

DAVIS EXPEDITION FUND
REPORT ON EXPEDITION/PROJECT

Expedition/Project Title: The Begonia flora of Sumatra

Travel Dates: May/June 2007

Location: Sumatra

Group Members: Mark Hughes

Aims: A monograph of Sumatran Begonia

OUTCOME (not less than 300 words):-

See attached report

Final Report for the Davis Expedition Fund

A monograph of Sumatran Begonia

Mark Hughes 10 August 2007

Introduction

Begonia is one of the largest flowering plant genera at 1500 species, and is an ideal model for studying the biogeography and evolution of tropical floras. Indonesia has 151 known species of *Begonia*, with nearly a third of these (48) occurring on Sumatra and most of these being endemic to the island. However examination of herbarium collections shows that the number of species on Sumatra may be closer to 100, representing a considerable number of as yet unknown species. No complete baseline account of the *Begonia* of Sumatra exists, which has hampered the identification of known species and the description of new ones. The field expedition aimed to survey and collect herbarium specimens of *Begonia* in selected sites in Sumatra in order to:

- Produce an illustrated monograph of the *Begonia* of Sumatra
- Increase the number of good quality, properly identified specimens in Indonesian and European herbaria.

Objectives

1. To produce a monograph of Sumatran *Begonia*, with conservation assessments for each species.
2. To assist with the identification and curation of *Begonia* specimens in Indonesian herbaria
3. To make data and images of Sumatran *Begonia* from European herbaria available to researchers in Indonesia
4. To build collaborations with Indonesian plant systematists

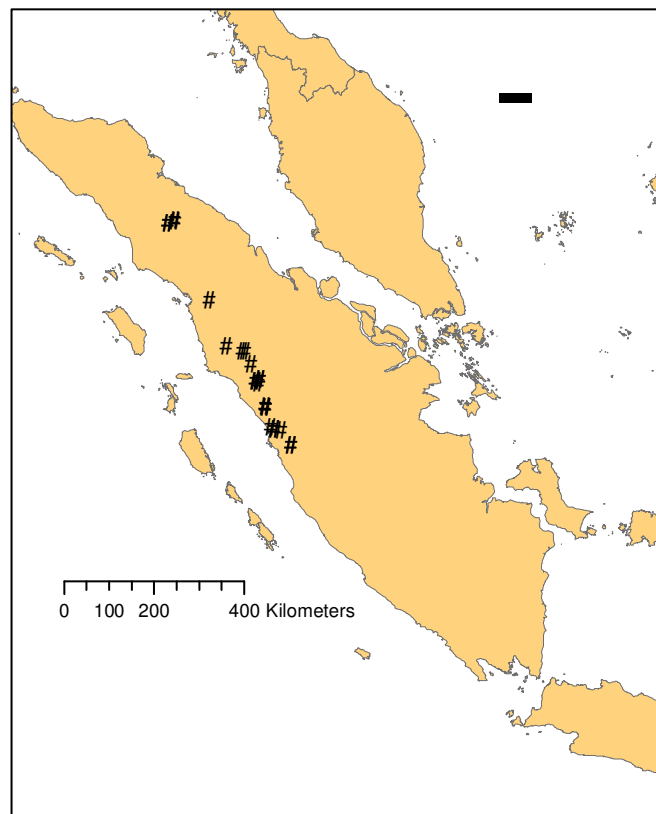


Fig.1. Map of Sumatra showing collection localities during the expedition.

Implementation

1. Arrival in Bogor 1 May 2007
2. Begin permit approval process 2 May 2007
3. Travel to Medan, Sumatra 9 May 2007
4. Provincial permit approval (Medan) 9-11 May 2007
5. Fieldwork in North Sumatra (Sibolangit, Gunung Sibayak, Gunung Sinabung) 11-14 May 2007
6. Provincial permit approval (Penyabungan) 16 May 2007
7. Fieldwork in Gunung Sorik Merapi 17 May 2007
8. Travel to Padang 18 May 2007, meet with UNAN collaborators
9. Provincial permit approval (Padang) 21-22 May 2007
10. Work in UNAN herbarium 23-26 May 2007
11. Provincial permit approval (Rimbo Panti) 27 May 2007
12. Fieldwork in Rimbo Panti 28 May 2007
13. Fieldwork in Gunung Talang 30 May 2007
14. Fieldwork in Pantai Cermin vicinity 1-2 June 2007
15. Travel to Bogor, work in Herbarium Bogoriense 4-7 June 2007

Results

Eighteen species were observed in the field (Figs. 1 & 2), with 7 of these corresponding to known species. The remaining 11 are likely to represent new species, and further work in the herbarium will be carried out to confirm this.

Field observations have been extremely informative in terms of understanding species delimitation, and also in providing information not present on herbarium specimens. For example, species in *Begonia* sect. *Reichenheimia* have been found to have juvenile and adult forms, with correspondingly different vegetative characters. This will be of great assistance in providing a working taxonomy for this group which until now had presented great difficulties.

Herbarium specimens will be left at the Bogor herbarium (BO), with duplicates (if available) being distributed via BO to Edinburgh (E) and Leiden (L). Collections are listed in Table 1.

Conclusions

The research has led to increased understanding of the *Begonia* diversity of Sumatra. This will lead to the publication of a monograph which will be of use to those working in the fields of biodiversity and conservation in Indonesia. There are undoubtedly many more species to be discovered, particularly in areas which are relatively under explored such as Aceh. It is hoped that future work and collaboration between Indonesian botanists and the Royal Botanic Garden Edinburgh will continue to provide insight into Sumatran plant biodiversity.

Acknowledgements

I thank Dr. Eko Baroto Walujo and Dr. Marlina Ardiyani from Herbarium Bogoriense for their support, Nurainas and her students at ANDA, T. Alief from the University of North Sumatra, the Indonesian Embassy in London for granting my visa, and the staff at LIPI, the Forestry Dept. and BKSDA.

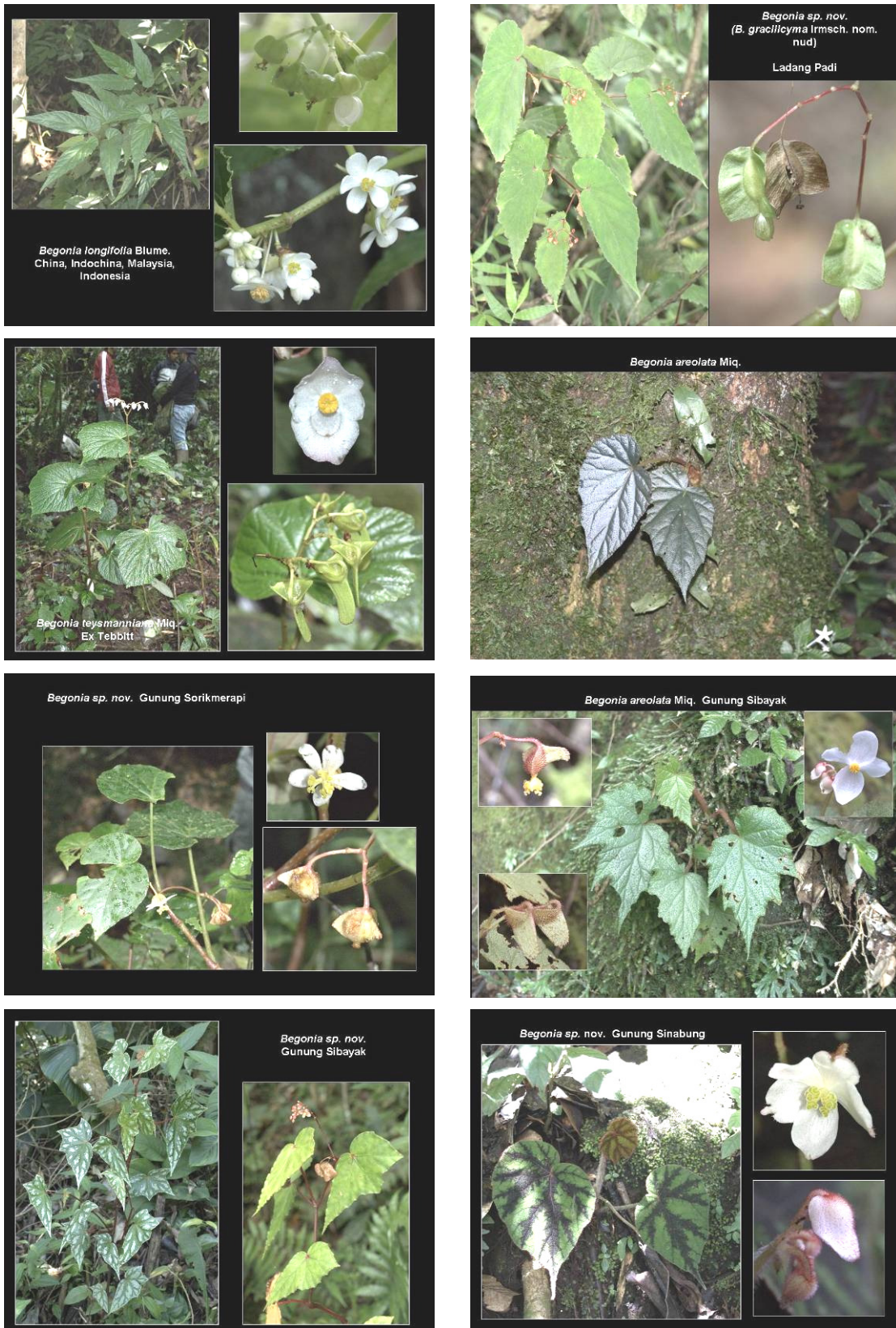


Fig. 2. Examples of some of the *Begonia* species encountered during the expedition.

Table 1. Herbarium specimens deposited at BO

Coll_num	Species	Locality	Date	Altitude(m)
MH1385	B. "pseudotrigonocarpa"	G. Sibayak	12-May-07	967
MH1387	B. longifolia	G. Sibayak	12-May-07	967
MH1388	B. areolata	G. Sibayak	12-May-07	967
MH1389	B. sp. 1 (lobed leaves)	G. Sibayak	12-May-07	967
MH1390	B. "pseudotrigonocarpa"	G. Sibayak	12-May-07	988
MH1393	B. areolata	G. Sibayak	13-May-07	988
MH1394	B. "sinabungensis"	G. Sinabung	14-May-07	1399
MH1395	B. longifolia	G. Sinabung	14-May-07	1399
MH1396	B. "pseudotrigonocarpa"	G. Sinabung	14-May-07	1399
MH1397	B. areolata	G. Sinabung	14-May-07	1399
MH1398	B. sp. 1 (lobed leaves)	G. Sinabung	14-May-07	1399
MH1399	B. longifolia	G. Sinabung	15-May-07	1176
MH1400	B. sp. 2 (aff. stictopoda)	G. Sinabung	15-May-07	1175
MH1401	B. stictopoda	G. Sinabung	15-May-07	1175
MH1402	B. "resecta"	G. Sinabung	15-May-07	1175
MH1403	B. "gracilicyma"	G. Sinabung	15-May-07	1175
MH1405	B. stictopoda	G. Sinabung	15-May-07	1175
MH1406	B. atricha	G. Sinabung	15-May-07	1175
MH1407	B. "gracilicyma"	G. Sinabung	15-May-07	1175
MH1408	B. "resecta"	G. Sinabung	15-May-07	1175
MH1409	B. stictopoda	Rimbo Panti	27-May-07	327
MH1410	B. sp. 3 (dark ciliate leaves)	Rimbo Panti	27-May-07	327
MH1411	B. sp. 3 (dark ciliate leaves)	Rimbo Panti	28-May-07	327
MH1412	B. stictopoda	Rimbo Panti	28-May-07	327
MH1414	B. stictopoda	Rimbo Panti	28-May-07	327
MH1415	B. sp. 4 (Petermannia, thin stipules)	Rimbo Panti	28-May-07	327
MH1416	B. sp. 3 (dark ciliate leaves)	Rimbo Panti	28-May-07	327
MH1417	B. sp. 3 (dark ciliate leaves)	Rimbo Panti	28-May-07	327
MH1418	B. atricha	G. Talang	30-May-07	1661
MH1419	B. sp. 3 (dark ciliate leaves)	G. Talang	30-May-07	1661
MH1420	B. sp. 4 (Petermannia, thin stipules)	G. Talang	30-May-07	1661
MH1421	B. sp. 3 (dark ciliate leaves)	G. Talang	30-May-07	1661
MH1422	B. atricha	G. Talang	30-May-07	1661
MH1423	B. "resecta"	G. Talang	30-May-07	1661
MH1424	B. sp. 4 (Petermannia, thin stipules)	G. Talang	30-May-07	1661
MH1425	B. teysmanniana	G. Talang	30-May-07	1661
MH1426	B. areolata	G. Talang	30-May-07	1661

MH1427	B. sp. 5 (Petermannia)	G. Talang	31-May-07	1661
MH1428	B. teysmanniana	G. Talang	31-May-07	1661
MH1429	B. sp. 6 (Petermannia)	G. Talang	31-May-07	1661
MH1430	B. sp. 5 (Petermannia)	G. Talang	31-May-07	1661
MH1428b	B. multangula	Village nr. Panti Cermin	01-Jun-07	1392
MH1429b	B. sychnantha	Village nr. Panti Cermin	01-Jun-07	1392
MH1430b	B. multangula	Village nr. Panti Cermin	01-Jun-07	1392
MH1431	B. longifolia	Village nr. Panti Cermin	01-Jun-07	1392
MH1432	B. sychnantha	Village nr. Panti Cermin	01-Jun-07	1392
MH1433	B. sp. 7 (aff. Sphenanthera, sterile)	Village nr. Panti Cermin	01-Jun-07	1392
MH1434	B. teysmanniana	Village nr. Panti Cermin	01-Jun-07	1392
MH1435	B. areolata	Village nr. Panti Cermin	01-Jun-07	1392
MH1436	B. multangula	Village nr. Panti Cermin	01-Jun-07	1392
MH1437	B. sychnantha	Village nr. Panti Cermin	01-Jun-07	1392
MH1438	B. longifolia	Village nr. Panti Cermin	01-Jun-07	1392
MH1439	B. longifolia	Village nr. Panti Cermin	01-Jun-07	1392
MH1440	B. sp. 5 (Petermannia)	Village nr. Panti Cermin	01-Jun-07	1392
MH1441	B. sychnantha	Village nr. Panti Cermin	01-Jun-07	1392

ACCOUNTS FOR MAY-JUNE 2007 EXPEDITION TO SUMATRA BY M. HUGHES.

EXPENDITURE

Date	Loc.	Descr.	Rupiah	GBP (16451.7 Rp/GBP)
12/04/2007	Edinburgh	Flight Ed. To Jakarta		£734.50
12/12/2007	Edinburgh	Health cert.		£15.00
02/04/2007	Edinburgh	Visa		£46.66
17/04/2007	Edinburgh	Vaccination		£50.00
17/04/2007	Edinburgh	Drugs		£28.00
21/04/2007	Edinburgh	Medical kit		£19.99
21/04/2007	Edinburgh	Guide book		£17.99
30/04/2007	Edinburgh	Bus to airport		£5.00
01/05/2007	Jakarta	Taxi (Jakarta-Bogor)	Rp300,000	£18.24
01/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
02/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
02/05/2007	Bogor	LIPI permit fee (100 USD)		£50.64
02/05/2007	Bogor	Car and driver (Bogor-Jakarta)	Rp350,000	£21.27
03/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
03/05/2007	Bogor	Car and driver (Bogor-Jakarta)	Rp350,000	£21.27
04/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
04/05/2007	Bogor	Car and driver (Bogor-Jakarta)	Rp350,000	£21.27
05/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
06/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
06/05/2007	Bogor	Car (Cibinong)	Rp100,000	£6.08
06/05/2007	Bogor	Car and driver (Bogor-Jakarta)	Rp350,000	£21.27
07/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
08/05/2007	Bogor	Hotel Wisma Ramayana	Rp70,000	£4.25
09/05/2007	Bogor	Flight Jakarta - Medan x 2	Rp1,700,000	£103.33
09/05/2007	Bogor	Taxi (Bogor-Jakarta)	Rp350,000	£21.27
09/05/2007	Bogor	Airport tax x 2	Rp60,000	£3.65
09/05/2007	Medan	Taxi	Rp70,000	£4.25
09/05/2007	Medan	Colour printing	Rp176,000	£10.70
09/05/2007	Medan	Dhaksina Hotel (2 persons)	Rp500,000	£30.39
09/05/2007	Medan	Collecting equipment	Rp250,000	£15.20
09/05/2007	Medan	Home affairs fee	Rp50,000	£3.04
09/05/2007	Medan	Wellingtons (x2 pairs)	Rp120,000	£7.29
10/05/2007	Medan	Dhaksina Hotel (2 persons)	Rp500,000	£30.39
11/05/2007	Sibayak	Motorbikes (2 people)	Rp40,000	£2.43
11/05/2007	Sibayak	Hotel (2 persons)	Rp250,000	£15.20
11/05/2007	Sibayak	Guides	Rp200,000	£12.16
12/05/2007	Sibayak	Hotel (2 persons)	Rp250,000	£15.20
13/05/2007	Brastagi	Mobile phone top up	CC	£30.00
13/05/2007	Brastagi	Hotel Wisma Sibayak (2 persons)	Rp250,000	£15.20
13/05/2007	G. Sinabung	Car and driver	Rp180,000	£10.94
13/05/2007	G. Sinabung	Guides	Rp200,000	£12.16
14/05/2007	Brastagi	Hotel Wisma Sibayak (2 persons)	Rp250,000	£15.20
15/05/2007	Penyabungan	Car and driver (Brastagi to Penyab.)	Rp1,600,000	£97.25
15/05/2007	Penyabungan	Hotel Madina Sejahtera (2 persons)	Rp320,000	£19.45
15/05/2007	Penyabungan	National park fees	Rp425,000	£25.83
15/05/2007	Penyabungan	Car and driver (Sorik Merapi)	Rp100,000	£6.08
16/05/2007	Penyabungan	Hotel Madina Sejahtera (2	Rp320,000	£19.45

16/05/2007	Penyabungan	persons) Guides x 2	Rp200,000	£12.16
17/05/2007	Penyabungan	Hotel Madina Sejahtera (2 persons) Car and driver (Penyab. to Padang)	Rp320,000	£19.45
18/05/2007	Padang	Hotel Femina (2 persons)	Rp900,000	£54.71
18/05/2007	Padang	Taxi to University	Rp460,000	£27.96
18/05/2007	Padang	Laundry	Rp100,000	£6.08
18/05/2007	Padang	Hotel Femina (2 persons)	Rp156,000	£9.48
19/05/2007	Padang	Flight Padang - Jakarta x 1 (rtn)	Rp460,000	£27.96
19/05/2007	Padang	Taxi to University	CC	£97.79
19/05/2007	Padang	Hotel Femina (1 persons)	Rp100,000	£6.08
20/05/2007	Padang	Taxi to University x 2	Rp230,000	£13.98
20/05/2007	Padang	Hotel Femina (1 persons)	Rp200,000	£12.16
21/05/2007	Padang	Colour printing	Rp230,000	£13.98
21/05/2007	Padang	Hotel Femina (1 persons)	Rp110,000	£6.69
22/05/2007	Padang	Hotel Femina (1 persons)	Rp230,000	£13.98
23/05/2007	Padang	Hotel Femina (1 persons)	Rp230,000	£13.98
24/05/2007	Padang	Hotel Femina (1 persons)	Rp230,000	£13.98
25/05/2007	Padang	Hotel Femina (1 persons)	Rp230,000	£13.98
25/05/2007	Bogor	Damri bus	Rp60,000	£3.65
25/05/2007	Padang	Car and driver (Bogor-Jakarta)	Rp300,000	£18.24
25/05/2007	Padang	Flight reschedule	Rp325,600	£19.79
25/05/2007	Padang	Airport tax x 1	Rp55,000	£3.34
25/05/2007	Padang	Taxi	Rp150,000	£9.12
26/05/2007	Padang	Hotel Femina (2 persons)	Rp460,000	£27.96
27/05/2007	Rimbo Panti	House rental (5 persons x 2 nights) car and driver (250K x 3 days +gas)	Rp360,000	£21.88
27/05/2007	Rimbo Panti	Guides	Rp1,090,000	£66.25
27/05/2007	Rimbo Panti	Hotel Femina (2 persons)	Rp120,000	£7.29
29/05/2007	Padang	Car and driver + gas	Rp430,000	£26.14
30/05/2007	G. Talang	House rental (4 persons)	Rp350,000	£21.27
30/05/2007	G. Talang	Motorbikes (4 people x 2 trips)	Rp100,000	£6.08
30/05/2007	G. Talang	Guide	Rp320,000	£19.45
30/05/2007	G. Talang	Car and driver + gas	Rp100,000	£6.08
31/05/2007	G. Talang	Hotel Femina (2 persons)	Rp350,000	£21.27
31/05/2007	Padang	Laundry	Rp430,000	£26.14
31/05/2007	Padang	Car + driver (2 days) + gas	Rp144,000	£8.75
01/06/2007	Panti Cermin	Guides	Rp700,000	£42.55
01/06/2007	Panti Cermin	House rental (5 persons)	Rp200,000	£12.16
01/06/2007	Panti Cermin	Hotel Femina (2 persons)	Rp200,000	£12.16
02/06/2007	Padang	Mobile phone top up	Rp430,000	£26.14
02/06/2007	Padang	Laundry	CC	£30.00
02/06/2007	Padang	Hotel Femina (2 persons)	Rp98,500	£5.99
03/06/2007	Padang	Airport tax x 2	Rp430,000	£26.14
03/06/2007	Padang	Flight Padang - Jakarta x 2	Rp50,000	£3.04
03/06/2007	Jakarta	Taxi (Bogor)	Rp1,040,000	£63.22
04/06/2007	Bogor	Hotel Mira	Rp350,000	£21.27
04/06/2007	Bogor	Blank CDs	Rp482,790	£29.35
05/06/2007	Bogor	Hotel Pangrango	Rp375,000	£22.79
06/06/2007	Bogor	Hotel Pangrango	Rp499,000	£30.33
07/06/2007	Bogor	Hotel Pangrango	Rp499,000	£30.33
07/06/2007	Jakarta	Airport tax	Rp499,000	£30.33
07/06/2007	Bogor	Taxi (Jakarta)	Rp100,000	£6.08
07/06/2007	Bogor		Rp250,000	£15.20

07/06/2007	Bogor	Taxi (Bogor-DHL)	Rp100,000	£6.08
07/06/2007	Bogor	DHL courier	Rp1,368,000	£83.15
07/06/2007	Sumatra	Counterpart fee (400K x 27 days)	Rp10,800,000	£656.47
07/06/2007	Sumatra	Satellite phone hire		£75.20

Per diem expenses (food, drinking water, local transport by bus or medjar)

Name	Person-days (1pd=Rp75,000=£4.55)		
M. Hughes	41	Rp3,075,000	£186.91
D. Girmansyah	27	Rp2,025,000	£123.09
Rimbo Panti team	12	Rp900,000	£54.71
Panti Cermin team	10	Rp750,000	£45.59
G. Talang team	4	Rp300,000	£18.24
Sorik Merapi team	3	Rp225,000	£13.68
Anda team	2	Rp150,000	£9.12
Ladang Padi team	3	Rp225,000	£13.68

TOTAL EXPENDITURE **£4,007.34**

INCOME	RBGE Small Projects Fund	£2,000.00
	Davis Expedition Fund	£1,500.00
	Percy Sladen Memorial Trust	£400.00

TOTAL INCOME **£3,900.00**

BALANCE **-£107.34**