

## BOTANICAL NOTES ON THE FLORA OF NORTHERN THAILAND: 6<sup>1</sup>

*J. F. Maxwell*<sup>2</sup>

### ABSTRACT

Six species of vascular plants are reported as new records for the flora of Thailand. Fruits are described for one them, viz. *Polygonatum kingianum* Coll. & Hemsl. (Liliaceae) and also for *Dalbergia lacei* Prain (Leguminosae, Papilionoideae).

### RUTACEAE

#### *Atalantia roxburghiana* Hk. f. NEW RECORD

Previously recorded from Annam (Vietnam) and peninsular Malaysia (GUILLAUMIN, 1946; STONE 1972), I have now found this species in Doi Luang National Park, SW side at Wahng (Wang) Gayo Falls, Wahng Nua District, Lampang Province, at 625 m (Maxwell 97–248), 26 March 1997). Flowering material was collected from an evergreen treelet 5 m tall with a dbh of 3–7 cm in mixed, primary evergreen + deciduous, seasonal, hardwood forest on shale and limestone bedrocks in a stream valley. It differs from *Atalantia monophylla* (L.) DC., which is also found in northern Thailand, but is most common in coastal areas; by having leaflet blades with acute tips; regular, 4-merous calyx; and produces flowers in March–May. Fruiting material was found in the same area on 13 July 1997 (Maxwell 97–747, 675 m) from a tree 8 m tall with a dbh of 11 cm.

I have another flowering collection of *A. roxburghiana* from Saneh Pawng (Karen village, Sangklaburi District, Kanchanaburi Province (Maxwell 94–465, 10 April 1994, 425 m) which was from a tree 15 m tall, dbh 20 cm in rugged limestone terrain, also in mixed, primary evergreen + deciduous, seasonal hardwood forest (MAXWELL, 1995). The local Karen name for this species is “ba nong glai”. It is found scattered in both areas where I have found it.

This species was described and named by J. D. Hooker at Kew in 1875 in honour of William Roxburgh (1751–1815), Scottish botanist in Calcutta for 20 years, prolific collector and botanical author, who collected the original specimens of this species in Penang, Malaysia.

---

<sup>1</sup> continued from Nat. Hist. Bull. Siam Soc. 44: 11–22 (1996).

<sup>2</sup> CMU Herbarium, Department of Biology, Chiang Mai University, Chiang Mai 50200, Thailand  
Received 29 January 1998; accepted 15 May 1998.

## VITACEAE

***Tetrastigma apiculatum* Gagnep. NEW RECORD**

Gagnepain (1912, 1950) described this species, based on male flowers, from material collected by Balansa from Tonkin, North Vietnam. It is also known from Annam (Vietnam) and Laos. It is a decumbent, evergreen herb, not a vine or liana, which differs from other species in this genus in Thailand. The glabrous leaves are initially unifoliate and become trifoliate on older stems. The slightly fragrant male flowers are on finely papillate, pale light green pedicels 8–9 mm long, and are 4–merous. The cucullate, 3 mm long petals are pale light greenish-whitish, reflexed at maturity, and are distinguished by having an erect, subterminal, mammiform (i.e. apiculate) point.

I found staminate material of this species in Doi Luang National Park at Wahng (Wang) Gayo Falls, Wahng Nua District, Lampang Province, in shaded stream alluvium below the falls on 21 April 1997 (Maxwell 97–362, 575 m). It was found in mixed, primary, evergreen + deciduous, seasonal, hardwood forest in a marl area on granite bedrock along a permanent stream.

## LEGUMINOSAE, Mimosoideae

***Archidendron robinsonii* (Gagnep.) Niels. NEW RECORD**

Described in 1912 by the French botanist Gagnepain from material collected by C.B. Robinson (1871–1913) from Nhatrang, South Vietnam, in 1911, this species was previously known only from Vietnam in evergreen forest from 400–1000 m (NIELSEN, 1981). This species also has an extensive synonymy, but is distinct from related species (Nielsen, *op. cit.*). I found mature fruiting material of this species at Jae Sawn National Park, Muang Bahn (Pan) District, Lampang Province at 450 m on shale bedrock on 25 June 1996 (Maxwell 96–892). This is a relatively small, 8 m, tree which is found along streams in mixed, primary, evergreen + deciduous, seasonal, hardwood forest with bamboo.

It is distinguished by having two pairs of opposite secondary leaflets and cylindric, light green pods, 10–12 × c. 3 cm with 5–7 brown, turbinate (3 × 2.5 cm) or discoid (2.2 × 1 cm) seeds.

## LEGUMINOSAE, Papilionoideae

***Dalbergia lacei* Prain, pods described**

Prain described this species in 1907 based on flowering material collected by Lace in Burma (PRAIN, 1907). I have made three collections of this species in flower, *viz.* Maxwell 92–124 (Doi Sutep, Chiang Mai, 1375 m, 8 April 1992) while 97–346 and 97–387 are from Doi Luang National Park, Wahng (Wang) Gayo Falls, Wahng Nua District, Lampang Province (750 m, 19 April 1997; 575 m, 22 April 1997). Fruiting material (Maxwell 97–828, 8 August 1997) was collected from the same tree that I collected 97–387 from, so there can be no dispute about the authenticity of this material.

Pedicules glabrous, 8–10 mm long, merging with the decurrent base of the pod. Pods thin, flat, glabrous, lanceolate to oblanceolate, tip broadly rounded and apiculate, base cuneate and decurrent, margins slightly thickened, finely reticulate, dull light green with the seed area dull green (15–20 x 9–11 mm), overall size mostly 35–40 (exceptionally up to 75 mm and with 3 seeds) x 11–13 mm; seeds central, usually 1, infrequently 2–3.

Prain indicated that *D. lacei* differs from *D. ovata* Grah. ex Bth., which is known from Burma and Vietnam, with the former having completely glabrous flowers, subequal calyx lobes, all of which are rounded at the tip, and pubescent leaflet undersurfaces. From my observations there is also a close similarity to *D. fusca* Pierre with the flowers, but not the pods. The pods of *D. lacei* seem to be most similar to those of *D. ovata*.

Both *Dalbergia fusca*, which is common in northern Thailand, and *D. lacei* are deciduous, mostly lowland trees, flower when the tree is either leafless or has very immature leaves during the hot-dry season (February–April), and have monadelphous stamens. *D. fusca* has 11–13, mostly glabrous, obovate to obovate-oblong, emarginate-tipped, mature leaflets c. 22–55 x 15–22 mm and pods with an eccentric seed area which often touches the pod margin. The leaflets of *D. lacei* are ovate, tip acuminate, and c. 45–90 x 25–42 mm. CRAIB (1928) indicated that *D. lacei* had been collected in Lampoon and Lampang Provinces in northern Thailand as well as in Udon Thani Province in the NE.

## PRIMULACEAE

### *Anagallis pumila* Sw. var. *pumila* NEW RECORD

This is a very inconspicuous annual herb described by O. P. Swartz in 1788 from specimens collected in India. Since that time this species has been placed in several genera as various other species. It is known from India, the Himalayan region, northern Australia, Timor, and Central and South America (BENTVEZEN, 1962).

I found mostly fruiting material of this slender, 3–10 cm tall herb near Baw Luang Village, Hawt (Hot) District, Chiang Mai Province at 1000 m on 14 November 1996 (Maxwell 96–1536). It was found in a pine plantation on granite bedrock in original, mixed, seasonal, evergreen hardwood + pine forest.

*Agagallis pumila* is distinguished by having spirally arranged leaves; solitary, axillary flowers; circumscissile capsules; and numerous oblong, 3-angled, brown to black, c. 0.5 mm, long seeds on a free central placenta.

According to BENTVELZEN (1992) the material is var. *pumila*, while the other two varieties are found in Africa.

## LILIACEAE

### *Polygonatum kingianum* Coll. & Hemsl. NEW RECORD, fruits described

Collett collected flowering material of this species in the Shan Hills, upper Burma, at c. 1330 m in 1887–1888 which was described in 1890 (COLLETT & HEMSLEY, 1890). GAGNEPAIN (1934) included four species of *Polygonatum* for Indo-China, including *P. kingianum* which is known from Tonkin, North Vietnam. I found immature fruiting



Figure 1. *Polygonatum kingianum* Coll. & Hemsl. (Liliaceae) on Doi Mawk, west side of Doi Luang National Park, Wieng Bah (Pah) Bao (Pao) District, Chiang Rai Province; at 1100 m on 7 September 1997 (Maxwell 97-966). Photo: S. Gardner.

material of this species on the south side of Doi Sahng Liang, upper Gu Gahp Valley, near Pah Dang (Musoe/red Lahu) Village, Mae Dtang (Tang) District, Chiang Mai Province, on 1 July 1997 at 1100 m (Maxwell 97-692). The habitat is open, fire-damaged, secondary growth in an abandoned field in primary evergreen, seasonal, hardwood forest with bamboo, limestone bedrock.

Mature fruits (cover photo) were collected in Doi Luang National Park, west side, Wieng Bah (Pah) Bao (Pao) District, Chiang Rai Province on the summit ridge of Doi Mawk on 7 September 1997 at 1000–1300 m (Maxwell 97-966). The material was collected in disturbed, cleared and burned, mostly open places in original primary, evergreen, seasonal hardwood forest on phyllite bedrock. The fruits of this species are described as follows:

Fruiting pedicels reflexed, light green, 9–23 mm long. Perianth scar a distinct, light brown ring. Berries subglobose, shallowly (1–2) 3–4 lobed, locules mostly 3 with 2 seeds in each locule; light to medium green; 9–13 x 11–17 mm (fresh material). Seeds subglobose, c. 5–7 x 4–6 mm; testa smooth.

This is a deciduous, perennial, scarce herb up to c. 3–5 m tall with whorled leaves and linear-lanceolate blades with tendrilled tips. There are other collections of this species from Thailand including Kerr 5491 from Doi Kin Lom, Pai District, Mae Hong Son Province (flowers, 23 May 1921, c. 1500 m; at BK) and two collections by Garrett, *viz.* 1240, Doi Chawm Hot, Chiang Mai Province (flowers, 13 June 1941, 1420 m; at L) and from the same place (flowers, 26 June 1941, 1220 m; at L).

I have also been fortunate to find two flowering collections of this species, one of them from Doi Mawk at 1200–1400 m on 24 May 1998 (Maxwell 98-567). The other is from Doi Sutep–Pui National Park, Mae Rim District, above Mae Sa Mai (Hmong) Village at 1325 m on 22 May 1998 (Maxwell 98-551). It was found in recently burned fields and thickets on sandstone bedrock. The most recent collection of this species in the CMU Herbarium is from Wieng Hang Branch District, Chiang Mai Province, 1720–1760 m on 19 November 1998, in fruit (B. & S. Wynn-Jones 6562).

The species is named in honour of Dr. George King (1840–1909), British botanist, who in 1890 was Superintendent of the Calcutta Botanic Garden. King, a friend and supporter of Collett, received and studied the expedition's specimens.

## BURMANNIACEAE

### *Burmattia nepalensis* (Miers) Hk. f. NEW RECORD

The most recent work on *Burmattia* of Thailand was done by LARSEN (1962) who included 5 species, 2 of them from northern Thailand, viz. *B. coelestis* D. Don and *B. wallichii* (Miers) Hk. f. *Burmattia nepalensis* (Miers) Hk. f. resembles *B. wallichii* in being a very minute species and also lacking basal rosette leaves. The differences between these two species were noted by GAGNEPAIN (1908) and involve the details of the perianth, wings, and anther crest.

I found flowering material of *B. nepalensis* in the summit area (1950–2030 m) of Doi Lahng Gah (Lan Ka) in Jae Sawn National Park, Lampang Province, on 17 December 1996 (Maxwell 96–1667). It grows in open, fire-damage slopes and summit ridges on sandstone bedrock in primary, evergreen, seasonal, hardwood forest with some pine. This is a very inconspicuous annual herb with green, filiform stems, 2–5 cm tall; minute, scale-like leaves, and a solitary, terminal flower, 4–5 mm long with blue wings.

More material of this species was collected again at the same locality (Maxwell, Bella, & Nanny 7) on 21 November 1997 at 2030 m, the summit of Doi Lahng Gah. It was also observed to grow at c. 1750 m, but is most common above 1950 m.

This species was described by Miers as *Gontanthes nepalensis* Miers in 1841 from material collected in Nepal. It is also known from Cambodia, Hong Kong, southern China, and the Philippines (HOOKER, 1888; HAJRA, 1988).

## ACKNOWLEDGMENTS

I would like to thank Dr. J.F. Veldkamp Rijksherbarium, Leiden, Netherlands for information about some relevant specimens at Leiden as well as some vital references for some of the species discussed here. My work in Doi Luang National Park was supported by the Biodiversity Research and Training Programme (BRT No. 139029) for which I am most grateful.

## REFERENCES

- BENTVELZEN, P. 1962. Primulaceae. *Flora Malesiana* 6, 176 and fig. 1.
- COLLETT, H. AND W.B. HEMSLEY. 1890. On a collection of plants from Upper Burma and the Shan States. *J. Linn. Soc. Bot.* 28: 138 and plate 21.
- CRAIB, W.G. 1928. *Florae Siamensis Enumeratio* 1, 480.
- GAGNEPAIN, F. 1908. Burmanniacées. *Flore Générale de L'Indo-Chine* VI, 18–22.
- \_\_\_\_\_. 1912. Ampelidacées. *op. cit.* I, 958.
- \_\_\_\_\_. 1934. Liliacées. *op. cit.* VI, 792–793.
- \_\_\_\_\_. 1950. Ampelidacées. *Flore Générale de L'Indo-Chine, Supplement*; 865.
- GUILLAUMIN, A. 1946. Rutacées. *Flore Générale de L'Indo-Chine, Supplement*; 648.
- HAJRA, P.K. 1988. Burmanniaceae. *Fasc. Flora India* 19; 7: 12–13.
- HOOKE, J.D. 1888. Burmanniaceae. *Flora of British India* V, 666.
- LARSEN, K. 1962. Various Monocotyledon Families, Burmanniaceae. *Studies in the Flora of Thailand* 7: 137–138.
- MAXWELL, J.F. 1995. Vegetation and vascular flora of the Ban Saneh Pawng area, Lai Wo Subdistrict, Sangklaburi District, Kanchanaburi Province, Thailand. *Nat. Hist. Bull. Siam Soc.* 43 (2): 144.
- NIELSEN, I. 1981. Legumineuses-Mimosoidées. *Flore du Cambodge, du Laos, et du Viet Nam* 19, 132–134 and plate 23, 14–18: 127.
- PRAIN, D. 1907. *Bulletin of Miscellaneous Information* (Kew Bull.), 58–59.
- STONE, B.C. 1972. Rutaceae. *Tree Flora of Malaya* 1: 373.