

STUDIES IN THE GESNERIACEAE OF THE OLD WORLD XLI: NOTES ON BOEICA AND DIDISSANDRA*

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ABSTRACT. A new gesneriad from Hong Kong is described as *Boeica guileana* B. L. Burtt; it is allied to the Malayan *B. brachyandra* Ridl. and *B. nutans* Ridl. and notes are given on these. *B. tonkinensis*, based on *Oreocharis tonkinensis* Kraenzlin, is also added to the genus. Comparison is made between these plants and an anomalous species of *Didissandra*, *D. rufa* C.B.Cl.; the position of this in *Didissandra* is confirmed and an allied species, also from Borneo, is described as *D. synaptica* B. L. Burtt.

The stimulus for these notes has been a very interesting new gesneriad discovered by Dr D. P. M. Guile on Ma On Shan, in the New Territories of Hong Kong. I am most grateful to Dr Guile for permitting me to work on this material and for sending living plants to the Royal Botanic Garden, Edinburgh, where they have been successfully grown and flowered. Having finally decided to describe this plant as a new species of *Boeica*, it is a pleasure to perpetuate Dr Guile's association with it in the name *B. guileana*.

The generic classification of the tetrandrous genera of the tribe Didymocarpeae is far from satisfactory but it is essential to incorporate new species so that the whole picture can be examined. *Boeica guileana* is not a characteristic species of *Boeica*, but it is, in my view, clearly congeneric with two other species already placed there, *B. brachyandra* Ridl. and *B. nutans* Ridl. The other plant to which *B. guileana* at first seemed to have some affinity was *Didissandra rufa* C.B.Cl.: this possibility is examined, and rejected, below.

C. B. Clarke established (Comm. & Cyrt. Bengal. 118, 1874) the genus *Boeica* for three woody herbs with open axillary pedunculate cymes: the flowers (where known) had a nearly regular rotate corolla, and four free stamens; the fruits were cylindric, loculicidally dehiscent on both sides. As Clarke relied heavily on floral characters for his genus, and as he clearly says that he only saw flowers of the species he called *B. fulva*, that must be taken as the lectotype of the genus. These species grow erect from the base and have an indumentum of soft silky hairs or are subglabrous.

A few years later Clarke (in DC., Mon. Phan. 5:136, 1883) added two further species, *B. hirsuta* and *B. porosa*. These are decumbent, or creeping, at the base and covered with harsh bristly hairs: the cymose inflorescences are rather congested. *B. hirsuta* and *B. porosa* clearly form a distinct group within the genus. A third species from Vietnam, which has been in herbaria for many years unnamed, also belongs to this group. It is enumerated below as *B. tonkinensis*, the plant having been previously misplaced by Kraenzlin in *Oreocharis*.

B. brachyandra, *B. nutans* and *B. guileana* form a third group within the genus. They are rosette herbs with few-flowered axillary cymes. At least in

* Continued from Notes R.B.G. Edinb. 34:101-105 (1975).

B. guileana the corolla is distinctly zygomorphic, but in the short tube and spreading limb, and in 4 free (but here connivent) stamens they agree with the original species of *Boeica*.

These three species also have a superficial resemblance to *Didissandra rufa*, a species which is itself very anomalous in its genus. The resemblance is in large part due to the similar rosulate habit, indumentum of shiny bristly brown hairs and corolla with a short tube and flat limb. The differences are that in *D. rufa* the anthers are coherent at the tips, the anterior filaments are longer than the posterior ones, but have a marked S-bend, which keeps the anthers at the same level, and the fruit dehisces on the upper side only—so that the open capsule is canoe-shaped.

D. rufa is anomalous in *Didissandra* because of its short corolla tube and flat limb and the apparently isodynamous stamens permitting all four anthers to cohere. Usually in *Didissandra* the corolla tube is longer than the limb, which is not flat, and the stamens are clearly didynamous, the anthers cohering in pairs.

There is, however, another *Didissandra* to which attention has previously been called (see Notes R.B.G. Edinb. 24: 42, 1962). It is vegetatively indistinguishable from *D. rufa*, but has a corolla tube 2.3 cm long and a small limb. This plant is only known from a single specimen, but it is so important in discussion that it is justifiable to give it a name: it is described below as *D. synaptica*. It is the existence of *D. synaptica* that permits the retention of *D. rufa* in *Didissandra*. The bent anterior filaments of *D. rufa* are just what might be expected if the short-tubed *D. rufa* had been quite rapidly derived from the long-tubed *D. synaptica*: the remarkable vegetative likeness emphasises that this is a probable explanation. *D. rufa* is, then, best interpreted as a local development within *Didissandra* and the resemblance to *Boeica brachyandra*, *guileana* and *nutans* is not due to their close affinity.

It cannot be denied that the position of these three species in *Boeica* is very much open to question. However, there are already far too many small genera in Gesneriaceae, and the best course at present is to leave *B. brachyandra* and *B. nutans* where they have previously been placed, and where, on technical characters, they can be found, and to add *B. guileana* to the group. The species mentioned are annotated below with a few individual notes.

Boeica brachyandra Ridl. in Journ. Str. Br. Roy. As. Soc. 43:177 (1905), et Fl. Mal. Pen. 2:538 (1923).

Type: Malaya, Kedah, Pulau Langkawi, Gunong Chinchang at Kwala Malacca, coll. Curtis, cult. in hort. bot. Penang, Sept. 1901 (SING!).

The type sheet has an annotation by Curtis, "I collected this myself. Petals bluish". This is the only specimen known. The species was not found during a visit to Gunong Chinchang by Burtt and Woods in 1962 although three other gesneriads described from Curtis's collections in this area were re-collected: namely *Didymocarpus inaequalis* Ridl., *D. purpureus* Ridl. and *Paraboea obovata* Ridl. (= *Boea elegans* Ridl.). These all grew on a tiny sandstone outcrop in the forest, about halfway up the mountain. Kwala Malacca is the village on the bay at the foot of the mountain: presumably it is mentioned on the label as a guide to the location of the mountain, rather than as the precise station of the plant.

The following descriptive notes were made from the type sheet, and may be useful to supplement Ridley's description. Stock rather woody, c. 2 cm long. Petiole 1-2 cm (?). Lamina 5-6.5 × 2-3 cm, broadly elliptic, serrate, acute at the tip, sharply narrowed to somewhat rounded at the base, thinly brown or reddish setose on both surfaces, almost mamillate above. Peduncles axillary, red-brown setose with spreading hairs, 3.5-4 cm; bracts 4 mm, linear, red-brown hairy. Flowers 2-3, on pedicels 7 mm long. Calyx segments linear, 5 mm in fruit, red-brown setose. Capsule slender to 3 cm long excluding persistent 5 mm style, glabrous (apparently with some short scattered glandular (?) hairs in flower). There is only one stuck-down corolla, with 4 anthers round the base of the style.

Bocica guileana B. L. Burt, *species nova* *B. brachyandrae* et *B. nutanti* affinis, ab ambabus corolla distincte zygomorphica, lobis minute erosis, a *B. brachyandra* floribus solitariis, a *B. nutante* filamentis 3 mm longis distinguenda. Fig. 1.

Herba rosulata, sub cultu usque ad 20 cm diam. *Folia* e planta culta petiolo ad 4 cm longo, lamina ad 7 × 4.5 cm; e specimine sylvestri unico viso

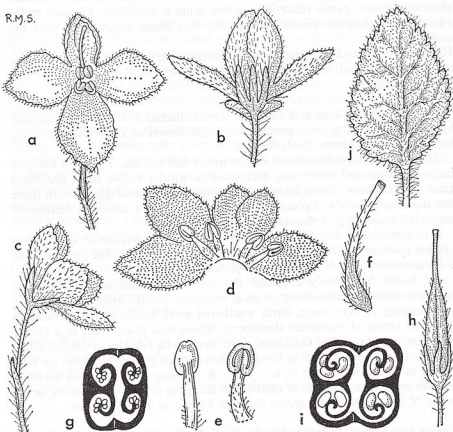


FIG. 1. *Bocica guileana* B. L. Burt: a, b, c, front, rear and lateral view of flower, × 2; d, corolla dissected, × 2; e, stamens, × 4; f, gynoecium, × 4; g, ovary in T.S., × 10; h, capsule, × 2; i, capsule in T.S., × 8; j, leaf undersurface, × 3.

petiolo ad 2 cm, lamina ad 4.5×2.2 cm; lamina plus minusve elliptica, basi aut cordata aut cuneata, marginibus serrato-dentatis, utrinque uti petiolus pilosa, costa et venis lateralibus subtus prominentibus. *Pedunculi* axillares, c. 5.5 cm longi, uniflori, pilis patentibus rubro-brunneis longitudine variabilibus induti. *Bractee* lineares, 6×0.5 mm, pilis ad margines 1.5 mm usque longis dorso brevioribus; raro bractee subfoliaceae, 9×3 mm. *Pedicelli* 1 cm, uti pedunculi pilosi. *Calyx* 5-fidus; segmenta tria superiora ascendentia, duo inferiora descendentia, omnia c. 5 mm longa basi 1.5 mm lata, extra dense rubro-setosa, intus glandulis breviter stipitatis et ad apicem pilis brevibus praedita. *Corolla* laete violacea tubo 2 mm longo extra setis paucis ornato; lobi superiores per 3.5 mm conjuncti, parte libera 6×6 mm, medio superpositi et quasi cucullum formantes; laterales 12×9 mm; medianus 12×8 mm; omnes intus glabri, marginibus breviter ciliati et levissime erosi, extra tenuiter brevipilosi. *Stamina* fertilia 4; filamenta robusta, recta, in vivo cylindrica sursum attenuata, subaequalia, 3–4 mm longa, basi 1.5 mm diam.; antherae 2×1.5 mm, rimis apice approximatis haud confluentibus, connectivo dorsali crasso laevi luteo. *Discus* perparvus, annularis. *Gynoecium* 10 mm longum; ovarium 3.5×1.5 mm, setis albis pilosum, in stylum fere 1 mm diam superne glabrum transiens; stigma terminale leviter et horizontaliter sulcatum; placentae tenues ramis recurvis apicibus tantum ovuliferis. *Capsula* recta, 14×2.5 mm, breviter pilosa. *Semina* 0.5 mm longa, ellipsoidea, testa insculpta.

HONG KONG New Territories: Ma On Shan, 690 m, ravine in montane forest, on rocks in humid shade, July 1971, *Guile*; cult. in R.B.G. Edinb. 1976, C. 8467 (holo. E).

The plants cultivated at Edinburgh were collected in the original locality by Dr Guile in 1974: one produced a single flower in cultivation in 1975, but they bloomed more freely in 1976.

There is a triple indumentum on the upper leaf surface. The most obvious hairs are long and white and arch over forwards; below these are short erect pointed hairs arising from a stout conical base; interspersed with these are the small shortly stipitate glands that are such a common feature of gesneriad leaves (e.g. *Saintpaulia*).

It is noteworthy that the lines of dehiscence of the anthers in *B. guileana* are not confluent at the apex as they are in *B. tonkinensis*. The constancy of this character through the different species requires study.

Dr Guile has kindly supplied the following additional information. *B. guileana* is a plant of the tropical montane forest, strictly confined to overhanging or very steep, hard, weathered earth banks and rock faces in the light shade of evergreen shrubbery. Where first discovered, in a ravine near the summit of Ma On Shan, there were some two dozen plants; later, the species was also found in lower ravines and, in greater quantity, on NE-facing cliffs at an altitude of c. 250 m. *B. guileana* also occurs in forested ravines on the north slopes of the Pat Sin Range at c. 250–500 m, some seven miles N of Ma On Shan, across the inlet known as Tolo Harbour.

Boeica nutans Ridl. in Journ. Str. Br. Roy. As. Soc. 61:34 (1912), et Fl. Mal. Pen. 2:538 (1923).

Type: Malaya, Perak, Gunong Kerbau, 1910, *M. Haniff* (SING!).

Like *B. brachyandra*, this has never been re-collected. There are two sheets: one with a leaf fragment mounted and 3 flowers in a capsule: the other with 3 corollas in a capsule.

The following notes were made. Petiole (all present) 5 mm long. Lamina (fragment: $\frac{1}{2}$ leaf?) 2×3.25 cm, unequally rounded at base, with multicellular longish subtrigose hairs on both surfaces, numerous stomatal turrets visible below. Flowers agree with Ridley's description but those on second sheet have corolla-lobes oblong, c. $8 \times 3-4$ mm. Anther thecae slightly divergent downwards, giving bluntly triangular anther with smooth dark connective on back.

***Boeica tonkinensis* (Kraenzlin) B. L. Burtt, comb. nov.**

Syn.: *Oreocharis tonkinensis* Kraenzlin in Fedde, Rep. Sp. Nov. 24:216 (1928).

Didymocarpus tonkinensis (Kraenzlin) Handel-Mazzetti, Symb. Sin. 7, 2:883 (1936).

Type: [Vietnam] Tonkin, Lao Kay, Wilson 2765 p.p.

VIETNAM. Tonkin: Taai Wong Mo Shan, 1939, W. T. Tsang 29005, 29036, 29434; Sai Wong Mo Shan, 1940, W. T. Tsang 29808, 30321.

This species is noteworthy for the production of long prostrate over-ground runners, a pattern of growth very unusual in Old World Gesneriaceae. These runners are, on the herbarium sheets, up to 25 cm long and bear scattered, alternate, reduced leaves (petiole 2 mm, lamina 13×9 mm); like the erect stems they are densely hairy, rooting appears to take place only at the tips where the leaves become congested and slightly larger. These runners are not always present on herbarium specimens and are lacking on the type.

The type specimen also lacked corollas, which may be described thus (Tsang 29036): corolla with short tube 2 mm long and spreading, slightly zygomorphic limb; upper lobes c. 3×2.5 mm, lower up to 5×4 mm; stamens 4; filaments 1.5 mm, thick; anthers free, 1.5×1.25 mm, bluntly triangular, cells confluent at tips and dehiscence starting by a pore where they meet; staminode less than 0.5 mm; ovary 1.5 mm conical, hairy, some of the hairs gland-tipped; style 3 mm, curved at the tip; stigma small, capitate.

Kraenzlin described the ovary as elongate-fusiform and glabrous, but he says all his material was past flowering and this obviously refers to a young fruit. The dehiscence of the anther emphasises not only the affinity of this species with *B. porosa* C.B.Cl., but the resemblance (also marked in habit and range of indumentum) between the capsular genus *Boeica* and the baccate-fruited *Rhynchotechum*.

***Didissandra rufa* C.B.Cl.** in DC., Mon. Phan. 5:70 (1883); Burtt in Notes R.B.G. Edinb. 24:42 (1962), which see for citations and synonymy; *op. cit.* 34:40 (1971).

Additional material:—W Kalimantan, Sanggau, 22 iv 1973, *Elsener* 240 (E, L).

I am indebted to Dr van Steenis for this latest material. It serves to emphasise a point not mentioned in Clarke's original description, that the leaves may be unequal-sided at the base. Quite symmetrical leaves occur on the

same rosette as leaves so asymmetrical that the base of the lamina is narrowed on one side of the petiole and ends 2 mm above that on the other side, which also has a basal cordate lobe.

Didissandra synaptica B. L. Burtt, *species nova* habitu, foliis et indumento a *D. rufa* C.B.Cl. vix distinguenda, corollae tubo multoties longiore, lobis minoribus inter se subaequalibus, et staminibus longioribus didynamis antheris inclusis valde recedit.

Herba rosulata. *Petioles* 2–7 cm longi, setis brunneis ad 5 mm longis induti. *Lamina* 6–7 × 2.3–3 cm, plus minusve elliptica, leviter obliqua, ad apicem acutum attenuata, basi leviter inaequilateralis, utrinque setis longis brunneis ornata; nervi laterales utrinsecus 7, ascendentes. *Pedunculi* axillares (emortui persistentes), 7–13 cm longi, brunneo-setosi, biflori; bracteolae 3 × 0.5 mm, lineares, obtusae, brunneo-setosae; pedicelli fere 2 cm longi, sub fructu fere 3 cm, brunneo-setosi. *Corolla* 3 cm longa; tubus (in siccitate) 4.5 mm latus inferne leviter curvatus, extra tenuiter piloso-pubescent; labium superius fortasse recurvatum, c. 1.5 mm; inferius porrectum, 5 mm, leviter trilobum. *Gynoeceum* 1.5 cm longum, piloso-pubescent. *Stamina* anteriora 1.3 cm, posteriora 1 cm longa; antherae inclusae, 0.5 mm longae.

W KALIMANTAN. Kapuas Gebiet, Bukit Tilung, 1000 m, Felsen, Blüte weiss, Schlund aussen basalwärts hellviolet, 9 ii 1925, Winkler 1512 (holo. HBG; photo E).

This specimen was determined by Kränzlin (in Mitt. Inst. Allg. Bot. Hamburg 7:86, 1927) as *Didymocarpus scabrinervis* C.B.Cl., which is a true *Didymocarpus*. *Didissandra synaptica*, so named because it forms a link between the rest of the genus and the anomalous *D. rufa*, differs from the latter species not only in corolla and anthers, but in the absence of any short white hairs mixed with the longer brown ones on the pedicels. This character might be important in identifying fruiting material.