

DAVIS EXPEDITION FUND

REPORT ON EXPEDITION / PROJECT

Expedition/Project Title: NEOTROPICAL LOWLAND RAIN FOREST FIELD TRIP:
WESTERN AND INTER-ANDEAN RAIN FORESTS,
COLOMBIA (Sapotaceae expedition 2016)

Travel Dates: 17 May to 28 July 2016

Location: Valle del Cauca, Santander and Chocó - Colombia.

Group Members: Julieth Serrano

Aims: To collect specimens and leaf fragments of species of the plant family Sapotaceae at the Western Andean and inter-Andean lowland rain forest of Colombia.

Outcome (not less than 300 words):-

INTRODUCTION

The aim of the project was to collect Sapotaceae specimens at the Lowland Rain Forests (LRF) of the Western side of the Andes and at the Magdalena inter-Andean valley in Colombia. Sapotaceae is a representative plant family and a potential indicator of the conservation status of these ecosystems. It is also a focus group at the Royal Botanic Garden Edinburgh (RBGE). Samples of Sapotaceae were gathered to enhance the collections at the herbaria and at the DNA banks at the RBGE and the local collaborators in Colombia. These collections complemented previous work carried out in the Eastern Andean Valleys and Eastern Side of the Andes in Colombia, and are currently being used to produce phylogenetic and spatial analyses aiming to provide a strong scientific background for future efforts in local conservation.

Specifically, field work was carried out in the departments of Santander, Choco and Valle del Cauca - Colombia. All activities were led by the applicant in collaboration with the Universidad Distrital Francisco Jose de Caldas (UDFJC) of Colombia. Currently the applicant is a fourth year PhD student at the Royal Botanic Garden Edinburgh/University of Edinburgh.

Expedition participants and Associates

Julieth Serrano – RBGE and University of Edinburgh

Maria Fernanda Torres - RBGE and University of Edinburgh

Moisés Rojas Salazar – UDFJC

Roció Cortez – UDFJC

METHODS

The itinerary was followed as described in the initial proposal with an additional stop at the municipality of la India in the Santander department (Table 1). Briefing meetings for local guides, expedition participants and partner institutions took place in Bogotá prior to the first collection trip to Nuqui. During this time, localities for collecting trips were confirmed, and further literature at local herbaria was also revised. The collecting team was integrated by the applicant, a field assistant and a local guide. A full week collecting samples was spent in each of the four areas. After that another full week was used to dry and prepare the material to be deposited at the UDFJC and the RBGE herbaria.

Table 1. Schedule for the Sapotaceae expedition 2016. Two weeks per locality were spent. This includes collecting days and extra time to process samples at the local herbaria. All specimens were deposited at the UDFJC herbarium.

DATE	ACTIVITY
17 May 2016	Arrival to Bogotá from Edinburgh
18-30 May 2016	Meetings with local collaborators and collecting team. Materials gathering.
31 May 2016	Arrival to Nuqui from Bogotá
01 June 2016	Briefing to local guide/climbers. Collecting day
02-04 June 2016	Collecting day
05 June 2016	Collecting day/Contingency day
06 June 2016	Return to Bogotá
07 June 2016	Resting day
08-12 June 2016	Material processing at UDFJC
13 June 2016	Arrival to Bajo Calima from Bogotá
14 June 2016	Briefing to local guide/climbers. Collecting day
13-17 June 2016	Collecting day
18 June 2016	Collecting day/Contingency day
19 June 2016	Return to Bogotá
20 June 2016	Resting day
21-25 June 2016	Material processing at UDFJC
26 June 2016	Arrival to Piliza from Bogotá
27 June 2016	Briefing to local guide/climbers. Collecting day
28-30 June 2016	Collecting day
01 July 2016	Collecting day/Contingency day
02 July 2016	Return to Bogotá
03 July 2016	Resting day
04-08 July 2016	Material processing at UDFJC
09 July 2016	Arrival to la India
10 July 2016	Briefing to local guide/climbers. Collecting day
11-13 July 2016	Collecting day
14 July 2016	Collecting day/Contingency day
15 July 2016	Return to Bogotá
16-27 July 2016	Material processing at UDFJC
28 July 2016	Return to Edinburgh

Sapotaceae specimens were collected from May to July 2016 on the Western side of the Andes in the departments of Choco and Valle del Cauca in Colombia, and at the inter-Andean valley of la India in the Santander department (Table 2 and Figure 1). To collect samples from trees up to 15 meters height, a trimmer was used (provided by the UDFJC). For trees reaching more than 15 meters, samples were collected by climbing the individual. Safety gear such as harnesses and ropes were always used, and security protocols were followed.

Table 2. Localities visited during the Sapotaceae expedition 2016. Four localities were visited for a week each. Staff from the UDFJC and local collaborators were present at all sites.

DEPARTMENT	MUNICIPALITY	LOCALITY	AREA	LAT	LONG
Chocó	Bajo Baudó/Pizarro	Piliza	Piliza	5.0299	-77.3404
Chocó	Nuquí	Arusi	Arusi	5.5741	-77.5011
Valle del Cauca	Calima	Bajo Calima	Reserva forestal del Bajo Calima	3.9597	-77.0174
Santander	Cimitarra	La India	La India	6.1822	-74.1199

LOWLAND RAIN FOREST OF CONTINENTAL COLOMBIA

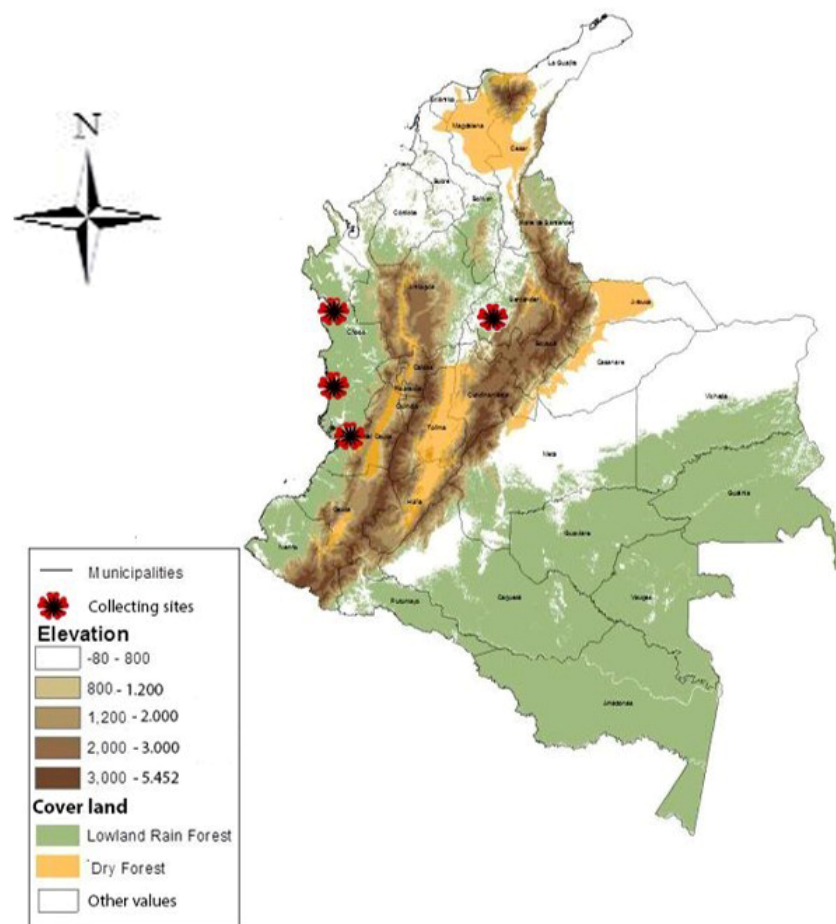


Figure 1. Sapotaceae expedition 2016, collecting sites. Voucher specimens and leaf fragments were collected on the Western side of the Andes and on the Magdalena inter-Andean valley in the departments of Valle del Cauca, Santander and Chocó. Cover land units of Rain forest are depicted as proposed by IDEAM *et al.* (2007), and dry forest areas as adapted from the WWF Ecoregions (Olson *et al.*, 2001).

Specimens were mounted and kept on newspaper away from moisture. Photos, coordinates and field notes were gathered for each of them (Photo 1).

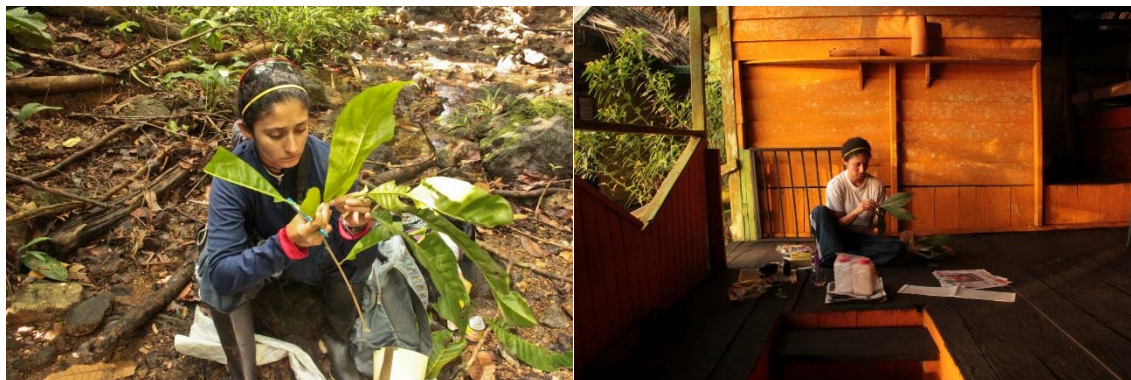


Photo 1 Collection and mounting of specimens. On the left: Collection of specimens from individuals reaching less than 5 metres height. Right: Preparation of specimens before mounting them temporarily on newspaper.

Samples were deposited at the Herbarium at the UDFJC where duplicates are being processed. After this, duplicates will be sent to the herbarium at the RBGE. Fragments for DNA extraction were taken and are currently being used for molecular analyses. Further work will aim to update the taxonomic circumscription of the family, and to determine its geographic distribution to infer areas of high conservation priority in Colombia. This based on the biogeographic history of lowland rain forest in the Neotropics.

RESULTS

A total of 56, 28, 26, and 12 specimens were collected in the localities of Arusi, Bajo Calima, Piliza and La India respectively. All classified within the Chrysophylloideae subfamily (Photo 2). This material is currently being processed; however, the partial identification includes the following taxa: *Chrysophyllum venezuelaense*, *Chrysophyllum* sp., *Chrysophyllum bombycinum*, *Chrysophyllum prieurii*, *Chrysophyllum lucentifolium*, *Chrysophyllum manaoense*, *Ecclinusa lanceolata*, *Ecclinussa* sp., *Ecclinussa ramiflora*, *Micropholis* sp., *Micropholis crotonoides*, *Micropholis guyanensis*, *Micropholis venulosa*, *Pouteria baehiana*, *Pouteria buenaventurensis*, *Pouteria* cf. *clurlandil*, *Pouteria* cf. *subrostrata*, *Pouteria* cf. *reticulate*, *Pouteria* cf. *torta*, *Pouteria cuspidata* subsp. *cuspidata*, *Pouteria cuspidata* subsp. *robusta*, *Pouteria rostrate*, *Pouteria* sp. aff. *collina*, *Pouteria torta*.



Photo 2 Plant material collected on the LRF of Colombia. On the left: Sapotaceae's fruit. On the right: Sapotaceae's fruit and leaves. These samples were collected at the Piliza locality.

BUDGET

A total of £2616 was provided by the Davis Expedition fund. This was used to partially cover the cost of the expedition, the remaining costs were covered by the applicant (Table 3).

Table 3. Sapotaceae expedition 2016 costs. The total cost of the expedition exceeded the amount initially estimated and provided by the Davis expedition Fund. Those extra costs were covered by the applicant.

Item	Expenses in COP	Expenses in GBP	COP to GBP	Total (GBP)
Transportation	3,585,800.00	1293.75	810.9954133	2104.745413
Food	831,819.00		188.13135	188.13135
Accommodation	157,000.00		35.5084723	35.5084723
Local guides' salaries	972,860.00		220.0303971	220.0303971
Other		138.42		
Subtotal	5,547,479.00	1432.17	1254.66563	
Expenses				2,686.84

* May 2016 exchange rate: 1 GBP = 4421.48 COP

ACKNOWLEDGEMENTS

I will like to thank the Davis expedition fund committee for supporting this initiative and allowing the exploration of ecosystems of high conservation priority. The enhancement of plant and DNA collections in the UK and in Colombia is essential for the discovery of new taxa and the evaluation of conservation strategies.

I would like to express my gratitude to the University of Edinburgh and the Royal Botanic Garden Edinburgh which in many ways contributed to this study. Finally, I will like to thank the local institutions in Colombia, the collection team and the local communities.

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