



Citation: Hariri, M.R., Irsyam, A.S.D., Ariati, S.R., Raynalta, E., Setyanti, D. & Supriyatna, I. (2024). *Cyrtosperma prasinispathum*: a new fascinating Aroid species from Papua, Indonesia. *Webbia. Journal of Plant Taxonomy and Geography* 79(2): 291-294. doi: 10.36253/jopt-16076

Received: April 26, 2024

Accepted: May 28, 2024

Published: September 3, 2024

Copyright: © 2024 Hariri, M.R., Irsyam, A.S.D., Ariati, S.R., Raynalta, E., Setyanti, D. & Supriyatna, I. This is an open access, peer-reviewed article published by Firenze University Press (<http://www.fupress.com/webbia>) and distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Editor: Alistair Hay

ORCID

MRH: 0000-0003-0943-3198
ASDI: 0000-0001-7873-6665
SRA: 0000-0001-8646-7055
ER: 0000-0002-3553-7735
DS: 0009-0001-2768-7063
IS: 0009-0007-4594-6157

Cyrtosperma prasinispathum: a new fascinating Aroid species from Papua, Indonesia

MUHAMMAD R. HARIRI^{1,*}, ARIFIN S.D. IRSYAM^{2,3}, SITI R. ARIATI¹, ERICK RAYNALTA³, DWI SETYANTI⁴, IKAR SUPRIYATNA⁴

¹ Research Center for Biosystematics and Evolution, National Research and Innovation Agency (BRIN), Cibinong 16911, Indonesia

² Herbarium Bandungense, School of Life Sciences and Technology, Institut Teknologi Bandung, Sumedang 45363, Indonesia

³ Botani Tropika Indonesia Foundation (Botanika), Bogor 16112, Indonesia

⁴ Directorate for Scientific Collections Management, National Research and Innovation Agency (BRIN), Cibinong 16911, Indonesia

*Corresponding author. Email: muhammad.rifqi.hariri@brin.go.id

Abstract. *Cyrtosperma prasinispathum* A.S.D.Irsyam & M.R.Hariri is a newly described species of Lasioid discovered in Sorong, Southwest Papua Province, Indonesia. This new species is exclusively described from living specimens that are kept at the Bogor Botanic Gardens. Morphologically, it has a glossy leek-green spathe that is deflected, with a yellowish-green or yellow spadix. Its striking-colored spathe made this species an important candidate for horticultural plants.

Keywords: Araceae, Lasieae, Lasioideae, Malesia, New Guinea.

INTRODUCTION

Cyrtosperma Griffith (1851: 149) is the only oligotypic aroid genus exhibiting higher diversity to the east than to the west of Wallace's Line, comprising 14 species spread of which 13 occur east of Wallace's Line (Hay 1988; Dearden and Hay 2001; Hay and Imran 2020; Raynalta et al. 2024).

In 2024, we conducted an examination of the living collection of *Cyrtosperma* collected from the Southwest Papua Province, which is currently kept in the Bogor Botanic Gardens (BBG). It has come to our attention that certain specimens previously labelled as *C. hambalii* A.Dearden & A.Hay exhibit notable morphological traits that do not align with the assigned name. After further examination we have considered that the specimens are new to science. The new species can be distinguished from *C. hambalii* based on its vegetative and generative morphological characteristics. In this study, we provide a comprehensive description and accompanying photograph of a newly described species of *Cyrtosperma* found in the Indonesian region of Papua.

MATERIALS & METHODS

The plant material was examined from the living collection of Bogor Botanic Gardens. In addition, we inspected the herbarium specimens at Herbarium Bogoriense (BO) and Herbarium Bandungense (FIPIA) to find further specimens that corresponded to the recently identified species. The plant material was examined for its morphological characteristics and selected portions were captured using the Dinolite digital microscope.

TAXONOMIC TREATMENT

Cyrtosperma prasinispathum A.S.D.Irsyam & M.R.Hariri, **sp. nov.** (Figure 1).

Type: Prepared from a living plant at Bogor Botanic Gardens-BRIN. Indonesia: Southwest Papua Province, Sorong Regency, 14 March 2024, MRH 777 (holotype FIPIA, isotype BO).

Diagnosis

Cyrtosperma prasinispathum is geographically associated with *C. macrotum* Becc. ex Engl. (1988: 451), but exhibits distinct characteristics. *Cyrtosperma prasinispathum* differs by having unarmed abaxial leaf (vs armed abaxial leaf), oblanceolate posterior lobes (vs ovate to broadly lanceolate posterior lobes), elliptic anterior lobe (vs ovate to deltoid anterior lobe), a deflected spathe (vs deflected or shortly decurrent spathe on the peduncle), entire spathe margin (vs undulate spathe margin), leek-green (vs white-yellowish green/brown to purple), a yellowish-green to yellow spadix (vs pale yellow to green), and tetramerous tepal (vs hexamerous to tetramerous, or mixed tepal).

Description

Small herbs, 21-30 cm high. Leaves ca. 5-9 per crown, clustered; sheath 2-4 cm long, brown; petiole slender, 5-25 cm long, brown with black patches, armed; spines straight, downward, and mostly upward, 1-4 mm long, yellowish brown; lamina sagittate-hastate, anterior lobe elliptic, shorter than posterior lobes, 3.5-12 × 2-6.2 cm, downward, flat in juvenile leaves; posterior lobes oblanceolate, 4.2-17 × 2-5.5 cm, downward, sinus 60-80 degrees; adaxial leaf surface dark green, abaxial leaf surface glaucous. Peduncle 50-73 cm long, brown and black patches, armed; spines straight, downward, and mostly upward, minute, 1-2 mm long, yellowish brown. Spathe broadly opened, lanceolate, deflected, 10.9-11.5 × 2.5-2.9 cm, leek-green. Spadix 35-45 × 6-7 mm, yellowish green,

turning yellow when mature; stipe 3-6 mm long, leek-green. Flowers bisexual, perigoniate; tepals 4, free, green, turning yellow when mature; stamens 4, free; filaments free, flat, and broad; anthers ca. 0.5 mm long, white, not exerted from the tepals when anthesis; pollen white; ovary 1-locular, brown; stigma discoid, sessile, brown.

Etymology

The specific epithet is derived from the Latin 'prasinus' – and 'spathum', which signifies the leek-green coloured spathe.

Proposed conservation assessment

The species status is yet to be determined according to the criteria specified by the IUCN Red List. Based on the limited available information, we recommend categorizing it under the Data Deficient (DD). This conclusion is drawn solely from the observations made on the living collection at BBG.

Notes

The living collections of *C. prasinispathum* were originally collected from Taman Wisata Alam (TWA) Sorong, located in Southwest Papua, in 2007. The collection took place at an altitude of 27 meters above sea level, as part of Prof. Dr. Widyatmoko's exploratory endeavours from June 11th to July 9th, 2007. The seeds, under collection number DW1091, were subsequently germinated and cultivated in the Bogor Botanic Gardens greenhouse. The species previously recognised as *C. hambalii* has been designated as a distinct species based on our observations in 2024.

Cyrtosperma prasinispathum belongs to the 'Macrotum group' and consists of tetramerous flowers. The 'Macrotum group' is distinguished by a non-convolute spathe at the lower part, and it consists of species with tetramerous, pentamerous or hexamerous flowers (Hay, 1988). This study introduced a novel species to the 'Macrotum group', resulting in a total of four species, consisted of *C. beccarianum* A.Hay (1988: 455), *C. macrotum* A.Hay, *C. hayii* Raynalta, M.R.Hariri & A.S.D. Irsyam (2024: 235), and *C. prasinispathum*.

ACKNOWLEDGMENTS

The authors would like to thank the Directorate for Scientific Collections Management - BRIN for granting access to the BBG living collection. The Dinolite equipment was made accessible by The Arcadia - Millenium

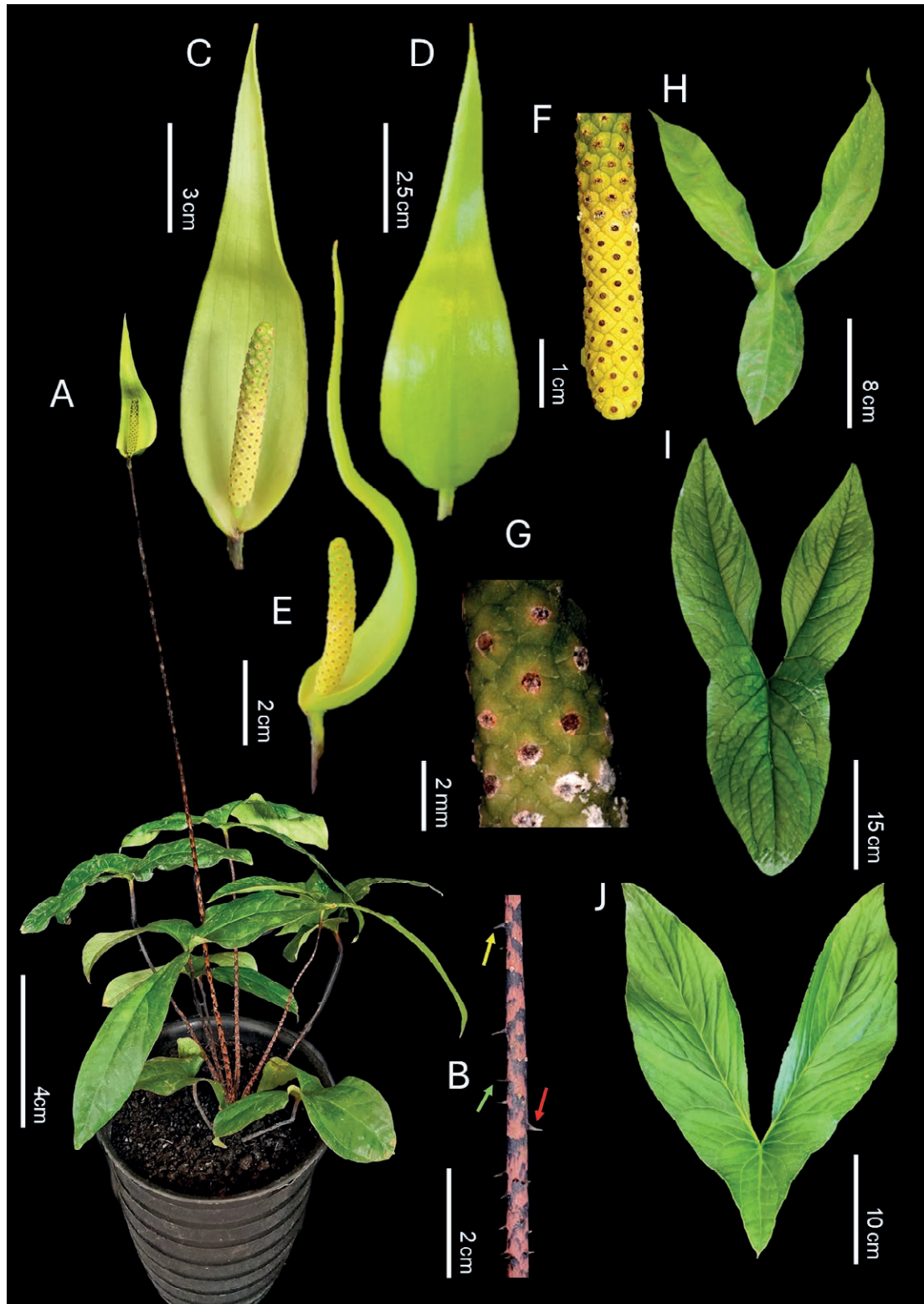


Figure 1. *Cyrtosperma prasinispathum* (A-H), *C. macrotum* (I), and *C. hambalii* (J). A. Habit; B. Petiole with spine tip pointing upward (red arrow), downward (yellow arrow), and straight (green arrow); C-E. Three different views of spathe; F. Spadix; G. Part of upper-half spadix showing immature flowers; H. *C. prasinispathum* leaf; I. *C. macrotum* Becc. ex Engl. Leaf; and J. *C. hambalii* A.Dearden & A.Hay leaf. The three leaves show distinguishable characteristics among different species.

Seed Bank Partnership, under the guidance of Dr. Dian Latifah, M.App.Sc, which allowed for the macromorphological observation of *C. prasinispathum*. The authors express gratitude to the editor and reviewers for their essential and insightful suggestions.

REFERENCES

- Brown NE. 1882. *Podolasia stipitata* N.E.Br. The Gardeners' Chronicle. XVIII: 70–71.
- Dearden A, Hay A. 2001. A new species of *Cyrtosperma* (Araceae) from West Papua. *Aroideana*. 24: 102–104.
- Griffith W. 1851. *Notulae ad Plantas Asiaticas*. Vol V part 3. Bishop's College Press, Calcutta.
- Hay A. 1988. *Cyrtosperma* (Araceae) and its Old World allies. *Blumea*. 33: 427–469.
- Hay A, Imran. 2020. A third enormous New Guinea Lasioid — *Cyrtosperma timikense*, a new species from southern Papua Province, Indonesia. *Aroideana*. 43: 97–107.
- Mayo SJ, Bogner J, Boyce PC. 1997. *The Genera of Araceae*. Royal Botanic Gardens, UK.
- Raynalta E, Hariri MR, Irsyam ASD. 2024. *Cyrtosperma hayii* (Araceae, Lasioideae), a unique new species with downward pointing spines from Southwest Papua Province, Indonesia. *Phytotaxa*. 641(3): 235–237.