original stairs, the library, and Dr Howie. I think a research lab, too. Ground floor housed the Museum, the entrance lobby, Dr Goodhue's room and Douglas Glen the Lab Steward, who ran the place on a shoestring and in his very own particular way. He once found we were short of slides of bed bugs for our 1st professional class (the medics, dentists, biologists and agriculturists). He advertised in the newspapers for specimens. Days later his advert was

'sent up' by the columnist Myles na Gopaleen. "It's very bad for business, Professor, sir" he complained to Professor Grainger. Beyond his office was a teaching laboratory used by the combined 2nd year/Junior Honours Class, and down some steps a large one for the 1st year. Off this level opened the rooms of the other member of the teaching staff, Dr Powell. Each lecturer dealt perforce with a huge sector of the curriculum.

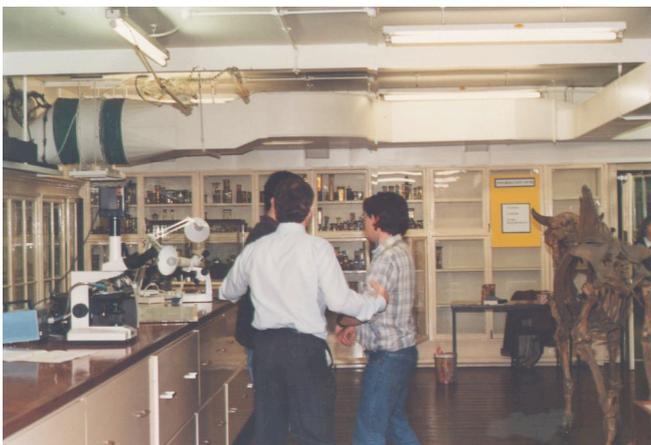
Below were the cellars, full of all kinds of good and bad and indifferent specimens and artefacts. Mr Glen's darkroom too was there, where he practised his hocus-pocus photography. If the plate or print was not developing quickly enough, for example, he might heat it over a bunsen, and get excellent results. In a modest lean-to dwelt the doyen of the department, Professor (retired) Brontë Gatenby, the author among much else, of the *Microtomist's Vade Mecum*. By 1960 he had become something of a recluse, but the legends of him were abundant. He would go on lecture tours in the USA and come home with a satchel-full of offers of grants, which he never took up. Occasionally he would give a seminar. His idiom was rooted in the 1930's. He would refer to the

creatures of the depths of the oceans, particularly cephalopods, as 'covered all over with coloured photoluminescent organs, like the lights round Gin Palaces, moving through the blackness of the abyss.' Soon after he was to die of a heart attack while out swimming.

Outside the building was the yard, the haunt of Hermione, the Physiology Department's pensioned-off experimental cat, through her fur you could feel her to be covered in rows of stitches. In it wandered a superfluous tortoise, left over from a dissection class, until when he hadn't moved for several months I investigated and found him to be dead. On my study bookcase I still have the carapace and plastron from which I extracted his soft parts, dehydrated the shell through alcohol baths and cleared it in real turpentine.

This was the place of the burning of midnight oil, well, waste alcohol in a bench spirit lamp, as we worked for our finals. We are mostly still in touch. Dave went to the Department of Fisheries, Peter D to the University of Nottingham, Sid married him, I to Cambridge Botany School and then Glasgow University Zoology Dept, Claire is now an EC researcher on dodgy chemicals, Val is out in rural Ireland, believed farming.

Nowadays, retired after 23 years in the Clergy, I document early Pleistocene fossil molluscs for the Norfolk Museums Service. As I do so my mind wanders from my records in the recesses of the MODES database to where, with a bit of a push from Bill Watts in the Botany School, it all began, D.U. Zoology Department, 1961.



THE ZOOLOGY MUSEUM

Generations of Zoology students will have memories (fond or otherwise) of the museum – venue for practical classes, exams, quiet meetings behind the cold room and even the occasional end-of-term party. Once three stories high and the length of the building, it was chopped, reduced and the collection culled over the years as offices and labs were carved out of its space. By the 1980s (photo above) it occupied no more than a half of the first floor. But for a building which holds so many memories, very few photographs exist to remind us of what it really looked like in the past. If anyone out there has any photographs taken in the building during their time as a student, we would be very grateful for copies for the archives. Eds.

NEW BLOOD.....

Four new post-graduates started this year; Andrew Byrne (IRCSET award), working with Mark Brown, Christina Dold (SFI grant) and Sile Molloy (IRCSET grant) with Celia Holland, Emma Dooley (SFI award) with Celia Holland and Russell Poole, Dierdre Lynch (Marine Institute) with Jim Wilson and Jorge Molinos (TCD grant) with Ian Donohue.

Zoology is looking for two new Lecturing staff (see advert at

http://www.naturalscience.tcd.ie/new_positions/Zool%20lectureships%20further%20part.pdf)

so please pass the notice on to any colleagues you think may be interested, and this should boost our research capacity even further. By this time next year, they should be in place and we can bring you an update then.

...AND SOME MONEY TOO

Zoology continued to be very successful in attracting funding, with Celia Holland in particular being very successful (maybe being Head of Department agreed with her). Among her awards in the past year have been grants from EC INTAS to work on the seabird and mussel parasite system in the White sea with collaborators from Murmansk and St, Petersburg; a grant from the HRB to extend her work with parasites in Africa (see also Paddy Kirwan's article this issue); and another SFI grant to look at a mouse model for nematode infection.

RESEARCH SEMINARS

Following on from the very successful post-graduate meetings in 2005 and 2006, the 2007 Symposium will be held on 14-15 March 2007. All are welcome to attend and a detailed list of the presentations will be available shortly from the organisers (contact Andrew Byrne, Emma Dooley or Chris Summerhurst).

In addition, there was a popular series of seminars in Michaelmas term, including one from Clare Hamilton (ex-Zoology TCD now of DCU) and also from two of the current Departmental Post-Doctoral fellows, Eugenie Regan and John O'Brien. Thanks to Mark Brown for his work in organising these, and he is always delighted to get offers of seminars from graduates for future occasions.

CONGRATULATIONS...

In the 'Hatches & Matches' category since the last edition of **auktalk**, congratulations go to:

Richard and Michelle on the birth of **George Sidney Hollinshead**

Eamonn and Suzanne (Borich) on the birth of **Aidan Conor Gormley**

Conor Nolan and Jenny Fuller, now Mr and Mrs;

Meanwhile, celebrating the award of higher degrees were **Peter Stafford** (MA), **Mary Hayes** (PhD), **Ranjit Lewis** (PhD), **Samina Rutrecht** (PhD) and **Clare Hamilton** (PhD) (see photos opposite)

And finally, congratulations to Paddy Frankel for finally making it to the end of his epic cycle (see **auktalk** 2005) and on to the pages of the tabloids in glorious technicolour (see below)



Mary Hayes (PhD) and Peter Stafford (MA) celebrate with family and friends after Peter had been conferred with an MA for 40 years service to the Zoology Department.



Three of our latest graduates, Ranjit Lewis, Samina Rutrecht and Claire Hamilton, having just received their PhDs.



Paddy Frankel relaxes with friends after his epic Dublin to Cape Town charity bike ride in aid of Oxfam.



MERRY CHRISTMAS AND ALL THE BEST FOR 2007...

It's the festive season and we in Zoology have tried to foster the Xmas spirit. In early December our new entrance hall was graced by a splendidly-decorated tree, and the occasion was marked with the traditional (two-year old) ceremony – involving mince pies and Peter's 'secret recipe' punch (see opposite). A good way to round off another successful year.