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# *Homalia pennatula* (Musci: Neckeraceae), a New Combination from Southeast Asia, with a Key to the Species of *Homalia*

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**ABSTRACT.** *Symphiodon pennatulus* (Dixon) Dixon from Southeast Asia is transferred to the genus *Homalia* of the Neckeraceae (Musci). A key to the five species and one variety of *Homalia* is provided.

*Homalia* (Bridel) Schimper is primarily distributed in the northern temperate regions and nearby subtropical borders, where it grows on boulders, rock outcrops, or bases of trees. It is characterized by strongly complanate plants with leaves arranged in distinct ranks; by oblong-ovate to spatulate leaves with broad apices and smooth leaf cells; and by smooth capsules with a "hypnoid" peristome. *Symphiodon* Montagne has 14 species worldwide and is primarily distributed in the tropical and subtropical regions of Southeast Asia, with one species in Hawaii, South Africa, and Central and South America, respectively. In Southeast Asia, it grows exclusively on tree trunks and tree branches. Besides its habitat distinction, taxonomic characters of generic importance for *Symphiodon* are found in the capsule ornamentation and peristomes. It has echinate capsules and an "isobryoid" peristome. Other secondary gametophyte features include: leaves often appressed and imbricate or spreading; leaf apices narrowed; and leaf cells prorate.

*Symphiodon pennatulus* (Dixon) Dixon was excluded from the genus *Symphiodon*, because it is epilithic and has strongly complanate to sub-distichous leaves (He & Snider, 1992). The type specimen of *Symphiodon pennatulus* is meager and contains no sporophytes. Since no other specimens of this species were available, He & Snider (1992) were uncertain of its generic placement. Recently, numerous collections of this moss have come from Thailand, and though they consistently lack sporophytes, we now have enough material to make detailed observations on the gametophytes. *Symphiodon pennatulus* exhibits many aspects of *Homalia*, such as a strongly complanate habit, a homaloid-type leaf insertion showing an eight-ranked phyllotaxy (see He, 1992), oblong-ovate to spatulate

leaves with broad and rounded apices, and a variable costal morphology. It is similar to the widely distributed *Homalia trichomanoides* (Bridel) Schimper in overall similarities of leaf shape and the absence of pseudoparaphyllia, but it differs in having distinct double costae and linear, projecting median leaf cells. On the basis of the double leaf costae and elongate median leaf cells, *Symphiodon pennatulus* appears most closely related to *Homalia glabella* (Hedwig) Schimper from Central and South America, except that it lacks pseudoparaphyllia. Although the narrowly linear and projecting median leaf cells of *Symphiodon pennatulus* and its presence in southern Asia differ from those of previously recognized *Homalia* species, the overall gametophyte features of this moss support its placement in *Homalia*. Hence, we are making the following new combination. A key to the five species and one variety of *Homalia* now recognized is provided. A description and an illustration of the species treated here will be published in the forthcoming revision of *Homalia* by the first author.

***Homalia pennatula*** (Dixon) He & Enroth, comb. nov. Basionym: *Stereodon pennatulus* Mitten ex Dixon, Rec. Bot. Surv. India 6: 66. 1914. *Symphiodon pennatulus* (Dixon) Dixon in Broth-erus, Nat. Pflanzenfam., ed. 2, 11: 267. 1925. TYPE: Myanmar (Burma). Moulmein, Parish s.n. (holotype, NY; isotype, BM).

In his book entitled *Burma, Its People and Productions*, Mason (1883) published a list of plants, including mosses. *Homalia erosa* Hampe and *Homalia pennatula* Mitten were listed in this publication. Both names are apparently nomina nuda, since no descriptions or basionyms were given. The former is clearly a herbarium name, because we have seen several herbarium specimens annotated with the name *Homalia erosa* Hampe. However, we have seen no specimens bearing the name *Homalia pennatula* Mitten, nor has it ever been published

validly. Although it could be based on Mitten's herbarium name *Stereodon pennatulus*, *Homalia pennatula* Mitten has no nomenclatural bearing in our paper.

In recognizing that *Homalia trichomanoides* var. *japonica* (Besch.) He, stat. nov., cited in He (1992) has not been validly published, we make the following new combination:

***Homalia trichomanoides* var. *japonica*** (Besch.) He, comb. nov. Basionym: *Homalia japonica* Besch., J. Bot. (Morot) 13: 39. 1899. TYPE: Japan. Sengantoge, *Faurie 14984* (holotype, PC; isotype, KYO).

*Additional selected specimens examined.* MYANMAR. Moulmein, *Kurz 2930* (BM). INDIA. Kerala, *Norkett 13377* (BM). THAILAND. **Changburi:** *Larsen et al. 1857* (AAU, MO). **Chiangmai:** Mt. Suthep, 98°55'E, 18°50'N, *Touw 8395* (BM, L, MO, NY). **Krabi:** Khao Phanom Bencha Park, *Schäfer-Verwimp & Verwimp 16230* (H, MO). **Nakhon Nayok:** *Larsen et al. 3380* (AAU, MO). **Nakhon Sawan:** 98°55'E, 16°40'N, *Touw 8319* (BM, L, MO, NY). **Prachinburi:** 101°30'E, 14°30'N, *Touw 12215* (BM, L, MO). **Trat:** 102°49'E, 11°59'N, *Charoenphol et al. 4982* (AAU, BM, H, MO, NY); Ko Kut, 101°31'E, 12°35'N, *Charoenphol et al. 5129* (AAU, BM, H, MO, NY).

KEY TO THE SPECIES AND VARIETIES OF *HOMALIA*

1. Costa single, extending ½–⅔ the leaf length . . . 2
1. Costa double or forked, less than ½ the leaf length or indistinct . . . . . 4
- 2(1). Pseudoparaphyllia present; costa stout, extending ¾–⅔ the leaf length; leaf apices dentate, with large teeth; western Europe, northern Africa, Canary Islands . . . 1. *H. lusitanica* Schimper
2. Pseudoparaphyllia absent; costa slender, ex-

- tending ½–¾ the leaf length; leaf apices moderately serrate, with small teeth . . . . . 3
- 3(2). Autoicous; secondary stems often blunt near the apex; flagelliform branches uncommon; eastern Asia, Russia, Europe, North America, Mexico . . . . . 2a. *H. trichomanoides* var. *trichomanoides* (Hedwig) Schimper
3. Dioicous; secondary stems often attenuate near the apex; flagelliform branches commonly present; Japan, Korea, Taiwan . . . . . 2b. *H. trichomanoides* var. *japonica* (Besch.) He
- 4(1). Median leaf cells rhombic, 8.5–17.5 µm long; Azores, Madeira, Canary Islands, Caucasus . . . . . 3. *H. webbiana* (Montagne) Schimper
4. Median leaf cells oblong-rhomboidal to narrowly linear, 35–100 µm long . . . . . 5
- 5(4). Leaves 1.25–3.25 mm × 0.75–1.25 mm; pseudoparaphyllia present; Mexico, West Indies, Central America, Brazil, Venezuela . . . . . 4. *H. glabella* (Hedwig) Schimper
5. Leaves 0.8–1.2 mm × 0.5–0.65 mm; pseudoparaphyllia absent; India, Myanmar, Thailand . . . . . 5. *H. pennatula* (Dixon) He & Enroth

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