Phytotaxa 784 (1): 064–070
https://www.mapress.com/pt/
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Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

https://doi.org/10.11646/phytotaxa.784.1.5

A new species of *Syrrhopodon* (Calymperaceae) from Hong Kong, China

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Abstract

Syrrhopodon kangyungensis is described as a new species from Hong Kong, China. It differs from *Syrrhopodon armatus* by leaves elliptical to narrowly elliptical, slightly flexuose when dry, flattened when moist; costa generally smooth dorsally, papillose or spinose occasionally near apex, spines scattered on ventral side from shoulder to near apex; leaf cells of upper lamina are bulging ventrally, smooth dorsally instead of unipapillose on both surfaces.

Key words: mosses, Fung Shui Woods, *Syrrhopodon armatus*, taxonomy

Introduction

In February 2026, with the support of the Agriculture, Fisheries and Conservation Department of the Hong Kong Special Administrative Region, the Shiu-Ying Hu Herbarium of the Chinese University of Hong Kong and the Fairy Lake Botanical Garden jointly launched the *Bryophyte Flora of Hong Kong* project, with the participation of the Guangxi Institute of Botany. The project is expected to compile the *Bryophyte Flora of Hong Kong* through extensive field surveys, literature review and examination of historical specimens.

In May 2026, we conducted our first joint field expedition. One of the sites selected for investigation was Sheung Wo Hang, an ancient village located in the northeastern New Territories of Hong Kong. Behind the village lies a well-preserved Fung Shui Woods. These woodlands are typically composed of native vegetation and are culturally significant to local villagers, contributing to their protection and long-term preservation.

In 1999, the first author described a new species, *Syrrhopodon hongkongensis* Zhang (1999, 122), based on specimens collected from this locality (Zhang, Corlett & Chau 1999). Since then, the species has not been recorded again. Our primary objective, therefore, was to rediscover it. As the original specimen records did not include GPS coordinates, we selected the most likely route based on the collector's recollection of the original collection site. Given the minute size of the plants (only 5–8 mm high), reliable identification in the field using a hand lens was challenging, as confirmation would require microscopic examination of diagnostic features. We therefore collected several suspected specimens and brought them back to the laboratory for detailed examination. Unfortunately, none of the collected specimens was identified as *S. hongkongensis*.

However, among the collections, we found a specimen closely resembling *Syrrhopodon armatus* Mitt. (1863, 151), a palaeotropical species widely distributed from western Africa eastwards to the islands of the Pacific Ocean (Ellis 2016, 2017). The specimen differs from *S. armatus* in having elliptical to narrowly elliptical leaves that are slightly flexuose when dry and flattened when moist, a hyaline lamina that is conspicuously narrower and shorter

 Accepted by Wen Ye: 23 Oct. 2026; published: 10 Nov. 2026
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than the chlorophyllose lamina, and chlorophyllose laminal cells that are ventrally bulging but dorsally smooth. These differences led us to suspect that the specimen represents an undescribed species. In September 2026, we carried out more field surveys, revisited the original locality at Sheung Wo Hang and explored other sites, with particular attention to members of Calymperaceae. Fortunately, additional specimens were collected at Sheung Wo Hang and Ma On Shan Country Park. After examining all the relevant specimens and consulting the pertinent literature (Reese 1978; Mohamed & Reese 1985; Reese, Koponen & Norris 1986; Eddy 1990; Gao 1996; Ellis & Tan 1999; Li & Crosby 2001; Ellis 2016, 2017; Meagher et al. 2023), we concluded that the specimens represented a species that has not been previously reported. We therefore describe it here as a species new to science.

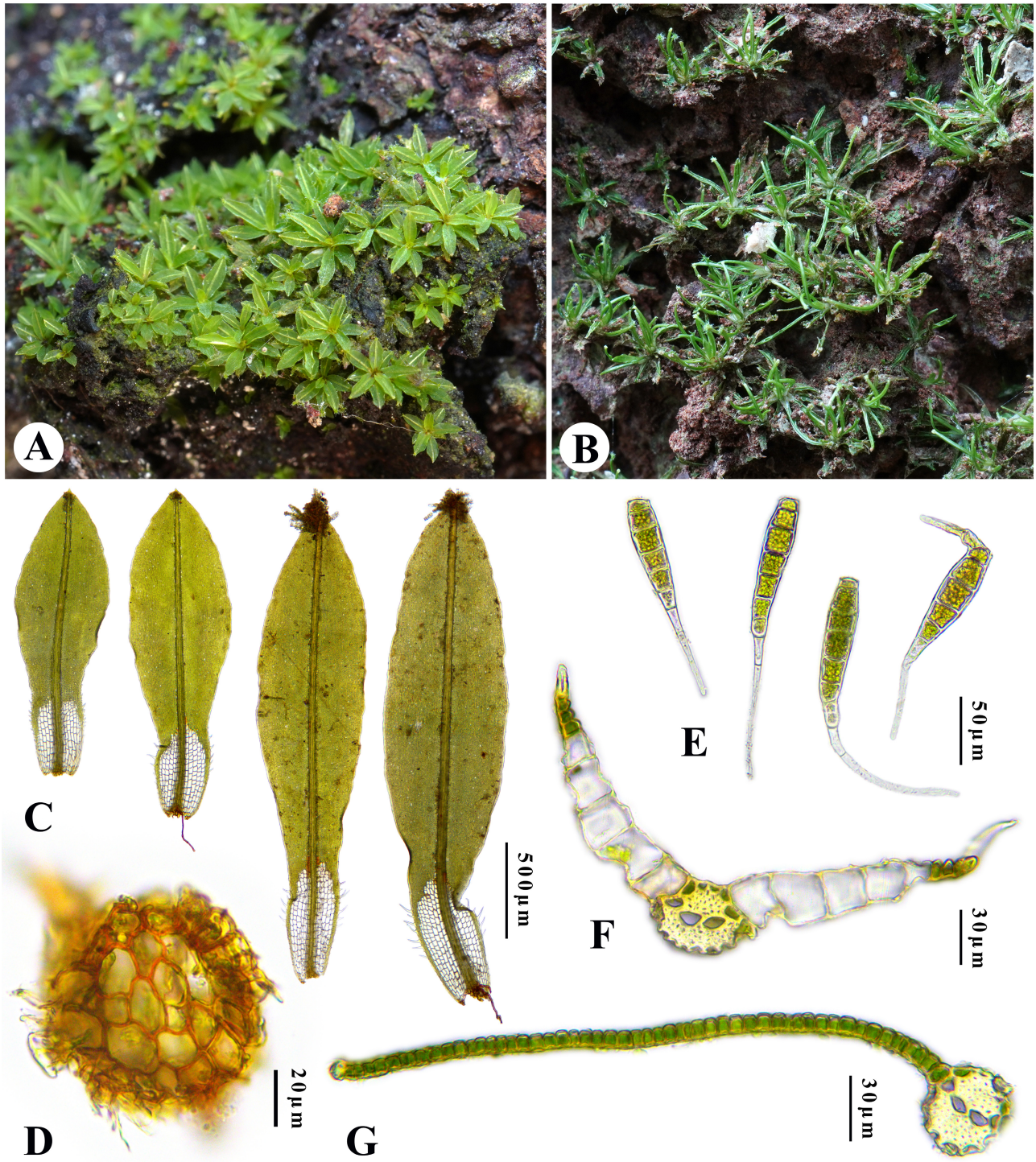


FIGURE 1. *Syrrhopodon kangyungensis* L. Zhang: A. Moist plants. B. Dried plants. C. Leaves, dorsal view. D. Transverse section of stem. E. Gemmae. F. Transverse section of hyaline lamina of leaf. G. Transverse section of chlorophyllose lamina of leaf (A from L. Zhang 16738, SZG; B from L. Zhang 16745, SZG; and the others from holotype).

Syrrhopodon kangyungensis L. Zhang *sp. nov.* 镜蓉网藓 (Figs. 1–2)

Type: China. Hong Kong. New Territories. Sheung Wo Hang. N 22.52250°, E 114.19720°. On trunk in forest, 97 m; May 18, 2026; L. Zhang 16599 (holotype, HK!; isotype, SZG!).

Paratypes: Same locality. N 22.522461°, E 114.19817°. On tree base in forest, 132 m. Sep. 4, 2026, L. Zhang 16738 (CUHK, IBK). N 22.52221°, E 114.19827°. On trunk in forest, 144 m. Sep. 4, 2026, L. Zhang 16739 (CUHK). N 22.52224°, E 114.19831°. On trunk in forest, 146 m. Sep. 4, 2026, L. Zhang 16740 (CUHK, HK, SZG). N 22.52241°, E 114.19810°. On trunk in forest, 151 m. Sep. 4, 2026, L. Zhang 16741 (CUHK, IBK, SZG). N 22.52205°, E 114.19858°. On tree base in forest, 166 m. Sep. 4, 2026, L. Zhang 16742 (CUHK, IBK, SZG). N 22.52184°, E 114.19905°. On trunk in forest, 195 m. Sep. 4, 2026, L. Zhang 16744 (HK, IBK). N 22.52164°, E 114.19923°. On trunk in forest, 216 m. Sep. 4, 2026, L. Zhang 16745 (CUHK, IBK). Hong Kong. New Territories. Ma On Shan Country Park. Along trail from Ma On Shan Country Park Management Centre to the Peak of Ma On Shan via Tiu Shau Ngam and the Hunch Backs. N 22.41395°, E 114.24683°, on trunk in forest, 570 m, Sep. 14, 2026, L. Zhang 16829 (CUHK, HK, SZBG).

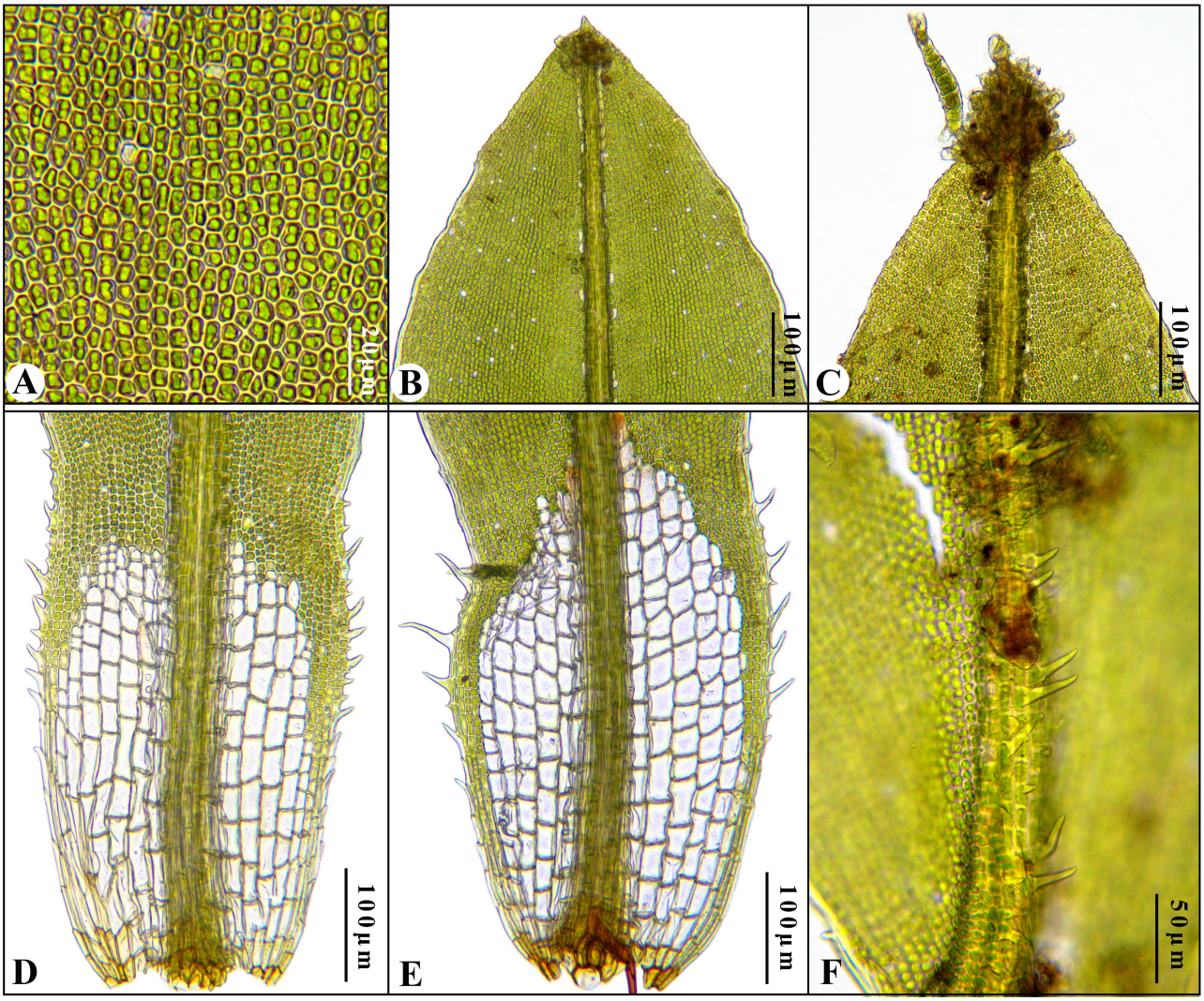


FIGURE 2. *Syrrhopodon kangyungensis* L. Zhang: A. Cells of chlorophyllose lamina. B. Upper portion of leaf, dorsal view. C. Gemmae on ventral surface of leaf tip, ventral view. D, E. Lower portion of leaf. F. Spines scattered on ventral side of costa from shoulder to mid-leaf (All from holotype).

Diagnosis:—The new species is similar to *Syrrhopodon armatus* but differs in having elliptical to narrowly elliptical leaves that are slightly flexuose when dry and flattened when moist, and chlorophyllose lamina cells that are bulging ventrally but smooth dorsally, rather than unipapillose on both surfaces.

Plants small, green, mostly solitary, rarely forming turfs, 2–4 mm high including leaves. Stems short, erect or inclined, sparsely branched, less than 1 mm high; central strand absent; rhizoids dark red. Leaves dense, the older ones in lower parts often broken, upper leaves slightly flexuose; margins above shoulders involute when dry, erect-

spreading when moist, elliptical to narrowly elliptical above a markedly smaller leaf base; apex acute to obtuse, 1.5–3.0 mm long, 0.45–0.72 mm wide. Costa strong, reaching the apex, generally smooth dorsally, papillose or spinose occasionally near apex; spines scattered on ventral surface from shoulder near apex. Leaf margins plane, bordered by 1–2 rows of hyaline, elongate cells, disappearing shortly before the leaf apex; borders at the shoulders bearing delicate hyaline cilia and teeth, the cilia mostly less than 60 μm long, few cases reaching 90 μm. Leaf base occupying about one quarter of the leaf length, composed of large hyaline cells (cancellinae) in 4–6 (–7) rows on either side of the costa, apex of hyaline lamina acute, rarely obtuse, sharply delimited. Cells of chlorophyllose lamina polygonal-rounded or rectangular, 5–9 μm in diameter, bulging ventrally, smooth dorsally. Gemmae frequent, on ventral surface of the leaf tip, fusiform with distal tail-like appendage, 0.20–0.25 mm long. Sexual condition and sporophytes unknown.

Etymology:—The epithet "*kangyungensis*" refers to the name of a historic school—Kang Yung Shu Uk (literally Kang Yung Study Hall, 镜蓉书屋), located in the village of the type locality where the new species was found. The study hall was established at least 150 years ago to educate local children and was closed in 1986. It was listed as a Declared Monument in 1991.

Discussion

The species most likely to be confused with *Syrrhopodon kangyungensis* in China is *S. armatus* (Fig. 3), a "weedy" species which is frequently found on palm trees and eucalyptus in urban areas and other disturbed habitats. As well documented by Ellis (2017), *S. armatus* is a morphologically variable species, but it can generally be recognized by the combination of following characteristics, i.e., crowded linear-ligulate (–lingulate) leaves that are tightly incurved when dry and incurved-patent when moist; a sharply toothed-spinose costa; chlorophyllose laminal cells bearing a single papilla on both the ventral and dorsal surfaces; and a limbate margin supporting a row of cilia or spines below the middle of the leaf. In Southern China, the species is often readily recognizable in the field, even with the naked eyes. The plants are small size, forming densely turfs (Fig. 3A); leaves oblong-linear to lingulate and tightly curled or contorted when dry (Fig. 3B), with involute margins and cucullate apices when moist (Fig. 3C–D, F), the hyaline lamina as wide as or slightly wider than the chlorophyllose lamina (Fig. 3D), the costa is conspicuously spinose on both surfaces (Fig. 3E), and the chlorophyllose laminal cells each bear a single papilla on the ventral and dorsal surfaces (Fig. 3F). In contrast, the new species plants are mostly solitary, rarely forming turfs (Fig. 1A–B); the leaves are elliptical to narrowly elliptical (Fig. 1C), slightly flexuose when dry (Fig. 1B), and flattened when moist (Fig. 1A, C); the hyaline lamina is conspicuously narrower than chlorophyllose lamina (Fig. 1C); the costa is generally smooth dorsally, papillose or spinose occasionally towards apex, with scattered spines on the ventral surface extending from the shoulder towards the apex (Fig. 1F–G, Fig. 2F); the chlorophyllose laminal cells are bulging ventrally but smooth dorsally (Fig. 1G). In addition, the two species also differ in their observed habitats. *Syrrhopodon armatus* prefers open, sunny, urbanized or otherwise disturbed habitats, whereas *S. kangyungensis* has so far been collected in shaded, moist forest habitats. Sporophytes have occasionally been observed in *S. armatus* (Fig. 3A–C), whereas none has been observed in the material of *S. kangyungensis* examined to date. The principal differences between both species are summarized in Table 1.

TABLE 1. Comparison of *Syrrhopodon kangyungensis* and *S. armatus*

Characters	***S. kangyungensis***	***S. armatus***
Habit	mostly solitary, occasionally forming turfs	often gregarious, densely turfs
Leaves when dry	slightly flexuose	curled-contorted
Leaves when moist	margin flattened	margin involute mostly
Leaf shape	elliptical to narrowly elliptical	oblong-linear, lingulate
Hyaline lamina vs chlorophyllose lamina	hyaline lamina markedly narrower than chlorophyllose lamina	hyaline lamina as wide as chlorophyllose lamina or slightly wider
Costa	generally smooth dorsally, papillose or spinose occasionally near apex; spines scattered on ventral side from shoulder to near apex	spinose dorsally and ventrally on surfaces
Leaf cells of chlorophyllose lamina	bulging ventrally, smooth dorsally	unipapillose on both surfaces

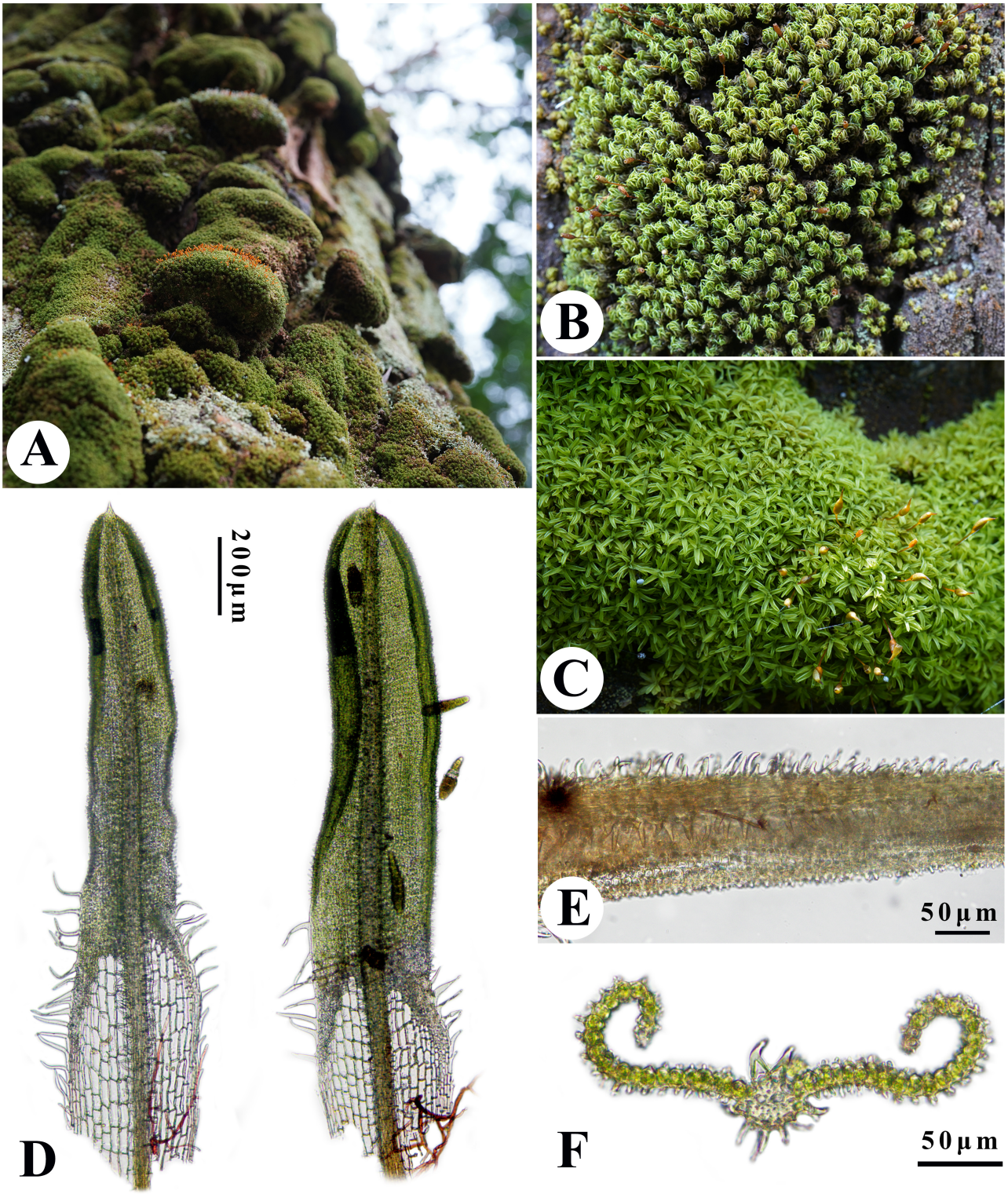


FIGURE 3. *Syrrhopodon armatus* Mitt.: A. Habit (with sporophytes, on trunk of *Lophostemon confertus*). B. Dried plants. C. Moist plants. D. Leaves, ventral view. E. Costa, dorsal view. F. Transverse section of chlorophyllose lamina of leaf (A from L. Zhang 16816, CUHK; B-C from L. Zhang 16700, SZG; D-F from L. Zhang 16926, SZG).

Our original objective was to rediscover *S. hongkongensis*, rather than discover a new species. Despite our efforts, we failed to find it during either of our two field trips. Finding small mosses in the wild can be challenging because their minute size often makes reliable identification in the field difficult, and they can easily be overlooked. One possible explanation is that we were unable to relocate the exact collection site. Nevertheless, we hope that *S. hongkongensis* still survives in the wild and that future field surveys will eventually lead to its rediscovery. It is noteworthy, and somewhat surprising, that the new species and *S. hongkongensis* occur in close proximity at Sheung Wo Hang. The site

comprises lush evergreen broad-leaf forest on a steep slope, with several seasonal streamlets. The shaded, moist, and relatively undisturbed conditions provide a suitable habitat for bryophytes. We also recorded at least two other species of Calymperaceae there: *Calymperes erosum* Müll. Hal. (1848, 182) and *Syrrhopodon prolifer* var. *tosanensis* (Cardot) Orbán & W.D. Reese (1990, 442). The occurrence of these species may be attributable to two factors: the long-term preservation of the forest, which may have allowed some native species that are now rare or absent elsewhere to persist, and the detailed field surveys conducted in the area.

Although the diversity of the genus *Syrrhopodon* Schwägr. (1824, 110) is relatively well understood, our findings suggest that additional taxa may still be discovered through detailed field surveys, particularly in relatively undisturbed habitats. With the addition of *S. kangyungensis*, 19 species and one variety of *Syrrhopodon* are now known in China, of which ten occur in Hong Kong (Zhang 2003; Jia & He 2013).

Acknowledgements

We are especially grateful to Leonard T. Ellis of the Natural History Museum (UK) for carefully reading an early draft of the manuscript. We also thank our team members, including Mr. Chan Yiu Man, Ms. Kit Tsz Ki, Ms. Li Man Ching, Ms. Ng Yan Neung, Ms. Siu Yik Man, Ms. Wong Ka Yi, and Mr. Yung Tin Chak, and thank Ms. Queenie Kit Shan Wong, Mr. Tommy Ka Lok Wan, Ms. Winnie Wing Yin Chan, Mr. Shek Shui Wa, Mr. Jack Tin Ngai Cheung, Ms. Amber Choi Chi Li and Mr. Chris Cheuk Fung Suen from the Hong Kong Herbarium for their logistic and technical support in the field. This work is jointly supported by the Agriculture, Fisheries and Conservation Department of the Hong Kong Special Administrative Region, the Shiu-Ying Hu Herbarium, School of Life Sciences of the Chinese University of Hong Kong, the Fairy Lake Botanical Garden and the Guangxi Institute of Botany under the project *Bryophyte Flora of Hong Kong*.

References

Eddy, A. (1990) *A handbook of Malesian mosses. Volume 2, Leucobryaceae to Buxbaumiaceae*. Natural History Museum Publications, London.

Ellis, L.T. (2016) *Syrrhopodon* Schwägr. (Calymperaceae, Musci) in India and adjacent regions. *Journal of Bryology* 38 (1): 1–27. https://doi.org/10.1179/1743282015Y.0000000024

Ellis, L.T. (2017) Variation in *Syrrhopodon armatus* Mitt. (Calymperaceae), and closely related taxa from Madagascar and adjacent regions. *Journal of Bryology* 39 (4): 317–323. https://doi.org/10.1080/03736687.2017.1327093

Ellis, L.T. & Tan, B.C. (1999) The moss family Calymperaceae (Musci) in the Philippines. *The Bulletin of the Natural History Museum (Botany Series)* 29 (1): 1–46.

Gao, C. (Ed.) (1996) *Flora Bryophytarum Sinicorum (Vol. 2). Fissidentales and Pottiales*. Science Press, Beijing (In Chinese).

Jia, Y. & He, S. (2013) *Species catalogue of China, volume 1, Bryophytes*. Science Press, Beijing (In Chinese).

Li, X.-J. & Crosby, M.R. (Eds.) (2001) *Moss Flora of China English Edition (Vol. 2). Fissidentaceae–Ptychomitriaceae*. Science Press, Beijing, New York; Missouri Botanical Garden Press, St. Louis.

Meagher, D., Seppelt, R.D., Cairns, A. & Franks, A. (2023) The family Calymperaceae (Bryophyta) in Australia. Part 5: The genus *Syrrhopodon*. *Telopea* 26: 75–114. https://doi.org/10.7751/telopea15779

Mohamed, H. & Reese, W.D. (1985) *Syrrhopodon* (Musci: Calymperaceae) in Malaysia and adjacent regions. *The Bryologist* 88 (2): 223–254. https://doi.org/10.2307/3243033

Reese, W.D. (1978) The genus *Syrrhopodon* in the Americas, II. The limbate species. *The Bryologist* 81 (2): 189–225. https://doi.org/10.2307/3242184

Reese, W.D., Koponen, T. & Norris, D.H. (1986) Bryophyte flora of the Huon Peninsula, Papua New Guinea. XIX. *Calymperes*, *Syrrhopodon* and *Mitthyridium* (Calymperaceae, Musci). *Acta Botanica Fennica* 133: 151–202.

Zhang, L. (2003) An updated and annotated inventory of Hong Kong bryophytes. *Memoirs of the Hong Kong Natural History Society* 26: 1–133.

Zhang, L., Corlett, R.T. & Chau, L. (1999) *Syrrhopodon hongkongensis* (Calymperaceae, Musci), a new species from Hong Kong, China. *The Bryologist* 102 (1): 122–124.
https://doi.org/10.2307/3244473