

BLYXA QUADRICOSTATA NOV. SP., A NEW HYDROCHARITACEA FROM THAILAND

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The dioecious species of the genus *Blyxa* can be divided into 2 groups, those with 6 stamens and those with 9 stamens in the male flowers. The first group is restricted to tropical Africa and needs further study. The second group occurs in Asia and Australia and up to now was considered to consist of 2 very distinct species, *Blyxa octandra* (Roxb.) Planch. ex Thw., characterized by a basal rosette of long, smooth, linear leaves, and *B. novoguineensis* den Hartog which is caulescent with short serrulate leaves. *B. octandra* is widely distributed in India, Burma, Indo-China, New Guinea, and the tropical part of Australia. *B. novoguineensis* is known with certainty only from New Guinea. Recently a third species, very similar in its habit to *B. octandra*, was found by Dr. C. F. van Beusekom and Mr. R. Geesink in Thailand. From a study of herbarium material it appeared that this species had already been collected several times but had not been recognized as a separate species, probably because of the absence of seeds in these plants.

Blyxa quadricostata den Hartog, *nov. sp.* — Fig. 1.

Dioica, acaulis usque subcaulescens, rhizomate brevi, probabiliter perennis. *Radices* haud ramosae, usque ad 30 cm. longae. *Folia* radicalia, basi vaginata, 20—45 cm. longa, 3—5 mm. lata; costa media conspicua; nervi 3—5, paralleli, venis transversalibus connecti; inter nervos nervuli accessorii 4 vel 5 extant; lamina apice acuta, integer. *Pedunculi* 1 vel plures, usque ad 70 cm. longi, sed in floribus ♀♀ generaliter quam 30 cm. haud longiores. *Spatha* bracteis 2 connatis formata, florem unicum ♀, vel inflorescentiam cymosam florum 3—9 masculinorum includens, floribus ♂♂ consecutive apertis. *Flos* ♂ pedicello 3—11 cm. longo. *Sepala* 3, linearia usque lanceolata, viridia, apice saturatius punctata, 5—6 mm. longa, 1 mm. lata, vena unica (interdum utroque latere vena sat obscura obsita), apice obtuse, saepe cucullatim contracta. *Petala* 3, lineari-lanceolata, alba, 11—25 mm. longa, 1½—2 mm. lata, acuta. *Stamina* 9, 4—5 mm. longa, filamentis 2½—4 mm. longis, in eodem flore longitudine variabilibus, antheris lanceolatis, attenuatis, 1—1½ mm. longis. *Stylodia* 3, c. 1 mm. longa. *Flos* ♀ hypanthio usque ad 30 cm. longo praeditus. *Sepala* 3, linearia, viridia, apice saturatius punctata, 8—10 mm. longa, 1 mm. lata, venis 3 instructa apiceque cucullato-contracta. *Petala* 3, linearia, apicem versus attenuata, delicatissima, venatione obscura, 9—11 mm. longa. *Ovarium* c. 5 mm. longum, lineare, spatha inclusum. *Styli* 3, 17—22 mm. longi, loriformes, obtusi, parte adaxiali pilis glandulosis densis instructi. *Stamina* 1—3 haud fertilia interdum praesentia. *Fructus* linearis, rostro incluso 7—10 cm. longus, multiseeminatus. *Semina* 3—3½ mm. longa, 1 mm. lata, fusiformia vel paullo S-formia, utrinque attenuata; testa costis 2 ventralibus et 2 dorsalibus, membraneis, laevis vel subserratis; costae ventrales approximatae; costae dorsales sat distantes, una interdum lateralis; lateres laeves, verrucis vel spinis nullis.

Dioecious, acaulous to subcaulescent, with a short rootstock, probably perennial. *Roots* up to 30 cm long, not ramified. *Leaves* radical, sheathing at the base, 20—45 cm long, 3—5 mm wide; nerves 3—5, parallel, connected by cross-veins; midrib conspicuous, between each pair of nerves 4 or 5 accessory bundles; leaf-tip acute; leaf-margin entire. *Peduncles* 1 or more, up to 70 cm long; female peduncles usually not longer than 30 cm.

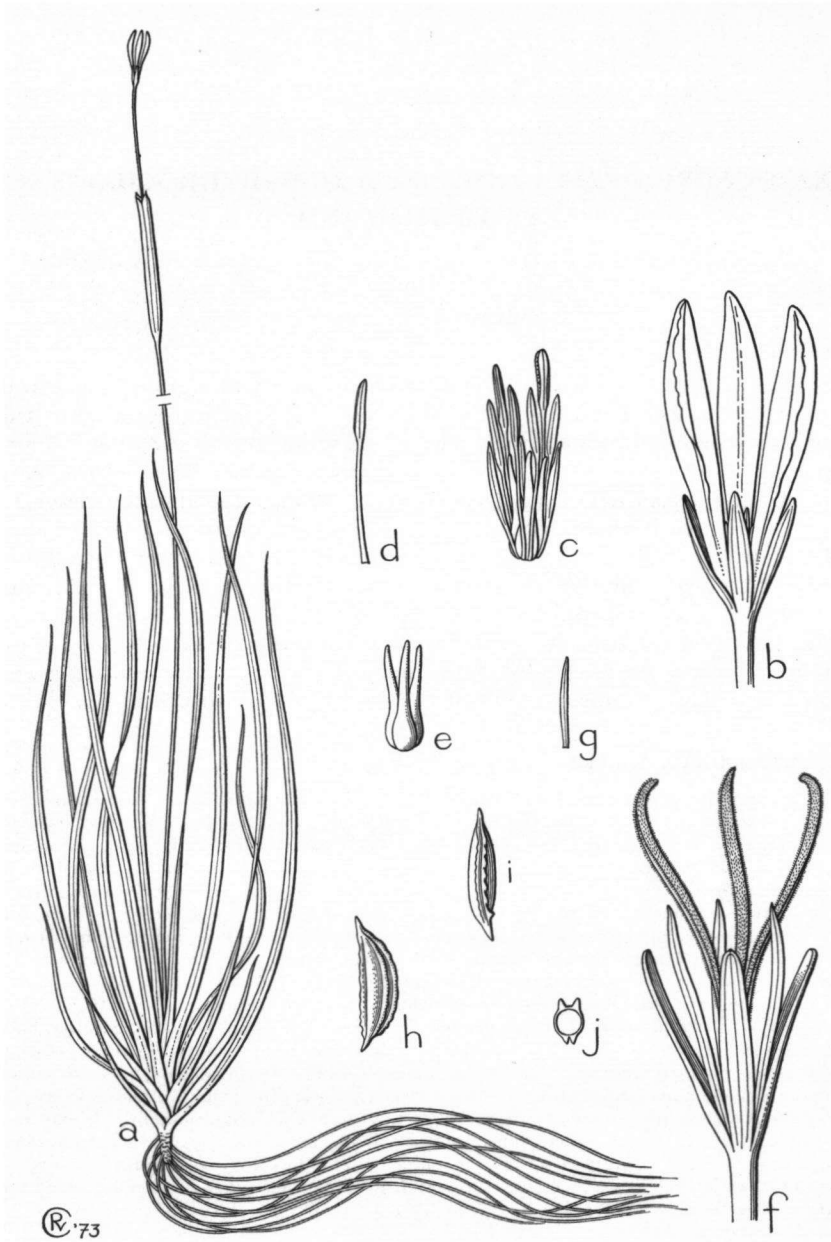


Fig. 1. *Blyxa quadricostata* den Hartog. — a. Habit of male plant ($\times \frac{1}{4}$); b. male flower ($\times 3$); c. stamens and pistils ($\times 6$); d. stamen ($\times 6$); e. stylodia ($\times 6$); f. female flower ($\times 3$); g. staminodium ($\times 6$); h. seed, lateral view ($\times 6$); i. seed, ventral view ($\times 6$); j. seed, cross-section ($\times 6$). — (van Beusekom & Geesink 4602, type).

Spathe consisting of 2 connate bracts, containing 1 female flower or a cymosely arranged inflorescence with 3—9 male flowers, flowering one by one. *Male flower* with 3—11 cm long pedicel. *Sepals* 3, linear to lanceolate, green, with a dark dot near the apex, 5—6 mm long, 1 mm wide, with 1 vein, sometimes also 2 very faint lateral veins; apex obtusely, often cucullately contracted. *Petals* 3, linear-lanceolate, white, with a thickened median band, 11—25 mm long, 1½—2 mm wide, slightly keeled near the tip, acute. *Stamens* 9, 4—5 mm long; filaments 2½—4 mm long, variable in length within the same flower; anthers lanceolate, attenuate, 1—1½ mm long. *Stylodia* 3, ca. 1 mm long. *Female flower* with an hypanthium up to 30 cm long. *Sepals* 3, linear, green, with a dark dot near the apex, 8—10 mm long, 1 mm wide, with 3 veins and a cucullately contracted apex. *Petals* 3, linear, tapering towards the tip, very delicate with faint venation, 9—11 mm long. *Ovary* ca. 5 cm long, linear, enclosed by the spathe. *Styles* 3, 17—22 mm long, loriform, obtuse, adaxial side densely covered with glandular hairs. Sometimes also 1—3 infertile stamens. *Fruit* linear, 7—10 cm long, including rostrum, with many seeds. *Seeds* 3—3½ mm long, 1 mm wide, fusiform to slightly S-shaped, attenuate at the ends; testa with 2 ventral and 2 dorsal costae, costae membranous, slightly serrate or smooth; ventral costae close together; dorsal costae further apart, one of them sometimes lateral; lateral sides smooth, without warts or spines.

Type: Thailand, Loei Dist., Phu Kradung, Mirror pond, on sandstone hill, alt. 1300 m, 25—12—1971, van Beusekom & Geesink 4602 (L).

THAILAND. Kao Krading, Loi, in pond, ca. 1200 m alt., fl., 13-3-1924, Kerr 8722 (C, K); ♂ fl., 11-2-1931, Kerr 20105 (K, L); Poo Kradeng, in a small stream, 1300 m alt., ♂ and ♀ fl., 18-3-1958, Sørensen, Larsen & Hansen 2211 (C, L).

According to Dr. C. F. van Beusekom these locality names are variants of the name of the type locality. Considering the local topography it is very likely that all collections have been made in the same place.

Ecology: The species is common in the crystal-clear water of a pond, surrounded by *Sphagnum*, and in quiet places in clear streams in the adjacent savannah. The flowers are above water during flowering.

Note. *B. quadricostata* is closely allied to *B. octandra* but differs in the following characters:

1. The seeds of *B. quadricostata* are 3—3½ mm long, fusiform to slightly S-shaped, while 4 membranous costae run over the testa. In *B. octandra* the seeds are 1—2 mm long, obtuse at one end and attenuate at the other, while the testa is covered by 8 rows of long curved spines.
2. The leaves of *B. quadricostata* are at most 3—5 mm wide, and contain only 3—5 parallel nerves; in *B. octandra* the leaves are usually wider, up to 12 mm, and have 5—11 parallel nerves.
3. *B. quadricostata* has a short, up to 2 cm long rootstock and is probably perennial. In the annual *B. octandra* rootstock formation has not been observed.
4. In *B. quadricostata* the male flowers of each inflorescence flower one by one, while in *B. octandra* they flower simultaneously.

B. octandra has to be deleted from the flora of Thailand.