



BUILDING CAPACITY FOR PLANT BIODIVERSITY, INVENTORY AND CONSERVATION IN NEPAL

A DARWIN INITIATIVE PROJECT



REPORT OF PLANNING MEETING, RBGE, SEPTEMBER 2003

Tuesday 16th September 2003

10.50 Nepalese participants, Prof. Dayananda Bajracharya (DB), Prof. Krishna Kumar Shrestha (KKS), Dr Keshab Raj Rajbhandari (KRR) and Dr Kayo Devi Yami (KDY) arrive at Edinburgh Airport and met by Dr Mark Watson (MFW). Accommodation for Nepalese participants was in Bed & Breakfast guest houses near the Royal Botanic Garden Edinburgh. MFW handed out delegate packs with local guides, stationery and brochures. Lunch at RBGE staff restaurant, programme for the following day finalised.

14.00 Nepalese participants, Ms Kate Armstrong (Science Division, RBGE) and MFW joined Mr Simon Crutchley (Horticulture Division, RBGE) for a behind-the-scenes tour of the RBGE Nursery, including plants grown from seed he had collected during the ENEP expedition to Nepal in 2001.

15.00 Nepalese participants, KA, SC and MFW headed south for Dawyck Botanic Garden (DBG), one of the three specialist gardens that, with the main garden at Edinburgh, comprise the National Botanic Gardens of Scotland. On arrival at 16.20 the party were met by the Acting Curator*, Mr Graham Stewart, and took refreshment

under beech trees in the late afternoon sun. The Acting Curator took the party on a tour of the Garden whose specialist groups include woody members of the Rosaceae from the Himalayas and China. The group left the Garden at 18.15.

*The Curator, Mr David Knott, had just left for a plant collecting expedition to Japan. He was also a participant on the ENEP expedition and would have liked to join the group, most of whom he had met in Nepal.

18.30 Meeting over dinner at the Prince of India restaurant in Peebles with Graham Stewart joining the group. Depart Peebles at 20.20

21.20 Group arrives back in Edinburgh in time to pick up the hold luggage of KKS (which was delayed in transit).

Wednesday 17th September 2003

9.30 Start of Day 1 of the Darwin Initiative project formal Planning Meeting, Chaired by the Regius Keeper Prof. Stephen Blackmore (SB), attended by Nepalese participants, Dr Henry Noltie (HJN), David Long (DGL) and MFW. During the Planning Meeting KRR circulated copies of the latest issue of the Nepal Flora Implementation Project (NFIP) Newsletter (Volume 5 No. 5, July 2003), and MFW delivered the two laptop computers (Toshiba Satellite Pro, Pentium 4, with Office XP Pro software) to the Nepalese participants. These are 'desktop replacement' machines that will be available for multi-user data input at the Department of Plant Resources (DPR) and Tribhuvan University, Central Department of Botany (TUCDB). The following is a summary of the discussions and decisions made during the Planning Meeting.

Welcome and Resume

SB formally opened the Planning Meeting and welcomed the Nepalese participants. He reiterated RBGE's commitment to working with Nepalese botanists to produce a Flora of Nepal, but added that current staffing constraints were hindering progress. He was hopeful that the current discussions with RBGE's funding body will enable him to appoint at least one new member of staff to work on the Flora of Nepal. SB emphasised that the Darwin Initiative project was not strictly part of the Flora of Nepal project, but that it would lay an important foundation stone for the Flora, and that opportunities during the project could be taken to advance work towards the Flora. All participants agreed that the Darwin Initiative project will make a major contribution to building taxonomic capacity within Nepal and its success will make significant impact on capabilities for floristic research in the medium and long term.

DB emphasised the importance of the Flora of Nepal and agreed that the Darwin Initiative project is separate but complementary to it. He reported that the Nepalese National Conference of Science and Technology, held every 4 or 5 years, would take place in Kathmandu between 23rd-26th March 2004. It will be inaugurated by the Prime Minister and DB invited SB to participate.

MFW gave a brief account of his visit to Kathmandu in June and asked for comments and corrections on the draft report of this visit that was circulated prior to the Planning Meeting (a final version would be circulated on Friday). He gave the Nepalese participants a CD of images taken during this visit.

MFW has registered the web address www.floraofnepal.org for use for the Flora of Nepal and associated projects. At the moment this shows the online version of the ENEP 2001 expedition report, but soon will be developed to contain more information.

Within the last two weeks two significant plant collections of Nepalese herbarium specimens have been received by the RBGE. The first is the personal herbarium of 12000 specimens of Dr Jean-François Dobremez, an ecologist who worked on many of the vegetation maps for Nepal. The second is a specialist collection of 500 grasses and sedges collected by Michel Farille during a 3-month study tour in Nepal in 1981. Duplicates of both these herbarium collections were donated by the collectors to the National Herbarium in Nepal (KATH), and so scientists in Edinburgh and Nepal will be able to work on the same collections. DB praised the quick action of RBGE to acquire these collections and secure their future survival.

A provisional agenda for the Planning Meeting was agreed as a structure for discussion.

Communication Between Project Organisers

MFW reiterated the decision taken in June to conduct routine project business by email exchange, with important information also being sent by fax. However, sometimes email replies are not forthcoming and it is impossible to know whether the emails have been received or not. He requested that if participants cannot reply to an email directly then a short acknowledgement of receipt should be sent pending a later reply. MFW also commented that sometimes confusing messages have been received from Nepal and in future it would be useful to have an indication when an email is a personal comment or if it has the backing of all the Nepalese partners.

Organizing Committee

As stated in the Darwin Initiative Proposal, the principal organisers are SB, DB and MFW. The core organising team is extended to include KRR (DPR), KKS (TUCDB) and KDY (RONAST) - those attending the Planning Meeting. It was agreed to extend an invitation onto the Organising Committee to Prof. Pramod K. Jha (Head of TUCDB), Dr Uday R. Sharma (Director General, DPR), and Dr Krishna Manandar (Secretary, RONAST).

Resource Persons

The majority of teaching during the workshops to be held in Nepal and fieldwork will be undertaken by RBGE staff, with contributions from KKS and KRR. However, it was agreed that it would be desirable to involve other specialists in Nepal (e.g. TB Shrestha, PR

Shakya, RP Chaudhary, MK Adhikari) and it would be appropriate to offer these other the customary 2000Rs per day as remuneration.

Roles of the Primary Organisations

The primary organisations are RBGE, RONAST, DPR (including the National Herbarium) and CDB/TU. Their general roles are laid out in the Project Proposal, and as existing Memoranda of Understanding exist between all the parties it was not deemed necessary to have additional MOU's for the Darwin Initiative project itself. However, it is appreciated that as part of the organisation of the workshops and fieldwork it would be necessary to make explicit arrangements for the use of rooms and facilities in the institutes.

Selection of Darwin Scholars

Up to 18 Nepalese botanists will comprise the Darwin Scholars involved in the project. Of these KKS and KRR are written in *ex officio* and participants on the core organising team. Ten remaining places will be allocated to the participating institutes as follows:

DPR	4 persons (+ KRR)
TU	4 persons (+ KKS)
RONAST	2 persons

The remaining six places will be filled through open competition (not excluding members if the participating organisation).

Eligibility - The criteria for selection are summarised as follows:

- M.Sc. (Botany) or equivalent experience; preference will be given to those specialising in systematics of any plant group,
- Candidates should demonstrate commitment to plant biodiversity research in Nepal (e.g. co-authorship of taxonomic treatments for the Flora of Nepal),
- Candidates with computing skills will be preferred,
- Candidates with permanent jobs will be preferred (not necessarily applied for open competition).

Recruitment Strategy - RONAST will place advertisements in a local Newspaper(s) with wide circulation (e.g. Kathmandu Post) and circulate advertisements for the notice boards of participating organisations, other institutes (e.g. the Natural History Museum), and NGO's (e.g. ICIMOD, WWF, IUCN, KMTNC, British Council, British Embassy, etc.).

Additional information and application forms will be available from RONAST and via the project website (www.floraofnepal.org).

Candidates should submit to RONAST a full Curriculum Vita, application form, and up to two letters from referees supporting their application. Those employed by DPR, TU or RONAST should send copies of their applications through their departmental heads.

As outlined above, the Director General of DPR will nominate **four** candidates from DPR staff (excluding KRR), the Dean of the Institute of Science and Technology, TU will nominate **four** candidates from TU staff (excluding KKS), and DB will nominate **two** candidates from RONAST staff. All remaining applicants will be considered for open competition. Following this RONAST will send RBGE details of the ten institutionally nominated candidates and details of a shortlist of about 12 candidates from which RBGE will make the final selection of the six open competition places.

Individual Project work - as part of the final assessment Darwin Scholars will be asked to submit a taxonomic report. This will be based around a taxon (e.g. family or genus) involving 10 to 20 species, and may take various forms, most probably a floristic account including keys and descriptions. Projects will be decided on an individual basis during the first training workshop, and should avoid technically critical groups and those of restricted distribution. The taxonomic group chosen will provide a focus for activities undertaken during the two years of the project. Scholars will put emphasis on collecting these taxa during the fieldwork exercises, record data from specimens at TUCH, KATH and RBGE, and undertake a literature survey. Scholars will be encouraged to continue application of techniques and continue research on their taxonomic group between the training events.

Creditation - Certificates of Attendance will be issued following completion of the training workshops in Nepal, training visits to the UK, and a final certificate issued on submittance of the Individual Project at the end of the course.

12.30-14.00 Lunch at the RBGE staff restaurant. SB led the Nepalese participants on a tour of the glasshouses.

Timing of events

Weekends (Saturday and Sunday) are generally not considered working days in the UK and for government offices in Nepal. Most people in Nepal do not work on a Saturday, but some institutes (including TUCDB) do work on Sunday. Particular times of the year are best avoided:

Within Nepal

Late September to early (ca 10th) October - Deshain festival 15-day holiday.

Mid to late October - Tihar festival (flowers and fruit) festival 3-day holiday.

Within UK

December 20th to January 5th - Christmas and Hogmanay (New Year) holiday festival.

Mid July and all of August - Edinburgh Festival time (accommodation very scarce).

Timing of the First Workshop

Considering the current political difficulties in Nepal following suspension of the Maoist ceasefire, it was decided that the first in-country training event (the first Workshop) should be postponed. It has been rescheduled for March 2004 to coincide with the National Conference of Science and Technology. The revised schedule is as follows:

Training Workshop Part I: Thu 18th, Fri 19th (possibly Sun 21st) Mon. 22nd March

National Conference of Science and Technology: Tue 23rd - Fri 26th March

Training Workshop Part II: Mon 29th March - Fri 2nd April.

Fieldwork Training Events

The main purpose of the three fieldwork training events is to:

- Train Darwin Scholars in the practical application of advanced specimen and data collection techniques under expedition conditions (not just day collecting trips),
- Build up well-annotated herbarium collections for poorly represented taxonomic groups,
- Build up well-annotated herbarium collections for under-collected areas,
- Enable the Scholars to study their taxonomic project group in the field and make targeted collections.

These field training events will also enable the:

- Development of closer working relationships between individuals working in different institutes,
- Field-testing of novel data collection methods, e.g. the use of hand-held computers, integration with GPS units, etc.

Fieldwork areas will ideally target botanically poorly known areas in East, Central and West Nepal, and range from the Lowlands, Mid Hills to High Hills. However, the locations will be dictated by practicalities, particularly with regard to personal security through the activities of the Maoist rebels. The Maoist ceasefire early in 2003 brought improved access to rural areas, but this has recently been suspended which makes planning activities outside the Kathmandu valley problematic. The following plans are drawn up allowing for variance between the current situation and improved conditions were the ceasefire to be reinstated.

First Fieldwork Training - Central or East Nepal, Mid Hills (April/May 2004)

To include KRR, alternative venues:

- 1) Milke Danda (Sankhuwasabha district)
- 2) Mewa Khola valley, Topke Gola (Taplejung district)
- 3) Kalinchok, Rolwaling valley (Dolakha district)
- 4) Low altitude Langtang valley and Gossainkund, and Helambu.

Second Fieldwork Training - Central or East Nepal, Lowlands (late Oct*/Nov 2004)

Terai and lower hill forests, to include KKS, alternative venues:

- 1) West of Chitwan National Park to the Kapi Bastu
- 2) Koshi Tappu Wildlife Part and west into Dhanusha, Siraha and Saptari Districts,
- 3) Koshi Tappu Wildlife Part and east towards Sikkim.

*after Tihar festival.

Third Fieldwork Training - West Nepal, High Hills (Aug/Sept 2005)

Alternative venues:

- 1) Simikot south to Rara National Park (airport at Simikot),
- 2) Jumla north to Rara National Park (airport at Jumla),
- 3) Khaptad National Park and environs (airport at Dipayal),
- 4) Phoksundo National Park, Dolpa.

These local airports are served from Nepalganj airport, ca. 12 hours drive from Kathmandu. It is envisaged that this expedition would be the largest of the three, and involve additional participants from RBGE and Nepal. This expedition would require additional funding and will be the subject of a grant application to the National Geographic Society.

Darwin Scholar Visits to the RBGE

The two training events at RBGE will take place in January/February 2005 (led by KRR) and January/February 2006 (led by KKS) and each involve nine Scholars. All 18 Darwin Scholars will have the opportunity to participate in one of these visits. The events will be of four weeks duration during which the team leaders will be present for the whole time. The other eight Scholars will be split into two groups. The first group of four will travel to Edinburgh with the team leader and work in Edinburgh for ca. 10 days. They will then all travel down to London for a short visit to the Natural History Museum, and possibly Royal Botanic Gardens Kew, before returning to Nepal. The second batch of Scholars should arrive as the first departs (possibly met by the team leader at Heathrow) and again spend ca. 10 days in Edinburgh and a short visit to London on the return.

Whilst at RBGE the Scholars will receive training in Herbarium management, use of the RBGE Collections (Herbarium, Library and Living Collections), make use of the collections for their personal taxonomic projects (see above), and identify materials collected during the fieldwork training.

17.30 End of Day 1 of the Planning Meeting.

19.30-21.30 Nepalese participants, SB, HJN and MFW met over dinner at the Loon Fung restaurant.

Thursday 18th September 2003

9.30 Start of Day 2 of the Darwin project formal Planning Meeting, Chaired by Prof. Stephen Blackmore (SB), attended by Nepalese participants, Drs Henry Noltie (HJN), David Long (DGL) and MFW.

Training Workshops

MFW circulated a draft listing of topics that should be covered during the three training workshops in Nepal. Additional topics were added to the list during the meeting and a revised working list of topics is attached as Appendix 1. This list will be used as a basis for planning the content of the workshops over the coming months. The general objectives of the three training workshops are to develop skills in:

- Collection of high quality, data-rich herbarium specimens and additional materials,
- Assessment of IUCN conservation status in the field,
- Identification of plants, both in the field and laboratory,
- Management and curation of Herbarium collections,
- Application of international legislation and ethics of plant collecting, import/export of plant specimens/materials
- Use of taxonomic resources (Herbarium, library, internet, etc.),
- Use of Information Technology for data capture, storage, manipulation and presentation,
- Production of taxonomic outputs, such as floristic accounts and checklists.

First Training Workshop - The first session should include an introduction to the whole project and training objectives. The diverse uses of herbarium specimens and Herbaria will be discussed to reinforce the need for good quality, data-rich collections. Collecting and recording accurate field data along with good herbarium collections will be covered in depth.

Assessment of Holdings in KATH and TUCH

One of the early outputs of the project is an assessment of current holdings of Nepalese herbaria (KATH and TUCH). During the first training workshop the Darwin Scholars will work in the two herbaria and make an assessment of specimen holdings for selected taxa with reference to the Annotated Checklist. The taxa selected will include those subjects of their personal project and other groups selected to give a representative sampling. Allowance must be made for the estimated 30% (50,000 specimens) not yet incorporated into the KATH herbarium. The assessment can later be extended by using the same taxa to look at the holdings of herbaria outside Nepal.

The Training Manual

During the first workshop the Darwin Scholars will each be given a copy of the Herbarium Handbook produced by the Royal Botanic Gardens, Kew. At the end of the project they will also be given a Training Manual detailing the subjects covered during the training workshops. The Training Manual will take the form of a collection of the printed materials ('handouts') used during the workshop. MFW will produce an example of such teaching materials in advance of the first training workshop to serve as a guide to lecturers. Lecturers will be required to submit a copy of their teaching materials to MFW for inclusion in the Training Manual during or shortly after the session. Electronic copy is preferred as the Training Manual will also be made available online via the project website. Together the Herbarium Handbook and the Manual will serve as reference for Scholars for future work and provide study aids for use when teaching others.

The Inauguration Ceremony

It is customary in Nepal that the first training workshop should be preceded by an Inauguration Ceremony. This is a major formal event involving senior figures from the Government of Nepal, NGOs and the primary institutes (including the British Embassy and British Council). We would hope that this would attract significant media coverage in Nepal and raise the profile of the Darwin Initiative project. DB suggested that RONAST should host this event and would undertake all the necessary arrangements. The initial plan was to hold the first part of the Workshop at the British Embassy, but it may be easier and offer more flexibility to hold the Inauguration Ceremony outside the tight security of the diplomatic area. The Inauguration Ceremony should start at 10am and last about an hour.

SB suggested that RBGE could host an evening dinner to invite the British Ambassador and Director of the British Council Kathmandu, and key persons of collaborating institutes.

It is also customary to have a formal closing ceremony at the end of the workshop, but of lower profile than the inauguration. The last day should also include a feedback session from the participants.

Internet Access Within Nepal

KKS pointed out that current 56k dial-up internet connections in Nepal are slow, particularly during the day, and this severely restricts access to some online taxonomic resources (such as Index Kewensis). MFW suggested that securing use of a faster means of connection with greater bandwidth will be crucial if Nepalese scientists are to make full use of the resources now freely available online. For example, many rare books important to taxonomic research are not present in Nepal but can be consulted online. DB mentioned that the Physics Department in Tribhuvan University have a fast access connection, and that KKS should ask them for advice.

Herbarium Supplies

Some herbarium materials (e.g. pre-printed collecting books, specimen mounting paper, species covers, paper for labels and glue) could be economically purchased in Nepal or imported from India. HJN said that it is vitally important that the paper used to mount herbarium specimens is high quality, acid free paper with high rag content. If not the paper will rapidly deteriorate and damage the specimen. KKS and KRR said that they would investigate the availability and cost of these items.

Revised Gantt Chart

The revised Gantt Chart showing timing of events is attached as Appendix 2.

12.30 End of the Planning Meeting. Lunch at the RBGE staff restaurant.

14.00-16.30 Informal meeting to discuss Flora of Nepal matters, Chaired by SB, attended by Nepalese participants, Dr Mary Gibby (Director of Science, RBGE), HJN, DGL and MFW.

18.30-22.00 Nepalese participants, Drs Crinan Alexander and Pete Hollingsworth (Science Division, RBGE), Dr Richard Gornall (visiting scientist from University of Leicester, co-author of Saxifragaceae for Flora of Nepal), DGL, MFW met over dinner at the Waterfront restaurant, Leith. This was followed by coffee and whisky tasting at the Scottish Malt Whisky Society, The Vaults, Leith.

Friday 19th September 2003

Morning: Free time to finalise resolutions and arrangements following on from the formal meetings, and time for Nepalese participants to consult the RBGE International collections (preserved material in the herbarium, literature in the library and living plants in the Garden).

MW circulated the final version of the report of the June meetings to Nepalese participants with extra copies for Departmental heads back in Kathmandu.

12.30-13.30 Lunch at the RBGE staff restaurant.

Afternoon: as for the morning. DB visited the Royal Society of Edinburgh with a view to establishing formal links between RSE and Royal Nepal Academy of Science and Technology (RONAST).

Evening: Free time for Nepalese participants to explore Edinburgh city centre.

Saturday 20th September 2003

All day: Free time for Nepalese participants to explore Edinburgh. Arrangements made for KRR and KKS to access the Herbarium.

Sunday 21st September 2003

9.30-13.00 MW joined the Nepalese delegates at their guest houses for a morning's sightseeing at Edinburgh Castle, the Royal Mile and the Old Town.

15.00 Nepalese delegates left by taxi to catch their 17.00 return flight from Edinburgh Airport.

APPENDIX 1. WORKSHOP TOPICS WORKING DRAFT

Welcome and introduction to the Darwin Initiative and the Project

Herbaria: kinds and usage

Herbarium specimens: value and use, relevance to current biodiversity issues

Collecting methods

- Representative sampling (populations to individuals)

- Methods for mosses, lichens, fungi and higher plants

- Advanced methods for difficult groups

- Additional collections (seed, DNA, living, spirit, chromosomes, etc.)

- Collection of duplicates for distribution and naming by experts

Names, scientific and vernacular

- Basic nomenclature and classification

Data gathering

- Location, geo-referencing: including GPS theory and practice

- Altitude: including theory and practice

- Supplementary data (habit, aspect, habitat, etc.)

- IUCN conservation status

- Local uses, ethnobotany

Specimen preparation

- Drying methods

- Mounting

Field photography and illustration

Data capture: use of computers to store and manage specimen data

Herbarium management

- Storage methods (standard, carpological, cryptogams, etc.)

- Damage control (pests, fungi, water)

- Loans systems

- Database systems

International Legislation/Organisations

- Local legislation

- CITES

- CBD (international and national obligations), GTI, GBIF

- Biodiversity Action Plans and Red Lists

Logistics in undertaking fieldwork (including involvement of non-Nepali botanists)

- Local rules and regulations

- National regulations

- Plant export (and import): quarantine, phytosanitary certificates, CITES

Monographs and Floras

- Producing a checklist or inventory

- Writing a Flora account (Flora of Nepal)

- Internet taxonomic resources

Other Taxonomic Outputs

- Red Data Books

- Biodiversity Action Plans

- Non-technical Field Guides

Plant Identification

- General methods (including interactive keys)

- Specialist groups (e.g. grasses, ferns?)

- Field recognition of major families

Specimen dissections, use of microscopes