



Scho 330

DARWIN INITIATIVE

APPLICATION FOR DARWIN SCHOLARSHIP PROGRAMME 2004

Please read the Guidance Notes before completing this form. Give a full answer to each section; applications will be considered on the basis of information submitted on this form. Please note the additional information requirements (CVs and letters of support as detailed in the Guidance for Applicants). Whilst this form is to be submitted by the host institution the proposed Scholar should be fully involved in development of the proposal.

Submit by 12 March 2004

1. Contact Details

<i>Ref. (Defra/ECTF only):</i>
Name and address of UK applicant organisation Royal Botanic Garden Edinburgh 20A Inverleith Row Edinburgh, EH3 5LR

2. Darwin Scholar. A one page CV must be enclosed.

Name and official address of proposed Darwin Scholar Reynaldo Linares Palomino Herbario MOL-Forestales, Facultad de Ciencias Forestales Universidad Nacional Agraria La Molina, Av. La Universidad s/n LIMA 12, PERU

3. Project summary (no more than 100 words)

The project aims at raising the awareness in Peru of a non-Amazonian ecosystem, seasonally dry tropical forests, which although severely threatened, has received little attention from the scientific and conservation communities. It will use bibliographic and herbarium resources in the UK to build the first floristic checklist for the woody species of these forests in Peru, an essential tool to facilitate biodiversity inventories. A short field period in Peru will be necessary to survey the remaining dry forest patches in the upper Huallaga River valley, which have never been subject to inventory.

4. Principals in Project. Please give the details of the individuals from the UK host organisations (and other institutions if relevant) who would be directly involved in supervising/working with the Darwin Scholar. A 1 page CV on each must be enclosed.

Details	Main UK expert	Other UK expert	Other UK expert	Other UK expert
Surname	Pennington	Ratter	Pennington	Hughes
Forename(s)	R. Toby	James A.	Terence D.	Colin

Post held	Co-ordinator, Systematics and Evolution	Research associate	Hon. Research Fellow	Royal Society University Research Fellow
Institution (if different to above)			Royal Botanic Gardens, Kew	University of Oxford
Department	Science	Science	Herbarium	Plant Sciences
Telephone				
Fax				
Email				

5. Describe briefly the aims, activities and achievements of the UK applicant organisation. (Large institutions please note that this should describe your unit or department)

Aims: RBGE's mission is to explore and explain the world of plants through programmes of scientific research, horticulture, conservation and education.

Activities: RBGE carries out an international programme of research in plant taxonomy, systematics and conservation in more than forty countries and maintains and develops living and preserved plant collections.

Achievements: Tropical botanists at the Royal Botanic Garden Edinburgh (RBGE) have extensive expertise in South American botany and taxonomic capacity building, most recently in Brazil and Peru. They have contributed to CBD initiatives such as Global Taxonomy Initiative and Global Strategy for Plant Conservation and are committed to the implementation of the CBD.

6. Describe briefly the aims, activities and achievements of the proposed Darwin Scholar's organisation. (Large institutions please note that this should describe your unit or department)

Aims: The Peruvian National Forest Herbarium (MOL-Forestales) is part of the Department of Forest Management, Faculty of Forest Sciences, Universidad Nacional Agraria La Molina. It aims to promote the conservation and sustainable use of Peruvian forests.

Activities: MOL carries out a research programme of inventory, taxonomy and conservation in Peruvian forests.

Achievements: MOL is a centre where accurate and current information on the identification of Peruvian forest tree specimens can be obtained by Peruvian and international students and researchers. It is a valuable resource in the teaching activities of the Forest Faculty. Work at MOL contributes directly CBD initiatives such as Global Taxonomy Initiative and Global Strategy for Plant Conservation.

7. Describe briefly the proposed Darwin Scholar's current role within their organisation.

Since completing his MSc studies at the University of Edinburgh and Royal Botanic Garden Edinburgh in October 2002, R. Linares Palomino has been an associate researcher at the MOL Herbarium, with research focusing on dry forest ecosystems in northwestern Peru. This association has including lecturing at MSc level.

8. Provide a concept note on the Darwin Scholarship. This should include:

- a clear outline of the aim and objectives of the Scholarship
- the programme of work, including key milestones through the duration of the Scholarship and their timing
- the role of the UK applicant organisation, and others where relevant (including contacts)
- where appropriate, how the Scholarships will contribute towards sustainable development or sustainable livelihoods

The proposed project aims to raise awareness of a highly threatened, but poorly studied non-Amazonian ecosystem: seasonally dry tropical forests. In Peru, these forests are represented by formations in the northern coastal region, Inter Andean valleys and in one area east of the Andes (Tarapoto and the Huallaga valley). Protected areas of dry forest exist only in the coastal area, but there are no conservation areas in the other, more severely threatened stands in Inter Andean and eastern Peru, despite preliminary surveys indicating high levels of species endemism. Critically, little information is available on the floristic composition, structure and ecology of Peruvian seasonally dry forests, which hampers raising their scientific and conservation profile. Three main objectives have been identified in order to address this problem:

1) To produce a checklist of the woody species present in the dry forests of Peru. This will provide a vital tool for biodiversity scientists and conservationists by facilitating accurate naming of species in the field and in Peruvian herbaria. Work carried out on the flora of coastal Peruvian dry forests by the proposed Darwin Scholar for his MSc dissertation demonstrated that the few published inventories of Peruvian dry forests show inconsistent use of synonyms and accepted scientific names (i.e., different names for the same species), rendering the comparison of areas for conservation evaluation impossible. This reflects the relative lack of attention of dry forest vegetation by taxonomists and vegetation scientists, something that this project addresses. Additional and complementary to compiling the checklist, specimens of key dry forest species will be databased, imaged digitally and placed on-line. This will be done using BG-BASE, the database used at MOL, facilitating repatriation to Peru of these data.

2) To survey the vegetation in the valley of the Huallaga River (Tarapoto, Department of San Martin), which has patches of dry forest remnants. Preliminary surveys in this area have provided very different floristic lists, which have been identified as potentially highly distinct from all other neotropical dry forest formations by preliminary biogeographic studies carried out by the proposed Darwin scholar as part of his MSc dissertation. Clearly, thorough floristic inventory in this area is necessary to make conservation recommendations. The outputs of biogeographic analyses aimed at assessing the significance of these forests within Peru will be supplied to local and national, private and state conservation organizations, which are aiming at declaring part of the area as a conservation area.

3) To quantify levels of endemism of woody species in Peruvian dry forests in order highlight hotspots of endemic species that most merit conservation.

The programme of work would be as follows:

Sept – Oct 2004: Field work in the Huallaga River valley, collection of vouchers and preliminary identification at MOL, Lima Peru. Feedback with local conservation organizations. Milestones: Quantitative inventory data; establish dialogue with local conservation organisations.

Nov – Dec 2004: Herbarium work at RBG Edinburgh, identifying collected vouchers. Start of bibliographic research for checklist (compilation of species list from all published floristic inventories in Peru, and checking for synonyms using bibliographic sources). Milestones: c. 60% of vouchers identified; synonyms identified in published inventories.

Jan – Feb 2005: Herbarium work at RBG Kew, identifying collected vouchers. Milestone: full identification of vouchers.

Mar – May 2005: Bibliographic work at RBG Edinburgh gathering information to annotate the checklist (for each species: life form, distribution in Peru, total distribution). Phytogeographic analysis of Huallaga Valley inventories and analysis of endemism of other areas. Milestones: checklist annotated; phytogeographic and endemism analysis complete.

Jun – Aug 2005: Final Report. Publish checklist. Submit phytogeographic and endemism study to peer-review journal.

The role of the RBG Edinburgh will be to provide working facilities (herbarium, library) for the proposed scholar during the time of the Scholarship in the UK. The UK experts at RBG Edinburgh collectively have 50 years of experience working in seasonal vegetation in the neotropics, and RBG Edinburgh's library and herbarium is rich in bibliographic sources and specimens for species inhabiting this vegetation. A visit to RBG Kew is necessary because its Peruvian collections are in some cases richer than those at RBG Edinburgh. The proposed scholar will be hosted by Terence Pennington, the foremost expert in the UK on the Peruvian flora, and participant in the recent Darwin project in Peru (09/017). Whilst at Kew, the scholar will also work with Colin Hughes (University of Oxford) to facilitate exchange of data, information and ideas on Andean dry forest endemics and conservation arising from the current Darwin-funded project in neighbouring Bolivia ('Plant Endemism of the Central Andean Valleys of Bolivia'). Additional specimen data for dry forest species from recent collecting work in Peru is also available in Oxford. In Peru, the MOL Herbarium will provide working space and facilities. Additionally, while doing fieldwork in the Huallaga valley contact and collaboration has been arranged with local Institutions (Marco Leon from the Asociación de Municipalidades de San Martin).

It is hoped that this project will eventually contribute to sustainable development and livelihoods via conservation of more dry forest areas in Peru. Peruvian dry forests are generally close to population centres and are used by local people, particularly as sources of firewood. Severe destruction is caused by conversion to pasture and industrial production of

charcoal, but these uses do not greatly benefit local communities.

9. Legacy. Provide information on how the Darwin Scholar will utilise, promote and disseminate the benefits of the Scholarship on return to his/her home country. Will a strategy be developed during the Scholarship to ensure this is achieved?

Results will be presented not only as written reports and peer-reviewed papers in international journals, but also in the form of teaching and workshops for students and researchers at the San Martin (Tarapoto) and La Molina (Lima) Universities. The proposed Darwin scholar is already programmed to provide a course to undergraduates as part of the (submitted) Darwin post-project funding proposal "Tree diversity, re-forestation and agroforestry development in Andean Peru" (Royal Botanic Garden Edinburgh). This proposal and the proposed post-project are complementary in raising the profile of two forest ecosystems in Peru which are neglected in comparison to the Amazonian rain forest.

10. How will the Scholarship assist the Scholar's organisation and/or local communities and/or home country in working towards the objectives (or implementation) of the Convention on Biological Diversity? References to the Convention should be specific, for example, by referring to articles, cross-cutting or thematic issues¹.

Identification and monitoring of valuable native dry forest tree species (Article 7); Improvement to the capacity of MOL and Peru to carry out future forest biodiversity surveys in dry forests (Article 7/8/9)

Training of local people through technical and scientific collaboration (Article 12/18); Carrying out research on a threatened dry forest ecosystem (Article 12).

Repatriation of dry forest species specimen data from the UK (Article 17)

Strengthening of collaborative bonds between research institutions in Peru and the UK (Article 18)

Education of students at MOL and Universidad de San Martin on dry forests (Programme of Public Education and Awareness)

Decreasing the loss of plant diversity in dry forests in Peru (Global Strategy for Plant Conservation)

Increasing knowledge on the taxonomy, diversity and distribution of poorly known species and ecosystems (Forest Biodiversity, Global Taxonomy Initiative).

Assessing the information on status of dry and sub-humid land biodiversity and impacts of its loss (Dry and Sub-humid lands biodiversity)

11. What collaboration has there been with the Darwin Scholar to date in developing the proposal, and what collaboration is planned for the duration of the Scholarship? Where relevant, describe any consultation or collaboration by the proposed Scholar within his/her own country.

The present proposal is a combined initiative of the proposed Scholar, the MOL Herbarium and the host Institution. While developing the proposal, researchers in the Huallaga region have been contacted and consulted about general conditions in the planned survey area, as well as about possible collaboration during or after the Scholarship (Marco Leon, from the Regional Municipalities Association; the Instituto de Investigaciones de la Amazonia Peruana Office in Tarapoto).

During the development of the Scholarship, ongoing feedback between UK and Peruvian researchers is expected, especially during the phase in which collected plant specimens have to be identified. Here, the collaboration of several experts is necessary.

12. Provide details of the Darwin Initiative project that the proposed Scholar was involved in, including his/her role in that project and any ongoing involvement.

¹ Refer to the Guidance Notes for Applicants for further information

Darwin-funded MSc Student at the RBG Edinburgh in Darwin Project 09/017 "Tree Diversity and Agroforestry Development in the Peruvian Amazon". The work proposed for the present scholarship arises directly from the thesis research carried out by the proposed Scholar during his MSc studies. His thesis "the phytogeography of the seasonally dry tropical forests in Equatorial Pacific South America" indicated a high degree of synonymy in published floristic inventories of Peruvian seasonally dry forests, meaning that it is impossible to compare directly any pair of species lists because different names are used for the same species. This highlights the need for the floristic checklist proposed here that uses correct, nomenclaturally accepted scientific names and identifies synonyms. Preliminary phytogeographic analyses carried out as part of the same MSc project highlighted the possibility that dry forests in the Huallaga valley region are floristically unique in Peru, and perhaps in the entire Neotropics. This demonstrates the need for the inventory data suggested here because no dry forest in this region has formal conservation status. It also underscores the necessity of the quantitative analysis of endemism in different areas of Peruvian dry forest that will be carried out as part of this proposal.

13. Duration of the Scholarship: what is the intended start and finish date.

September 2004 - August 2005

14. Where will the Darwin Scholar be based? Please be specific with organisational details and dates (where more than one location).

Sep - Oct 2004: MOL - Herbarium, Lima, Peru

Nov - Dec 2004: RBG Edinburgh. UK

Jan - Feb 2005: RBG Kew, UK

Mar - Aug 2005: RBG Edinburgh, UK

15. Financial Aspects.

Scholar payment			
London: £1200/month	Number of months 2	2004/5 £2,400.00	2005/6 £
UK (outside London): £1000/month	Number of months 8	£3,000.00	£5,000.00
Overseas location £840.00/month*	Number of months 2	£1,680.00	£
Host Organisations' costs			
UK: £200/month	Number of months	2004/5 £	2005/6 £
Overseas location: £/month*	Number of months		£
A. Total Scholar & Host Organisation Costs		£	£

Actual travel costs		
Return airfare. <i>Details</i> Lima-Edinburgh-Lima Economy airfare	2004/5 £	2005/6 £
Travel Edinburgh - Kew and Oxford		
Travel to/from airports. <i>Details</i> Cieneguilla-Lima-Cieneguilla	£	£

* Figures available from Darwin@defra.gsi.gov.uk

Visas etc. <i>Details</i> One Year Visa Application in Lima	£	£
B. Total Scholarship Travel Costs (Actual costs up to £2000 will be paid)	£	£

TOTAL SCHOLARSHIP COSTS (A + B)	£	£
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16. Other sources of funding: provide details and amounts

No other sources of funding are available.
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FCO NOTIFICATION

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise details of the Darwin Scholarship and the resultant work in the UK or the Darwin Scholar's home country

CERTIFICATION

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

I enclose a copy of the organisation's most recent audited accounts and annual report, CVs for project principals and letters of support.

Name (block capitals)	
Position in the organisation	

Signed

Date:

Please return completed form to The Edinburgh Centre for Tropical Forests (ECTF) by 12 March 2004 by email to darwin-applications@ectf-ed.org.uk. Where it is not possible to send the full application in electronic form (for example if signed references are not available electronically), a hard copy of the full application should also be sent to ECTF, Darwin Applications Unit, Pentland Science Park, Bush Loan, Penicuik, Edinburgh EH26 OPH, UK.