

DAVIS EXPEDITION FUND

REPORT ON EXPEDITION / PROJECT

Expedition/Project Title:	Revision of the Acanthaceae for the Flora of Nepal: Collecting in Tarai
Travel Dates:	28 October 2012 – 5 December 2012
Location:	Tarai Region of Nepal
Group Members:	Bhaskar Adhikari
Aims:	To collect Acanthaceae specimens to revise the family

Outcome (not less than 300 words):-

Introduction

The Acanthaceae is a predominantly tropical family, and is thus most diverse in the lowlands of Nepal at altitudes from as low as 60 m to 2000 m. These areas have received much less attention from plant collectors than Nepal's mountains, and consequently Nepal's subtropical flora is rather poorly known in comparison with its temperate and alpine floras. The family comprises 26 genera and 71 species (Press et al. 2000), many of which are poorly known because of the paucity of collection as well as lack of recent revision of the family. A field trip was conducted in November 2012 to collect the specimens from the Tarai region of Nepal for the revision of the family Acanthaceae for Flora of Nepal.

Expedition members

Bhaskar Adhikari

Ganga D. Bhatt (6th Nov – 13th Nov)

Dhan R Kandel (18th Nov – 28th Nov)

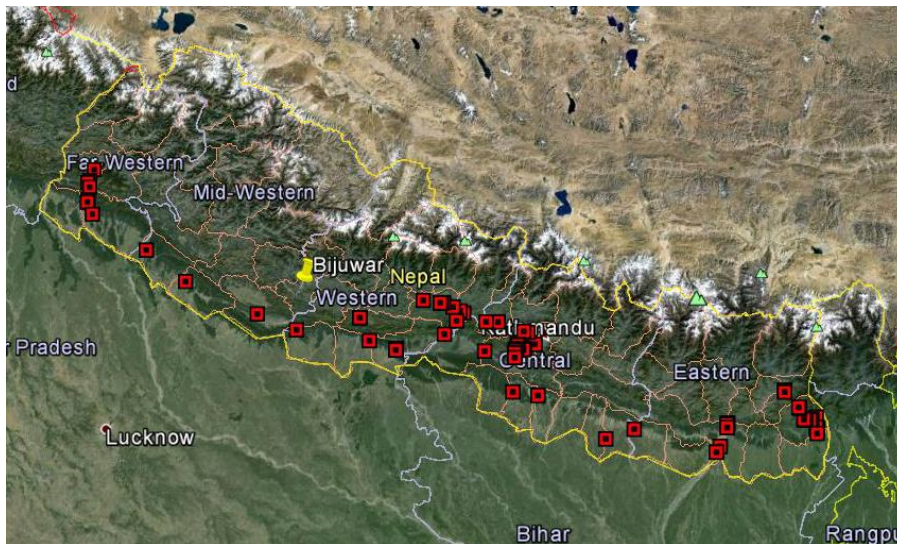
Itinerary

29 Oct.	Arrive Kathmandu
30 Oct – 5 Nov.	Herbarium Study at KATH herbarium and preparation for field trip.
6 Nov	Kathmandu – Hetauda
7 Nov	Collection around Daman (Makwanpur)
8 Nov	Daman (Makwanpur)–Butwal (Rupandehi)
9 Nov	Butwal (Rupandehi) – Bardia NP (Bardia)
10 Nov	Bardia NP (Bardia) – Budar (Doti)
11 Nov	Budar (Doti) – Sahukharka (Dadeldhura) – Nepalgunj (Banke)
12 Nov	Nepalgunj (Banke) – Butwal (Rupandehi)
13 Nov	Butwal (Rupandehi) – Bhairabsthan (Palpa)
14 Nov	Bhairabsthan (Palpa) – Kathmandu
15 Nov – 17Nov	Tihar break and sorting out the specimens and silica gel
18 Nov	Kathmandu – Melekhu (Dhading) – Pathlaiya (Bara)
19 Nov	Pathlaiya (Bara) – Prayag Chock (Siraha) – Jhapa
20 Nov	Jhapa – Tinghare (Illam)
21 Nov	Tinghare (Illam) – Phidim (Panchthar)
22 Nov	Phidim (Panchthar) – Kakabhitta (Jhapa)
23 Nov	Kakabhitta (Jhapa) – Satasidham (Jhapa) – Dharan (Sunsari)
24 Nov	Planned for Dhankutta but stopped due to strike in eastern Nepal.
25 Nov	Itahari (Sunsari) – Koshi Tappu (Sunsari) – Baraha Chetra (Sunsari) – Dhalkebar (Dhanusa)
26 Nov	Dhalkebar (Dhanusa) – Chitwan (Chitwan)
27 Nov	(Chitwan) Chitwan – Pokhara (Kaski)
28 Nov	Pokhara (Kaski) – Kathmandu
29 Nov – 3 Dec	Herbarium study at KATH and TUCH, sorting out herbarium specimens and silica gel samples
5 Dec	Arrive in Edinburgh

Results

A total of 103 specimens (Appendix 2) along with silica gel dried leaf samples for DNA studies were collected, and all the associated data are incorporated into the PADME database. All these data are available online in <http://rbg-web2.rbge.org.uk/nepal/locator/index.html> under the expedition title Acanths 2012.

Three sets of herbarium specimens were collected and deposited at National Herbarium and Plant Laboratories, Nepal (KATH), Royal Botanic Garden Edinburgh (E) and University of Tokyo herbarium (TI). The image profile for all species were made in the field and incorporated into the database (For example image profile for *Barleria cristata* L., Fig 1). A total of 40 species were observed and collected in the field out of 71 reported from Nepal. After examining *Thunbergia* in the wild, the previously wrongly named specimen has been identified and described as a new species (Adhikari *et al.*, in preparation).



Map 1. Collection localities of specimens.

Two species (*Rungia repens* Nees and *Strobilanthes helicta* T. Anderson) has already been identified as new to flora of Nepal and at least two more species will be described as new to science. The progress on the revision of the family Acanthaceae is summarized in Appendix 3 and a sample of the taxonomic account is given in Appendix 1.

Finance

Air ticket: £1008.84

Field cost: £2508.30

Total: £ 3517.14

Receipts and details of expenses are submitted to the Finance department at RBGE.

Acknowledgements

I would like to thank Davis Expedition Fund and Sibbald Trust for funding this project.

References

Adhikari, B., Wood, J.R.I., Watson, F & Pendry, C.A. (in preparation). An account of *Thunbergia* (Acanthaceae) in Nepal, with a description of the new species *T. nepalensis*.

Press, J. R., Shrestha K. K. and Sutton, D. A. (2000). *Annotated Checklist of the Flowering Plants of Nepal*. The Natural History Museum, London.

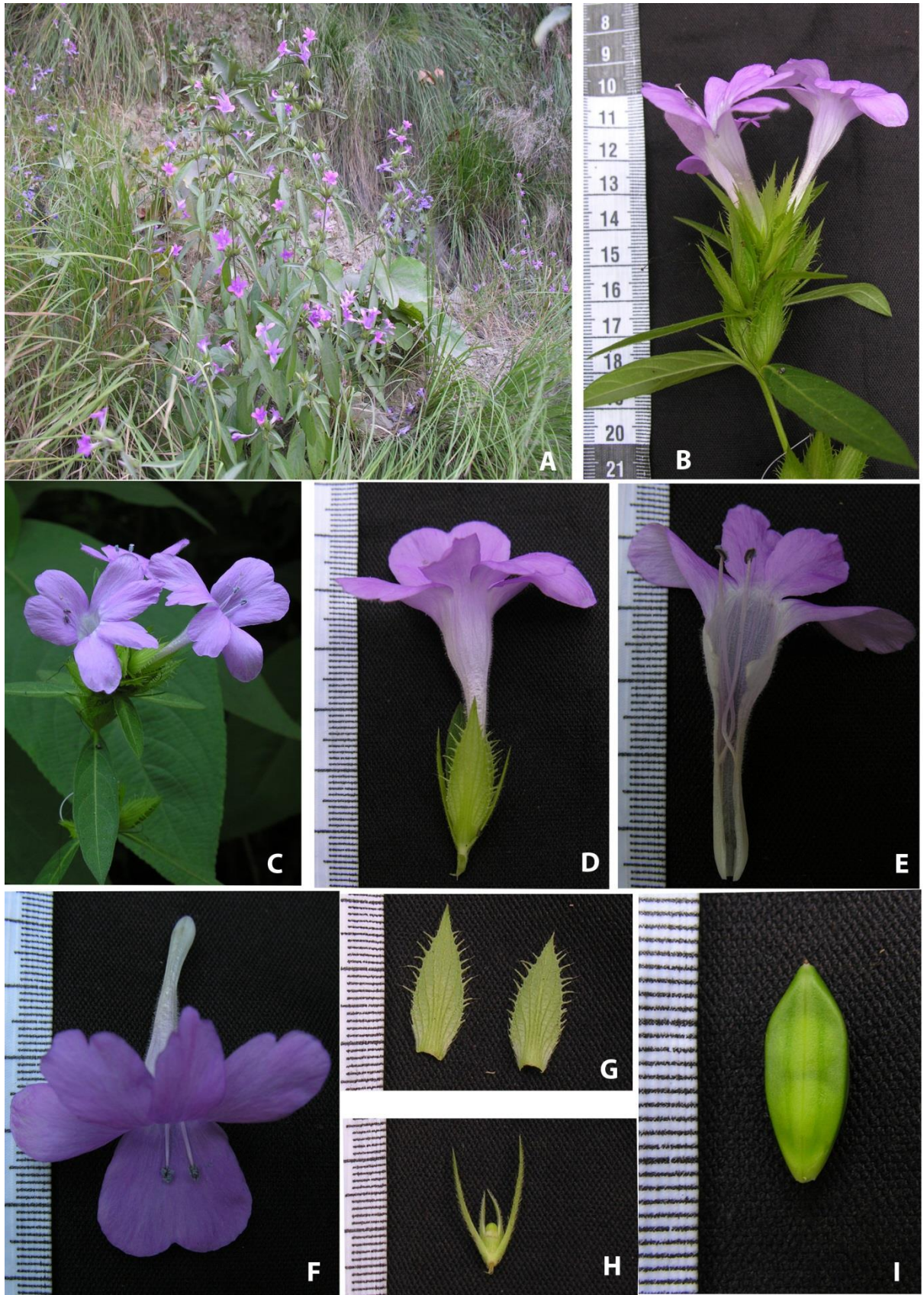


Fig. 1. Species profile for *Barleria cristata*: **A.** Habitat. **B, C.** Inflorescence. **D.** Single flower. **E.** Flower opened showing stamens. **F.** Flower (front view). **G.** Bracteoles. **H.** Calyx. **I.** Capsule.

Appendix 1. A sample of the taxonomic account (genus *Hygrophila*).

Hygrophila R.Br., Prodr. Fl. Nov. Holland.: 479. (1810).

Erect or decumbent herbs or undershrubs. Spines present or absent. Leaves sessile or shortly petiolate, opposite or in whorls. Flowers in terminal or axillary clusters, or both. Bracts present, bracteoles present or absent. Calyx 4–5-lobed, lobes usually unequal. Corolla distinctly 2-lipped, upper lip 2-lobed, lower lip 3-lobed. Stamens 2 or 4, didynamous. Capsule oblong, 4-many seeded.

Worldwide 25 species, tropical and subtropical regions. Four species in Nepal.

Key to the species

- 1a. Spines present, calyx 4-lobed.....**1. H. auriculata**
1b. Spines absent, calyx 5-lobed.....2
- 2a. Corolla 5–7 mm. Fertile stamens 2.....**3.H. polysperma**
2b. Corolla 14-16 mm. Fertile stamens 4.....3
- 3a. Leaves oblong or oblong lanceolate, 0.4–1 cm wide, margin entire.....**2.H. salicifolia**
3b. Leaves obovate to elliptic, 1.5–3 cm wide, margin crenate to serrate.....**4.H. difformis**

1. Hygrophila auriculata (Schumach.) Heine, Kew Bull. 16: 172. (1962).

Barleria auriculata Schumach., Beskr. Guin. Pl.: 285 (1827).

ताल मखाना Tal makhna

Erect spiny herbs or undershrubs to 1.5 m. Spines (4–) 6 (–9), 1–3.5 cm. Stem usually 4-angled, sulcate, sparsely to densely hispid. Leaves 4–6 in whorls, unequal, oblong or oblong to lanceolate, 3–19 × 1–1.5 cm, base cuneate, apex acute, margin entire or undulate, hispidulous, sometimes enrolled, surfaces sparsely to densely hispid. Flowers 3–6 in dense axillary whorls. Bracts oblong, 2–2.5 × 0.3–0.7 cm, hispid. Calyx 4-lobed, oblong-lanceolate, unequal, one larger 1.8–2 × 0.3–0.5 cm, smaller 12–15 × 1.5–2 mm, apex acute, one lobe bifid, margin scarious, ciliate. Corolla purple blue with yellow spot on the middle lobe of lower lip, 4–4.5 cm, tube 12–15 mm, 2-lipped, upper lip 18–20 mm, lobes oblong ovate, 5.5 × 4 mm, lower lip 17–20 mm, lobes oblong ovate 8–9 × 3.5–4 mm, long hairs inside in palate. Filaments longer pair 8–10 mm, shorter pair 4–5 mm, anthers 2.5 mm. Ovary oblong ovoid, glabrous, style 3 cm, stigma linear.

Distribution: Nepal (West, Central, East), W Himalaya, E Himalaya, S Asia, Assam-Burma.

Altitudinal range: 50-600 (-1250) m.

Ecology: On wet places along roadsides, wasteland and rice fields.

Flowering: October-March. **Fruiting:** November-March.

Note: *Hygrophila auriculata* is easily recognised by its spiny habit. *H. auriculata* is the most common species among Nepalese *Hygrophila*, mainly grows in wet areas along roadsides and rice fields in Tarai.

2. *Hygrophila salicifolia* (Vahl) Nees, Pl. Asiat. Rar. 3[12]: 81. (1832).

Ruellia salicifolia Vahl, Symb. Bot. 3: 84 (1794).

Erect or decumbent herbs to 70 cm. Spines absent. Stem usually 4-angled, sulcate, glabrous. Leaves usually 2, rarely 4 in whorls, oblong or oblong lanceolate, 4–9 × 0.4–1 cm, base cuneate, apex acute, margin entire, sometimes enrolled, hispidulous, surfaces glabrous with prominent cystoliths. Flowers 4–many in dense axillary whorls. Bracts lanceolate, 10–15 × 2.5–3 mm, hispid. Calyx 5-lobed, oblong-lanceolate, unequal, one larger 11 × 1 mm, smaller 8–8.5 × 1–1.5 mm, apex acute margin, densely hispid. Corolla bluish white with brownish yellow spot on the middle lobe of lower lip, 14–16 mm, tube 8–9 mm, upper lip 6–7 mm, lobes ovate, 1 × 1 mm, lower lip 6–7 mm, lobes ovate 1 × 1 mm, long hairs inside in palate. Filaments longer pair 5 mm, shorter pair 1.5 mm, anthers 2 mm. Ovary oblong ovoid, glabrous, style 1 cm, stigma linear. Capsule glabrous, 14–16 mm.

Distribution: Nepal (West, Central, East), E Himalaya, E Asia, Assam-Burma, SE Asia, S Asia.

Altitudinal range: 200–900 m.

Ecology: On wet places along roadsides, wasteland and rice fields.

Flowering: October-December. **Fruiting:** November-January.

Note: *H. salicifolia* is closely related to *H. auriculata* but differs by its spineless stems and 5-lobed calyx.

3. *Hygrophila polysperma* (Roxb.) T. Anderson, J. Linn. Soc., Bot. 9: 456. (1867).

Justicia polysperma Roxb., Fl. Ind. 1: 120 (1820).

Prostrate or decumbent herbs to 50 cm. Spines absent. Stem usually 4-angled, sulcate, glabrous to puberulent. Leaves usually 2, narrowly elliptic or narrowly oblanceolate, 1–3.5 × 0.5–1.4 cm, base cuneate, apex acute, margin entire, surfaces glabrous. Flowers many in terminal dense spikes, sometimes in axillary whorls. Bracts oblong to narrowly elliptic, 5.5–7 × 2–3.3 mm, hispid. Bracteole oblong or linear, 4.5–5 × 0.5–1 mm, hispid. Calyx 5-lobed, linear-lanceolate, subequal, 4–4.5 × 0.7–1 mm, apex acute, margin ciliate. Corolla white or bluish white, 5–7 mm, tube 3–4 mm, upper lip 2–3 mm, lobes 0.7–1 × 0.7 × 1 mm, oblong, lower lip ca. 2 mm, lobes oblong-obovate, ca. 2 × 1 mm. Filament 2, 2 mm, staminodes 1 mm,

anthers ca. 1 mm. Ovary oblong ovoid, pubescent, style 3 mm, stigma capitate. Capsule puberulent, 7–8 mm.

Distribution: Nepal (West, Central, East), E Himalaya, E Asia, Assam-Burma, S Asia.

Altitudinal range: 150-900 m.

Ecology: Along wet areas on waste lands.

Flowering: November-May. **Fruiting:** December-May.

Note: *H. polysperma* is easily distinguished from other Nepalese *Hygrophila* by its small flowers less than 8 mm.

4. *Hygrophila difformis* (L.f.) Blume, Bijdr. Fl. Ned. Ind. [14]: 803. (1826).

Ruellia difformis L.f., Suppl. Pl. 289 (1782).

Decumbent herbs to 50 cm. Spines absent. Stem angled, sulcate, densely pubescent. Petiole 0–5 mm. Leaves usually 2, opposite, obovate to elliptic, 2–6 × 1.5–3 cm, base cuneate or attenuate to a petiole, apex obtuse or rounded, margin crenate to serrate, surfaces pubescent specially at veins. Flowers 2-many in terminal and axillary whorls. Bracts elliptic–obovate 6–9 × 4–5.5 mm, surface with both glandular and eglandular hairs. Bracteole lanceolate, 4–4.5 × 1.2–1.5 mm, hairy both glandular and eglandular hairs. Calyx 5-lobed, sub-equal, 7–7.5 × 0.8–1 mm, densely hairy, hairs glandular and eglandular. Corolla 1.5 cm, tube 6 mm, upper lip 2 mm, lobes 1 × 1 mm, oblong, lower lip ca 6 mm, lobes oblong–obovate, ca 1–1.5 × 1–2 mm. Filament longer pair 4 mm, shorter pair 2 mm, anthers 1 mm. Ovary pubescent, style 8 mm, pubescent, stigma linear. Capsule pubescent, ca. 1 cm.

Distribution: Nepal (East), W Himalaya, E Himalaya, S Asia, Assam-Burma.

Ecology: On wet places.

Flowering: January-April. **Fruiting:** February-May.

Note: *H. difformis* is recorded only from two localities in eastern Nepal. The description in this account is based on Indian specimens. This species sometimes has peculiar pinnatifid leaves at the base of stem. The specimens used for this description lack these types of leaves, and therefore this character has not been used as key characters. This species is easily recognised by its crenate to serrate margin leaves.

Appendix 2. List of collection made during the trip.

Determination	Coll. No.	Coll. Date	Altitude	Latitude	Longitude	Locality
<i>Strobilanthes pentstemonoides</i> (Nees) T.Anderson	1	6 Nov. 2012	1467 m	27° 36' 12" N	85° 15' 15" E	Kathmandu District: Dakshinkali
<i>Hypoestes triflora</i> (Forssk.) Roem. & Schult.	2	6 Nov. 2012	1933 m	27° 34' 8" N	85° 8' 49" E	Makwanpur District: Deurali
<i>Aechmanthera tomentosa</i> Nees	3	6 Nov. 2012	1710 m	27° 33' 35" N	85° 8' 13" E	Makwanpur District: Gadi
<i>Eranthemum ciliatum</i> (Craib) Benoist	4	6 Nov. 2012	518 m	27° 29' 20" N	85° 2' 52" E	Makwanpur District: Bhainse
<i>Strobilanthes</i> Blume	5	7 Nov. 2012	768 m	27° 31' 39" N	85° 2' 46" E	Makwanpur District: Saune Khola
<i>Strobilanthes</i> Blume	6	7 Nov. 2012	768 m	27° 31' 39" N	85° 2' 46" E	Makwanpur District: Saune Khola
<i>Strobilanthes</i> Blume	7	7 Nov. 2012	768 m	27° 31' 39" N	85° 2' 46" E	Makwanpur District: Saune Khola
<i>Strobilanthes</i> Blume	8	7 Nov. 2012	768 m	27° 31' 39" N	85° 2' 46" E	Makwanpur District: Saune Khola
<i>Strobilanthes</i> Blume	9	7 Nov. 2012	1521 m	27° 33' 12" N	85° 3' 31" E	Makwanpur District: Lamidanda
<i>Strobilanthes</i> Blume	10	7 Nov. 2012	1748 m	27° 34' N	85° 3' 54" E	Makwanpur District: Mahabhir
<i>Strobilanthes</i> Blume	11b	7 Nov. 2012	1748 m	27° 34' N	85° 3' 54" E	Makwanpur District: Mahabhir
<i>Strobilanthes</i> Blume	12	7 Nov. 2012	2231 m	27° 36' 19" N	85° 4' 50" E	Makwanpur District: Daman Botanical Garden
<i>Strobilanthes</i> Blume	13	7 Nov. 2012	2306 m	27° 36' N	85° 4' 46" E	Makwanpur District: Daman
<i>Strobilanthes</i> Blume	14	7 Nov. 2012	2306 m	27° 36' N	85° 4' 46" E	Makwanpur District: Daman
<i>Strobilanthes</i> Blume	15	7 Nov. 2012	2306 m	27° 36' N	85° 4' 46" E	Makwanpur District: Daman
<i>Strobilanthes lamiifolia</i> (Nees) T.Anderson	16	7 Nov. 2012	1621 m	27° 33' 19" N	85° 3' 39" E	Makwanpur District: Namtar VDC
<i>Strobilanthes</i> Blume	17	7 Nov. 2012	1621 m	27° 33' 19" N	85° 3' 39" E	Makwanpur District: Namtar VDC
<i>Eranthemum ciliatum</i> (Craib) Benoist	18	8 Nov. 2012	272 m	27° 32' 58" N	84° 44' 44" E	Makwanpur District: Nayabasti
<i>Barleria cristata</i> L.	19	8 Nov. 2012	207 m	27° 42' 13" N	84° 20' 30" E	Nawalparasi District: Narayanghat
<i>Barleria cristata</i> L.	20	8 Nov. 2012	265 m	27° 34' 51" N	83° 51' 13" E	Nawalparasi District: Daunne
<i>Justicia</i> L.	21	8 Nov. 2012	265 m	27° 34' 51" N	83° 51' 13" E	Nawalparasi District: Daunne
<i>Eranthemum ciliatum</i> (Craib) Benoist	22	8 Nov. 2012	418 m	27° 33' 59" N	83° 51' 2" E	Nawalparasi District: Daunne
<i>Barleria strigosa</i> Willd.	23	8 Nov. 2012	418 m	27° 33' 59" N	83° 51' 2" E	Nawalparasi District: Daunne
<i>Barleria strigosa</i> Willd.	24	8 Nov. 2012	418 m	27° 33' 59" N	83° 51' 2" E	Nawalparasi District: Daunne
<i>Ruellia</i> L.	25	8 Nov. 2012	140 m	27° 39' N	83° 35' 2" E	Rupandehi District: Devdaha
<i>Barleria cristata</i> L.	26	9 Nov. 2012	269 m	27° 44' 50" N	82° 50' 33" E	Kapilvastu District
<i>Hygrophila auriculata</i> (Schumach.) Heine	27	9 Nov. 2012				Dang District
<i>Peristrophe bicalyculata</i> (Retz.) Nees	28	9 Nov. 2012	228 m	27° 53' 21" N	82° 26' 15" E	Dang District: Satbariya
<i>Hemigraphis hirta</i> (Vahl) T.Anderson	29	9 Nov. 2012	192 m	28° 27' 58" N	81° 15' 7" E	Bardia District: Thakur Dwara
<i>Justicia</i> L.	30	9 Nov. 2012	182 m	28° 27' 58" N	81° 15' 7" E	Bardia District: Thakur Dwara

Justicia L.	31	10 Nov. 2012	182 m	28° 47' 49" N	80° 38' 57" E	Kailali District: Balmi
Hygrophila salicifolia (Vahl) Nees	32	10 Nov. 2012	182 m	28° 47' 49" N	80° 38' 57" E	Kailali District: Balmi
Strobilanthes Blume	33	10 Nov. 2012	751 m	28° 54' 41" N	80° 34' 58" E	Kailali District: Godavari Kailali - Budhetola
Barleria cristata L.	34	10 Nov. 2012	751 m	28° 54' 41" N	80° 34' 58" E	Kailali District: Godavari Kailali - Budhetola
Strobilanthes Blume	35	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Dicliptera bupleuroides Nees	36	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Strobilanthes Blume	37	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Justicia L.	38	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Strobilanthes Blume	39	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Dicliptera bupleuroides Nees	40	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Strobilanthes Blume	41	10 Nov. 2012	1137 m	28° 56' N	80° 35' 12" E	Kailali District: Budhetola
Strobilanthes Blume	42	11 Nov. 2012	1409 m	29° 5' 49" N	80° 34' 5" E	Doti District: Budar
Strobilanthes auriculata Nees	43	11 Nov. 2012	1409 m	29° 5' 49" N	80° 34' 5" E	Doti District: Budar
Strobilanthes Blume	44	11 Nov. 2012	1409 m	29° 5' 49" N	80° 34' 5" E	Doti District: Budar
Strobilanthes Blume	45	11 Nov. 2012	1685 m	29° 6' 56" N	80° 35' 27" E	Doti District: Ghanteswor
Justicia L.	46	11 Nov. 2012	1995 m	29° 13' 16" N	80° 37' 42" E	Dadeldhura District: Sahukharka
Strobilanthes Blume	47	11 Nov. 2012	1427 m	29° 3' 11" N	80° 35' 40" E	Doti District: Galtude
Barleria strigosa Willd.	48	11 Nov. 2012	820 m	28° 54' 55" N	80° 34' 59" E	Kailali District: Godavari Kailali
Justicia L.	49	12 Nov. 2012	162 m	28° 10' 48" N	81° 40' 53" E	Banke District: Nepalganj
Strobilanthes Blume	50	13 Nov. 2012	1276 m	27° 51' 20" N	83° 29' 7" E	Palpa District: Masure
Strobilanthes Blume	51	13 Nov. 2012	1276 m	27° 51' 20" N	83° 29' 7" E	Palpa District: Masure
Strobilanthes Blume	53	18 Nov. 2012	1188 m	27° 42' 43" N	85° 11' 16" E	Kathmandu District: Thankot
Justicia L.	54	18 Nov. 2012	895 m	27° 43' 14" N	85° 8' 44" E	Dhading District: Naubise
Barleria cristata L.	55	18 Nov. 2012	388 m	27° 48' 27" N	84° 53' 13" E	Dhading District: Galaundi
Labiatae	56	18 Nov. 2012	357 m	27° 48' 4" N	84° 50' 33" E	Dhading District: Malekhu
Strobilanthes divaricata (Nees) T.Anderson	57	18 Nov. 2012	373 m	27° 48' 38" N	84° 46' 1" E	Dhading District: Malekhu
Barleria strigosa Willd.	58	18 Nov. 2012	258 m	27° 49' 19" N	84° 28' 1" E	Chitwan District: Ghumaune
Eranthemum ciliatum (Craib) Benoist	59	19 Nov. 2012	161 m	27° 11' 9" N	85° 1' 10" E	Bara District: Pathlaiya
Hygrophila auriculata (Schumach.) Heine	60	19 Nov. 2012	118 m	26° 50' 22" N	86° 13' E	Siraha District: Pryagpur Chock
Barleria L.	61	20 Nov. 2012	304 m	26° 45' 2" N	88° 3' 57" E	Jhapa District: Happen chock
Peristrophe bicalyculata (Retz.) Nees	62	20 Nov. 2012	577 m	26° 47' 19" N	88° 4' 19" E	Jhapa District: Sunmai
Barleria strigosa Willd.	63	20 Nov. 2012	758 m	26° 47' 40" N	88° 3' 55" E	Ilam District: Kolbas

<i>Dicliptera bupleuroides</i> Nees	64	20 Nov. 2012	758 m	26° 47' 40" N	88° 3' 55" E	Ilam District: Kolbas
<i>Strobilanthes</i> Blume	65	20 Nov. 2012	758 m	26° 47' 40" N	88° 3' 55" E	Ilam District: Kolbas
<i>Strobilanthes</i> Blume	66	20 Nov. 2012	758 m	26° 47' 40" N	88° 3' 55" E	Ilam District: Kolbas
<i>Thunbergia fragrans</i> Roxb.	67	20 Nov. 2012	758 m	26° 47' 40" N	88° 3' 55" E	Ilam District: Kolbas
<i>Justicia</i> L.	68	20 Nov. 2012	912 m	26° 48' 18" N	88° 3' 45" E	Ilam District: Bhale Joda
<i>Strobilanthes</i> Blume	69	20 Nov. 2012	1546 m	26° 53' 42" N	88° 4' 9" E	Ilam District: Fikkal
<i>Phlogacanthus</i> Nees	70	20 Nov. 2012	1626 m	26° 52' 41" N	88° 1' 29" E	Ilam District: Tinghare
<i>Strobilanthes</i> Blume	71	21 Nov. 2012	1551 m	26° 52' 14" N	88° 3" E	Ilam District: Bhalukhop
<i>Strobilanthes</i> Blume	72	21 Nov. 2012	960 m	26° 52' 39" N	87° 57' 44" E	Ilam District: Goduk
<i>Strobilanthes</i> Blume	73	21 Nov. 2012	859 m	26° 52' 35" N	87° 57' 11" E	Ilam District: Goduk
<i>Strobilanthes</i> Blume	74	21 Nov. 2012	859 m	26° 52' 35" N	87° 57' 11" E	Ilam District: Goduk
<i>Strobilanthes</i> Blume	75	21 Nov. 2012	792 m	26° 52' 39" N	87° 56' 29" E	Ilam District: Selpur
<i>Strobilanthes</i> Blume	76	21 Nov. 2012	792 m	26° 52' 39" N	87° 56' 29" E	Ilam District: Selpur
<i>Strobilanthes</i> Blume	77	21 Nov. 2012	1308 m	26° 58' 38" N	87° 54' 25" E	Ilam District: Malato
<i>Strobilanthes</i> Blume	78	22 Nov. 2012	1272 m	27° 8' 24" N	87° 45' 57" E	Panchthar District: Phidim
<i>Echinacanthus attenuatus</i> Nees	79	22 Nov. 2012	1272 m	27° 8' 24" N	87° 45' 57" E	Panchthar District: Phidim
<i>Strobilanthes</i> Blume	80	22 Nov. 2012	1272 m	27° 8' 24" N	87° 45' 57" E	Panchthar District: Phidim
<i>Strobilanthes</i> Blume	81	22 Nov. 2012	1782 m	27° 7' 33" N	87° 45' 58" E	Panchthar District: Ramite Danda
<i>Peristrophe speciosa</i> (Roxb.) Nees	82	22 Nov. 2012	1288 m	26° 59' 15" N	87° 53' 53" E	Ilam District: Puwa Khola
<i>Barleria strigosa</i> Willd.	83	23 Nov. 2012	244 m	26° 41' 4" N	87° 48' 53" E	Jhapa District: Satasidham temple
<i>Echinacanthus attenuatus</i> Nees	84	23 Nov. 2012	244 m	26° 41' 4" N	87° 48' 53" E	Jhapa District: Satasidham temple
<i>Strobilanthes</i> Blume	85	23 Nov. 2012	244 m	26° 41' 4" N	87° 48' 53" E	Jhapa District: Satasidham temple
<i>Thunbergia grandiflora</i> Roxb.	86	23 Nov. 2012	244 m	26° 43' 26" N	87° 16' 45" E	Sunsari District
<i>Thunbergia coccinea</i> Wall. ex D. Don	87	25 Nov. 2012	73 m	26° 37' 9" N	87° 1' 44" E	Sunsari District: Koshi Tappu Wild Life Reserve
<i>Thunbergia grandiflora</i> Roxb.	88	25 Nov. 2012	84 m	26° 40' 5" N	87° 4' 10" E	Sunsari District: Prakashpur
<i>Eranthemum ciliatum</i> (Craib) Benoist	89	25 Nov. 2012	124 m	26° 49' 52" N	87° 9' 11" E	Sunsari District: Chatara
<i>Echinacanthus attenuatus</i> Nees	90	25 Nov. 2012	162 m	26° 51' 37" N	87° 9' 10" E	Sunsari District: Baraha Chetra
<i>Strobilanthes</i> Blume	91	25 Nov. 2012	162 m	26° 51' 37" N	87° 9' 10" E	Sunsari District: Baraha Chetra
<i>Strobilanthes</i> Blume	92	25 Nov. 2012	162 m	26° 51' 37" N	87° 9' 10" E	Sunsari District: Baraha Chetra
<i>Strobilanthes</i> Blume	93	25 Nov. 2012	162 m	26° 52' 18" N	87° 9' 41" E	Sunsari District: Barah Chetra Mandir
<i>Strobilanthes</i> Blume	94	25 Nov. 2012	162 m	26° 52' 18" N	87° 9' 41" E	Sunsari District: Barah Chetra Mandir
<i>Hygrophila auriculata</i> (Schumach.) Heine	95	26 Nov. 2012	59 m	26° 45' 40" N	85° 55' 43" E	Dhanusa District: Dhalkebar

<i>Barleria cristata</i> L.	96	26 Nov. 2012	151 m	27° 9' 7" N	85° 16' 11" E	Bara District: Nijgadh
<i>Dicliptera bupleuroides</i> Nees	97	27 Nov. 2012	323 m	27° 53' 31" N	84° 32' 22" E	Tanahu District: Aanbu Khaireni
<i>Strobilanthes</i> Blume	98	27 Nov. 2012	413 m	27° 56' 51" N	84° 26' 1" E	Tanahu District: Naya Pul
<i>Strobilanthes</i> Blume	99	27 Nov. 2012	576 m	27° 59' 15" N	84° 20' 7" E	Tanahu District: Ghansi Kuwa
<i>Strobilanthes</i> Blume	100	28 Nov. 2012	480 m	28° 36" N	84° 7' 48" E	Kaski District: Tur Ture
<i>Strobilanthes divaricata</i> (Nees) T.Anderson	101	28 Nov. 2012	371 m	27° 59' 10" N	84° 18' 15" E	Tanahu District: Ghansi Kuwa
<i>Strobilanthes</i> Blume	102	28 Nov. 2012	371 m	27° 59' 10" N	84° 18' 15" E	Tanahu District: Ghansi Kuwa
<i>Strobilanthes</i> Blume	103	28 Nov. 2012	371 m	27° 59' 15" N	84° 19' 57" E	Tanahu District: Ghansi Kuwa
<i>Peristrophe speciosa</i> (Roxb.) Nees	104	28 Nov. 2012	361 m	27° 54' 43" N	84° 30' 13" E	Tanahu District: Aanbu Khaireni

Appendix 3. A summary of progress on the revision of the family Acanthaceae for Flora of Nepal

LIST OF TAXON (Press et. al. 2000)	RECENT NOMENCLATURAL CHANGES	COLLECTED DURING ACANTHS 2012	TAXONOMIC ACCOUNT
<i>Aechmanthera claudiae</i> Bernardi	<i>Strobilanthes tomentosa</i> (Nees) J. R. I. Wood	Yes	No
<i>Aechmanthera gossypina</i> (Wall.) Nees	<i>Strobilanthes tomentosa</i> (Nees) J. R. I. Wood		
<i>Asystasia macrocarpa</i> Nees		No (Fl. Feb-April)	Yes
<i>Barleria cristata</i> L.		Yes	Yes
<i>Barleria strigosa</i> Willd		Yes	Yes
<i>Crossandra infundibuliformis</i> (L.) Nees		No (Fl. May)	Yes
<i>Dicliptera bupleuroides</i> Nees		Yes	Yes
<i>Dicliptera riparia</i> Nees		No	No specimens
<i>Dipteracanthus prostratus</i> (Poir.) Nees	<i>Ruellia prostrata</i> Poir.	No	No specimens
<i>Ecbolium linneanum</i> Kurz		No	No specimens
<i>Echinacanthus attenuatus</i> Nees		Yes	Yes
<i>Echinacanthus longistylus</i> C.B. Clarke	<i>Clarkeasia parviflora</i> (T.Anderson) J.R.I. Wood = <i>Strobilanthes violifolia</i> T.Anderson	Yes	No
<i>Eranthemum pulchellum</i> Andrews		No (Fl. March-April)	Yes
<i>Eranthemum purpurascens</i> Nees		Yes	Yes
<i>Eranthemum splendens</i> (T. Anderson) Siebert & Voss		No (Fl. March-April)	Yes
<i>Hemigraphis hirta</i> (Vahl) T. Anderson		No (Fl. Feb.-May)	No
<i>Hygrophila auriculata</i> (Schumach.) Heine		Yes	Yes
<i>Hygrophila difformis</i> (L. f.) Blume		No (Fl. Jan.-April)	Yes
<i>Hygrophila polysperma</i> (Roxb.) T. Anderson		No	Yes
<i>Hygrophila salicifolia</i> (Vahl) Nees		Yes	Yes
<i>Hypoestes triflora</i> (Forssk.) Roem. & Schult.		Yes	Yes
<i>Justicia adhatoda</i> L		No (Fl. Jan.-April)	In preparation
<i>Justicia diffusa</i> Willd		Yes	In preparation

Justicia procumbens var. simplex (D. Don) T. Yamaz.	Justicia simplex D. Don	Yes	In preparation
Justicia pubigera (Nees) C. B. Clarke		No	In preparation
Justicia quinqueangularis Koenig ex Roxb		Yes	In preparation
Justicia tukuchensis V. A. W. Graham,		No	In preparation
Lepidagathis cuspidata Nees		No (Fl. Feb.-April)	Yes
Lepidagathis incurva Buch.-Ham. ex D. Don		No (Fl. Jan.-June)	Yes
Lepidagathis purpuricaulis Nees		No (Fl. March-May)	Yes
Nelsonia canescens (Lam.) Spreng		No (Feb.-April)	Yes
Peristrophe paniculata (Forssk.) Brummitt	Peristrophe bicalyculata (Retz.) Nees	Yes	Yes
Peristrophe speciosa (Roxb.) Nees		Yes	Yes
Petalidium barlerioides Nees		No (Fl. April-Aug.)	Yes
Phaulopsis imbricata (Forssk.) Sweet		No	No specimens
Phlogacanthus pubinervius T. Anderson		No (Jan.-March)	Yes
Phlogacanthus thyriformis (Roxb. ex Hardw.) D/J. Mabberley		No (Jan.-March)	Yes
Pseuderanthemum indicum (Nees) A.M. Cowan & Cowan	Mackaya indica (Nees) Ensermu	No (Jan.-April)	Yes
Pseuderanthemum palatiferum (Wall.) Radlk. ex Lindau		No (April)	Yes
Ruellia beddomei C. B. Clarke		No	No
Ruellia tuberosa L.		Yes	No
Rungia himalayensis C. B. Clarke		No	In preparation
Rungia parviflora (Retz.) Nees	Rungia pectinata (L.) Nees	Yes	In preparation
Staurogyne polybotrya (Nees) Kuntze		No	Yes
Strobilanthes angustifrons C. B. Clarke		Yes	No
Strobilanthes attenuata subsp. nepalensis J. R. I. Wood		Yes	No
Strobilanthes auriculata Nees		Yes	No
Strobilanthes bheriensis (Shakya) J. R. I. Wood		No	No
Strobilanthes bracteata (Nees) J. R. I. Wood		Yes	No
Strobilanthes capitata (Nees) T. Anderson		Yes	No

Strobilanthes cuneata (Shakya) J. R. I. Wood		No	No
Strobilanthes colorata (Steud.) Bosser & Heihe.	Strobilanthes hamiltoniana (Steud.) Bosser & Heine	No	No
Strobilanthes divaricata (Nees) T. Anderson		Yes	No
Strobilanthes extensa (Nees) Nees		Yes	No
Strobilanthes glutinosa Nees		No	No
Strobilanthes lachenensis C. B. Clarke		Yes	No
Strobilanthes lamiifolia (Nees) T. Anderson		Yes	No
Strobilanthes multidentata C.B. Clarke		Yes	No
Strobilanthes nutans (Nees) T. Anderson		No	No
Strobilanthes oligocephala T. Anders		Yes	No
Strobilanthes pentstemonoides var. pentstemonoides (Nees) T. Anderson		Yes	No
Strobilanthes pentstemonoides var. dalhousieana (Nees) J. R. I. Wood		Yes	No
Strobilanthes sabiniana (Wall. ex Lindl.) Nees		Yes	No
Strobilanthes saccata J. R. I. Wood		No	No
Strobilanthes subnudata C.B. Clarke		No	No
Strobilanthes tamburensis C. B. Clarke		No	No
Strobilanthes thomsonii T. Anderson		Yes	No
Strobilanthes wallichii Nees		Yes	No
Sympagis petiolaris (Nees) Bremek.	Strobilanthes lachenensis C. B. Clarke		No
Tarphochlamys affinis (Giff.) Bremek.	Strobilanthes acrocephala T. Anderson	No	No
Thunbergia coccinea Wall. ex D. Don		Yes	Yes
Thunbergia fragrans Roxb.		Yes	Yes
Thunbergia grandiflora Roxb.		Yes	Yes
Thunbergia lutea T. Anderson		No	Yes
NEW ADDITION REPORTED - PREVIOUS STUDIES			
Barleria prionites L.		No	Yes

Eranthemum ciliatum (Craib) Benoist	Eranthemum purpurascens Nees	Yes	Yes
Strobilanthes inflatus T. Anderson		No	No
Andrographis paniculata (Burm. f.) Nees		No	No
NEW ADDITION DURING THIS STUDY			
Rungia repens Nees (New to Flora of Nepal)			
Strobilanthes helicta T. Anderson (New to Flora of Nepal)			
Thunbergia nepalensis Bh.Adhikari & J.R.I. Wood (ready to submit to Kew Bulletin)			
Eranthemum sp. (possible new to Flora of Nepal/Science)			
Justicia sp. (possible new to Flora of Nepal/Science)			
Strobilanthes spp. (at least 2 new taxa)			