

# The Timothy Bailey Trust

2006 Newsletter

The Timothy Bailey Trust was setup in memory of Timothy Bailey, a biology graduate of Christ Church, Oxford. It aims to provide financial support to students of Oxford University to assist them in undertaking any extra-curricular project or expedition relating to the biological sciences. The Timothy Bailey Trust and its Fund is administered by the Trustees: Professor Sarah Randolph, Dr Mark Bailey, Mr Greg Payne. For more information, please visit the Trust website at <http://www.timothybailey.com/>

## Conservation Comoros 2005



**Ask most people to find the Comoros on a world map and a puzzled expression will spread across their face.** Look carefully, however, at the expanse of Indian Ocean between Madagascar and Mozambique, and you will see a few specks of land. These are the remote Comoro Islands, formerly a French colony and more recently the focus of a conservation expedition led by five students from Oxford University.

"I will never forget my first view of the Comoros" says Hugh Doulton, team leader of Conservation Comoros 2005 and Biological Sciences student. "I flew to the largest of the islands, Grand Comore, for a reconnaissance trip in April 2005. It's dominated by the world's widest volcano, Mount Karthala, which towers into the skyline. The population of 293,000 live in the capital Moroni or small villages dotted around the side of the volcano. They continue to eat into what remains of the forest, pushing the boundary higher and higher up the mountain slopes".

Conservation Comoros 2005 arose out of the Oxford University Comoro Islands Butterfly Surveys led by Dr Owen Lewis in 1992 and 1994. In an effort to address wider conservation issues and to bring lasting benefits to the local inhabitants, Hugh and his team decided to expand the scope of their project to include bird research, socio-economic research and environmental awareness work. A compelling application for funding resulted in The Timothy Bailey Trust awarding a grant of £500 towards the cost of the project.

Returning to the Comoros with Hugh in June 2005 were Charles Marsh, Anneke Newman, Katie Bird and Mark Bell. For the next 10 weeks, they trekked up and down the mountain slopes of Grand Comore and the neighbouring island of Anjouan, recording essential data about habitat and animal diversity. They

were welcomed and supported by a network of local NGOs, university professors and government and UN officials.

The Conservation Comoros team worked closely with local village communities to understand their impact upon the ever-diminishing forests, the causes of deforestation and potential solutions to the problems faced. Open village meetings were used to present findings and to raise awareness of the urgent need for conservation activities.

"The people currently have no other option but to cut down the forest for firewood and timber or to create new fields," says Hugh. "This is threatening not only the biodiversity of the Comoros, but also the livelihoods of the people themselves through the loss of many ecosystem

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Moroni, Grand Comore

services. There were around 50 rivers in Anjouan in the 1920s, now there are less than ten."



Team Conservation Comores

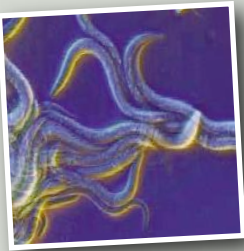
The team also recorded over 16 hours of video footage in order to produce two 30-minute films about the Comoro Islands, including interviews with local political and religious figures. These films will be used locally to raise awareness of the environmental problems that require urgent attention. Press conferences were also organised on both islands, using the media to spread the conservation message and to ensure a comprehensive understanding of the project's goals.

"I think the expedition was a great start. I'm now looking at organising a much longer-term project with a few academics from Oxford University," says Hugh. "The grand aim will be to conserve the bio-diversity of the Comoros whilst ensuring sustainable livelihoods for the local population. Of course it will not be an easy road, but the partners we have made and the groundwork that we have been able to put in on the expedition will stand our efforts in good stead."

## It's a Worm's World

**Measuring only 1mm in length, the roundworm *Caenorhabditis elegans* is a miracle of nature.**

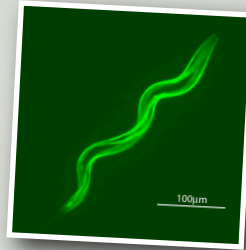
"*C. elegans* has been a powerful model organism for the study of development, neurobiology and aging since the 1960s." says Maria Demidova, a biology student from Hertford College, University of Oxford. "In recent years, it has also emerged as a model system of host-pathogen interaction and immunity."



During the summer of 2005, Maria worked in the Genetics Unit,

Biochemistry Department to investigate how the worm mounts a number of innovative protective responses to a variety of fungal and bacterial pathogens. Under the supervision of Dr Delia O'Rourke and Professor Jonathan Hodgkin, Maria studied *C. elegans* immunity genes through RNAi silencing, a scientific technique where the function of a particular gene is reduced. The effect this had on the worm's sensitivity to infection could then be used to infer the role this gene plays in host defence. The Timothy Bailey Trust awarded a grant of £500 towards the cost of the project enabling Maria to study in Oxford during the summer and further her dream.

Maria gained valuable experience in handling *C. elegans* as well as a variety of genetic and molecular biology tools such as fluorescence microscopy and genome sequence databases. Her work forms part of a paper about the discovery of worm immunity genes which will soon be published in the journal *Genome Research*.



"This project has given me a taste of real research and has made me more determined to realise my goal of a scientific career." says Maria. "Furthermore, our discoveries about how the worm is able to defend itself from infection may lead to medical applications in the future."

## 2006 Awards

Sarah Outen from St Hugh's College, Oxford was awarded £500 for her research with basking sharks in the Hebrides. She will be working on the Hebridean Whale and Dolphin Trust's research vessel, *Silurian*, to characterise zooplankton and note sea-surface temperatures in the presence of surface-feeding basking sharks. These gentle yet awesome creatures are protected within UK waters but are exploited in other parts of the world. Sarah's data will provide a baseline for further studies and contribute towards future conservation strategies.



Katherine Drayson from St Hugh's College, Oxford was awarded £500 for her research on insect bio-diversity in Honduras. She will be working with other scientists to catalogue the diversity of the Cusuco National Park in Honduras, a region of undamaged cloud forest that has yielded nine species new to science. The data collected will be used to determine how insect communities respond to disturbance in habitat types and how this relates to the diversity of different taxonomic groups.

For more information, please visit The Timothy Bailey Trust website at <http://www.timothybailey.com>