

Darwin Initiative

Half Year Report (due 31 October each year)

PLEASE NOTE: Due to the increased number of reports expected in 2005, we will not be able to confirm receipt of reports but will contact you individually should any questions arise

Project Ref. No.	15/007
Project Title	Focus for Fiji: Insect Inventories for Biodiversity Assessment
Country(ies)	Fiji
UK Organisation	University of Sussex
Collaborator(s)	Prof L Winder, University of the South Pacific
Report date	28 th October 2007
Report No. (HYR 1/2/3/4)	HYR 1 (Year 1)
Project website	N/A

1. Outline progress over the last 6 months (April – September) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up).

Achievements April-September, 2007

Education & Outreach activities:

(i) Launch of guidebook '*Butterflies of the Fiji Islands*' by Sunil Prasad and Hilda Waqa, both Senior Curators in the Darwin project team. This guidebook was launched at the Fiji Museum (the national museum) on Friday 5th October by Dr 'Ana Taufeu'ulungaki (Acting Vice Chancellor), University of the South Pacific (USP). The guidebook is the first Fiji-insect guide ever produced and describes the 47 species recorded. The guide is in full colour and was a collaboration between the Fiji Museum and USP. The Darwin Initiative is fully acknowledged as a major sponsor. As a result of this collaborative project, there is now a possibility of developing a 'Darwin Initiative Biodiversity Gallery' within the national museum. Currently there is a temporary Darwin Initiative exhibit in the main gallery of the museum as part of the book launch.



Sunil Prasad, Hilda Waqa and 'Ana Taufeu'ulungaki (centre) at book launch

(ii) A TV interview featuring Hilda Waqa on the cultural significance of the giant Fijian long-horned beetle, *Xixuthrus heros* was aired on the national Fiji One TV programme – 'Noda Gauna'

(iii) Two articles, one on the studies of the giant Fijian long-horned beetle and another on the general status of insect studies in Fiji was recently published on Melanesian Geo, Issue # 5. This can be accessed online: www.melanesiangeo.org.

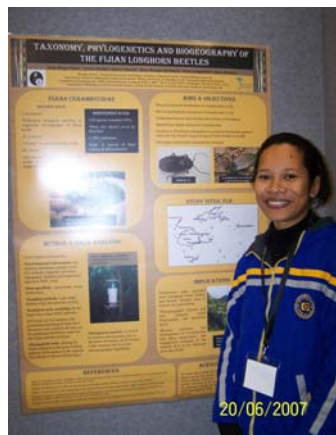
(iv) Display at USP's annual Open Day which attracts thousands of school children. The Darwin team prepared and manned a display at this important event highlighting the biodiversity of insects and providing information on conservation organisations working within the Fiji Islands.



Sunil Prasad and others at USP 2007 Open Day

(v) Awareness (posters and displays) for the general public on the ecological significance of insects to forest ecosystems- Arbor Day. This was a programme organized by the Fiji Forestry Department as part of an awareness raising exercise for students on the importance of watershed systems during the Arbor Week celebrations. A brief overview of this days' programme also highlighting the section on entomology was published in the local paper, "Kaila".

(vi) A poster was presented by Hilda Waqa in the EVOLUTION 2007 conference held in New Zealand from the 17th-20th June that highlighted the Darwin project and survey work to be conducted. Conference attendance was supported by USP and Massey University, New Zealand and represented 'added value' to the project.



Hilda Waqa at Evolution 2007

(vii) Three of the giant Fijian long-horned beetles (*Xixuthrus heros*, *X. ganglbaueri*, *X. terribilis*) have recently been included into Fiji's National Protection list based on their rarity and potential vulnerability to extinction after a submission made by the Darwin team.



Xixuthrus specimen, part of Darwin Initiative display currently in Fiji Museum

Training

(i) Coleoptera (beetles) taxonomy training workshop by Darren Mann (Hope Entomology Department, Oxford University Museum, UK). The training was conducted from the 24th July – 3rd August and was attended by Hilda Waqa, Sunil Prasad, two from the Wildlife Conservation Society and one from the government Forestry Department. It included field training that was carried out at Monasavu (cloud forest in the interior of Viti Levu) focussing on sampling techniques for specific insect taxa. Laboratory work included using keys and identifying down to family level specimens collected during the field work. This proved to be a successful training exercise as it allowed participants (from USP, Forestry Department, Wildlife Conservation Society) to gain an appreciation of how difficult it is to go through a key when identifying specimens and most importantly to develop their skills in doing so.

(ii) Hilda Waqa has now registered for a PhD at USP. She was trained in insect molecular techniques at Massey University, New Zealand from the 5th- 16th July. The training included DNA extractions, gel electrophoresis and PCR protocols specifically for the family Cerambycidae (long-horned beetles). This was provided by Massey University, New Zealand and represents ‘added value’ to the initial project. Molecular techniques are likely to be vital in the identification of beetle larvae during the study as a ‘barcoding’ exercise.

(iii) UK visit- Hilda Waqa received six weeks of intensive training in entomology in the UK. The first week (20th-24th August) was held in Cardiff Museum, Wales under the supervision of Dr. Mike Wilson. Entomological skills such as transilluminator imaging, auto-montage photography, data-basing and genitalia dissection were learnt. Also, Fijian Hemiptera specimens (previously collected by the NSF- Fiji project using Malaise traps) were sorted to particular target taxa and also by island. Early results suggest some important patterns in island occupancy by different taxa. Training in weeks 2-4 (27th August- 14th September) was held in the Hope Entomology Department at Oxford University Museum, UK under the supervision of Darren Mann (Curator). This included building a database of the taxonomy and distribution of the Fijian Cerambycidae (from reviewing published literature and the recent checklist published by the Bishop Museum, Hawaii) and visiting the Natural History Museum in London on several occasions to borrow Fijian specimens for photographing for reference identification. Altogether 50 species were successfully imaged (edited using Adobe Photoshop). Type specimens of the Fijian fauna have been borrowed from the Bishop Museum, Hawaii; these will also be imaged and added to the database. Curatorial techniques for Coleoptera including genitalia dissection and preparation, drying, mounting and labelling techniques were also taught. Collections, storage facilities and maintenance of collections were also shown. Hilda also conducted a general literature search on the diversity, distribution patterns, phylogenetics and island biogeography of tropical Coleoptera. Week 5 (17th- 21st September) involved a visit to the University of South Bohemia, Czech Republic to meet with Prof. Vojtech Novotny and his team of researchers (linking with Alan Stewart’s other Darwin project, 15/054, based in Papua New Guinea). The purpose was for Hilda to see and discuss the work that Novotny’s group have been doing on host-specificity in cerambycids and other bark beetles, which use standardised freshly cut timber baits left in the forest for colonisation by wood-boring insects. The intention is to carry out similar experiments at one of the Fiji study sites (in lowland rainforest at Savura) for comparison with work by Novotny’s team currently underway in PNG, Panama, Czech Republic and Bolivia. Week 6 (24th- 28th September) held at the University of Sussex, UK involved training in multivariate statistics such as CANOCO and PcOrd under the guidance of ecologist/statistician Naomi Ewald. Hilda and the Project Leader (Alan Stewart) were able to conduct a review and discuss plans for future work on the project, including equipments needs, survey sites and dates and completion of the Darwin team. A discussion with Dr. Mika Peck (Sussex University), who is currently leading a Darwin funded project in Ecuador on Primate Conservation (PRIMENET) was useful for comparing experiences, problems, solutions and general approaches. Hilda also had the opportunity to meet Prof. Alfried Vogler (Imperial College/ Natural History Museum, London) to discuss the molecular side of her PhD project; he has expressed interest in being involved in the project.

Surveys, Collections, Equipment & Research team

(i) General entomological surveys have been done for Nakobalevu, Colo-i-suva, Monasavu and the Northern Lau group. Specimens are currently being sorted (to order and then to family for the majority of the taxa and to species for butterflies), mounted and labelled with the help of a parataxonomist, Lola Naulu (originally from Lau- one of the islands being surveyed). Ms Lola will also assist with planning

survey logistics and databasing, with the help of Akanasi Cagi (WCS), who also has experience with entomological work. Plans are also underway to involve technical assistance from the government Forestry department and the Agriculture department on the project.

(ii) Commissioning and delivery of locally made entomological cabinet (12 drawers; see below); another two such cabinets have also been ordered.



(iii) Purchase and delivery of six malaise traps, a new microscope with camera (sourced from UK Meiji supplier), and other standard entomological supplies (pins, cabinet trays, whirl packs etc.). Flight intercept traps and window intercept traps are being made for the forthcoming surveys.

(iv) Finalisation of Darwin Project Team. We have now completed our project team as identified in the project proposal. The team is as follows (with affiliations):

Senior Curators: Hilda Waqa (USP), Akanasi Cagi (WCS), Presly Dovo (Dept of Forestry, Vanuatu, with starting date of Jan 2008 at the latest following release from work with unpaid leave).

Technicians: Insitute of Applied Sciences (USP), Department of Forestry (Fiji Government) and Korinivia Research Station (Fiji Government) will each contribute to the technical team. Forestry and Korinivia staff (Lusiana and Anare) will be on day release from their employees; IAS technician (appointment pending) will contribute 50% of his/her time.

Parataxonomists: Tokasaya, Sakanesa and Lola Naulu identified as 'permanent' parataxonomists who will assist on field trips and with sorting activities. Training will be given as required. The other two positions will be 'community assistants' and appointed for each survey from the local community (village) to develop outreach and awareness activities.

2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

1. Delay of fieldwork. We are behind schedule with the programme of field surveys. This is a consequence of the delay in recruiting suitable staff and also the effects of the military coup in December 2006, which unfortunately delayed initial project start-up due to travel advisories being issued from the Foreign and Commonwealth Office (the position in Fiji has now returned to being very stable and safe). This delayed initial meetings between Alan Stewart and the project team and has had a knock-on effect throughout the project. We have conducted a full survey at Monosavu (outlined above) and also additional survey work in the Lau Islands (some of which have been surveyed for the first time). Following discussions within the project team, the programme of field work has been reformulated. The time scale is summarised below, on the basis of completing two surveys per month. We are confident that this is achievable.

Island	Sites	Survey dates
Taveuni	Mt. Devo	3 rd -14 th Dec
Lau	Vanua Balavu	17 th -28 th Dec
Kadavu	Solodamu	31 st Dec- 11 th Jan 08
Yasawa	Tamasua	14 th - 25 th Jan 08
Vanua Levu	Natewa	Feb 08
	Mt. Delaikoro	Feb 08
Viti Levu	Abaca/	Mar 08
	Savura/ Nakobalevu	Mar 08
Gau	Mt. Delaco	April 08

2. Sunil Prasad. We appointed Sunil at the start of the project after he completed an entomological Masters degree. He contributed to important aspects of the project (e.g. the butterfly guidebook) and other outreach activities but concerns were raised about his commitment to the project and in particular his ability to meet deadlines and follow instructions from the project team. Consequently, after consultation with UK and Fiji-based project members, it was decided not to continue his contract when it came up for renewal in September 2007. For this reason, it was also decided that he should not attend the training sessions in the UK because it was judged not to be an appropriate use of Darwin Initiative funds if he was no longer to be involved in the project. A replacement for Sunil is current being sought.

Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?

No.

Discussed with the DI Secretariat: no/yes, in..... (month/yr)

Changes to the project schedule/workplan: no/yes, in.....(month/yr)

3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures? No

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.

Please send your **completed form by 31 October each year per email** to Stefanie Halfmann, Darwin Initiative M&E Programme, stefanie.halfmann@ed.ac.uk. The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message.**