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Nitidochapsa leprieurii (Ostropales, Graphidaceae): A New Notes Lichen from Moluccas and Kalimantan, Indonesia

Fandri Sofiana Fastanti[1], Suharja[2], Roland Putra Pribadi Ahmad[3] & Atik Retnowati[1]

[1] Research Center for Biosystematics and Evolution, National Research and Innovation Agency of Indonesia, Jl. Raya Jakarta-Bogor Km.46 Cibinong, 16911, West Java, Indonesia
[2]Directorate of Scientific Collection Management, National Research and Innovation Agency of Indonesia (BRIN), Jakarta, Indonesia
[3]Yayasan Tumbuhan Asli Indonesia
Correspondence: fand003@brin.go.id

ABSTRACT

Fandri Sofiana Fastanti, Suharja, Roland Putra Pribadi Ahmad, & Atik Retnowati 2026. *Nitidochapsa leprieurii* (Ostropales, Graphidaceae): Sebuah catatan baru lichen asal Maluku dan Kalimantan, Indonesia. Floribunda 9(1) 22 – 26 — *Nitidochapsa* merupakan salah satu genus anggota suku Graphidaceae yang beranggotakan paling banyak spesies pada kelompok lichen crustose. Genus ini tersebar di kawasan pantropis, termasuk Indonesia. Koleksi lapang dilakukan di Halmahera (Maluku Utara) dan Sangatta (Kalimantan Timur) pada berbagai macam habitat. Spesimen yang diamati merupakan sampel yang tumbuh epifit pada kulit kayu dan cabang pohon. Identifikasi dilakukan dengan mengamati karakter morfologi pada talus, apotesia, dan didukung dengan pengamatan mikroskopik yaitu pada askospora dan karakter anatomi lainnya. Hasil penelitian menunjukkan bahwa *Nitidochapsa leprieurii* yang dilaporkan sebagai spesies penting sebagai rekaman baru dari Maluku Utara dan Kalimantan. Catatan ini memperluas pengetahuan distribusi spesies tersebut di Asia Tenggara dan keanekaragaman lichen di Indonesia. Catatan ini juga menekankan pentingnya eksplorasi dalam bidang lichenologi yang berkelanjutan di wilayah-wilayah yang masih sedikit dipelajari seperti, Maluku Utara dan Kalimantan. Informasi mengenai morfologi, anatomi, dan sebaran jenis disajikan untuk mendukung penelitian dan upaya konser-vasi di masa mendatang.

Kata kunci: crustose, Graphidaceae, lichen, Malesia, Asia Tenggara.

Fandri Sofiana Fastanti, Suharja, Roland Putra Pribadi Ahmad, & Atik Retnowati 2026. *Nitidochapsa leprieurii* (Ostropales, Graphidaceae): A New Notes Lichen from Moluccas and Kalimantan, Indonesia. Floribunda 9(1) 22 – 26 — *Nitidochapsa* is one of the genera in Graphidaceae, which has the largest number of species in the crustose group. This genus is distri-buted in the pantropical region, including Indonesia. Field collections were conducted in Halmahera (North Moluccas) and Sangatta (East Kalimantan) from various habitats. Specimens were observed growing epiphytically on tree bark and branches. Species identification was based on the morphological characters of the thallus, apothecia and supported by microscopic examination of ascospores and other anatomical features. As a result, *Nitidochapsa leprieurii* is reported here as a noteworthy lichen species newly reported from Moluccas and Kalimantan. This record extends the known distribution of the species within Southeast Asia and contributes to the lichen diversity in Indonesia. The discovery also emphasizes the importance of continued lichenological exploration in under-studied regions

such as North Moluccas and Kalimantan. Information on morphology, anatomy, and distribution is provided to support future studies and conservation efforts.

Keywords: crustose, Graphidaceae, lichen, Malesia, Southeast Asia.

INTRODUCTION

Nitidochapsa Parnmen, Lücking & Lumbsch is a genus of lichen-forming fungi that belongs to the family Graphidaceae. The genus is charachterized by a crustose thallus, smooth, and chroodiscoid ascomata with recurved marginal lobules (Poengsungnoen et al. 2014). *Nitidochapsa* was segregated from the genus *Chapsa* based on molecular, morphological differences, and chemical characteristics (Parnmen et al. 2012, 2013; Kraichak et al. 2013). It is part of a group of lichens frequently studied for their diversity in tropical ecosystems. Species of *Nitidochapsa* are typically found in tropical regions, especially in humid forests, where they usually grow epiphytically on tree bark.

In Indonesia, current information on *Nitidochapsa* remains limited. Among 596 lichens species reported in Indonesia (Retnowati et al. 2019), and no data existed for this genus according to Global Biodiversity Information Facility (GBIF 2026). This lack of records is primarily caused by the low current number of species which comprises only five accepted species worldwide, i. e. *N. stictoides*, *N. leprieurii*, *N. aggregata*, *N. phlyctidea*, and *N. siamensis* (GBIF 2026, Poengsungnoen et al., 2014). The distribution of these genera in Asia includes Malaysia, the Philippines, Thailand, and New Guinea. This research revealed the first Indonesian record of *Nitidochapsa leprieurii* found from the Moluccas islands and Kalimantan. This finding shows that exploration is an essential activity to discover the diversity of Indonesian lichen.

MATERIALS AND METHODS

The specimens were collected during the fieldwork on Halmahera Island in September 2022 and East Kalimantan in August 2024, following the lichen collection guideline provided by The British Lichen Society website (2026). The specimens were found growing on the bark and branches of *Syzygium* and *Mangifera*. The specimens were collected as fresh material, and completed by detailed field information, such as collection date, location, etc. Morphological characters (thallus, ascomata), anatomy (ascus, ascospores, hymenium) and chemical profile (spot test) were analyzed following Orange et. al. (2010). Morphological examination were performed by using stereo microscope, while anatomical observation were observed under a compound microscope.

RESULT AND DISCUSSION

Taxonomic Treatment

Nitidochapsa leprieurii (Mont.) Parnmen, Lücking & Lumbsch.

= *Stictis leprieurii* Mont., Annls Sci. Nat., Bot., Sér. 4 3: 97 (1855); *Cryptodiscus leprieurii* (Mont.) Sacc., Syll. Fung. (Abellini) 8: 672 (1889); *Phaeotrema leprieurii* (Mont.) Sherwood, Mycotaxon 5(1): 203 (1977); *Thelotrema leprieurii* (Mont.) Hale, Mycotaxon 11(1): 131 (1980); *Chapsa leprieurii* (Mont.) Frisch., Biblthca Lichenol. 92: 105 (2006).

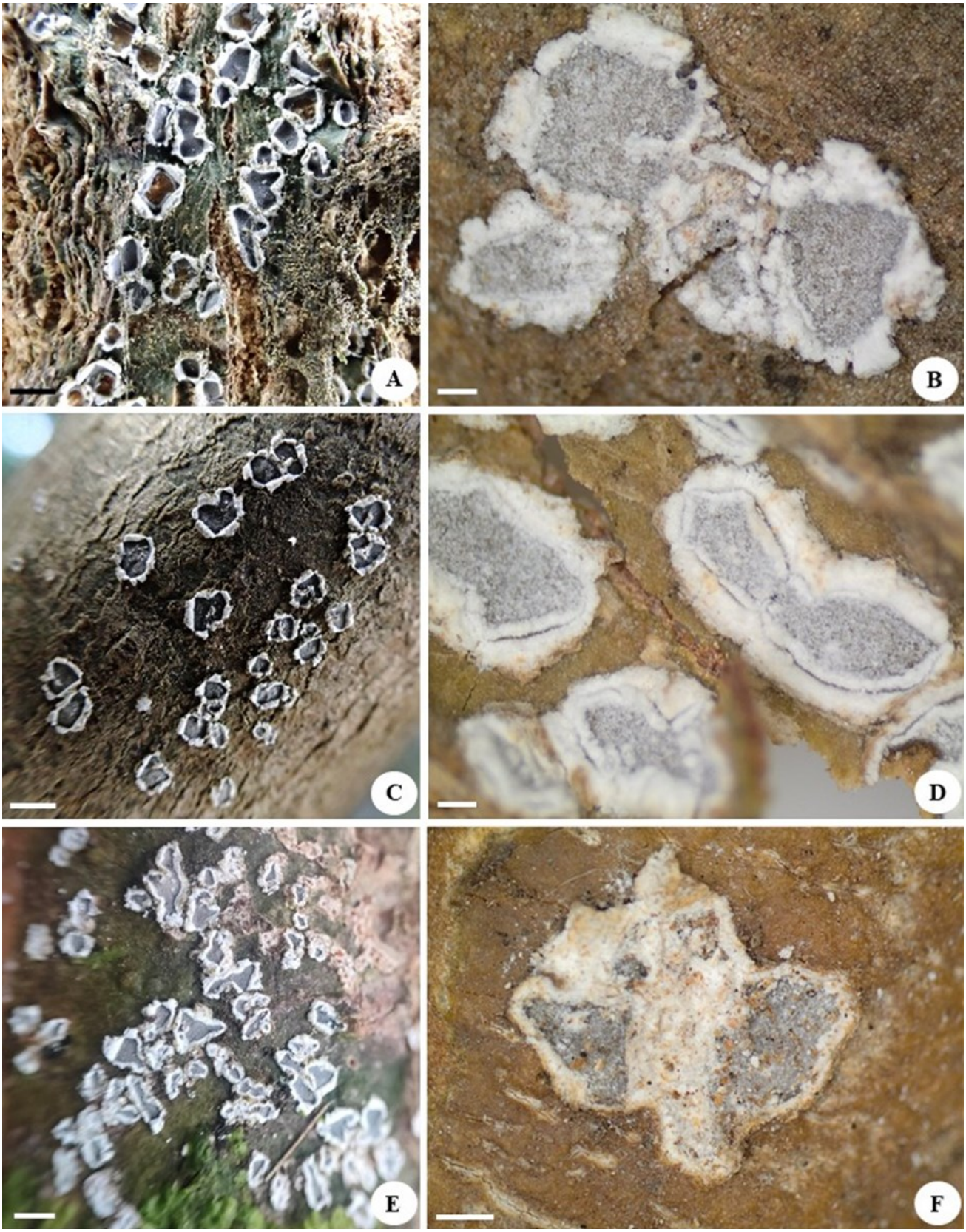

Figure 1. Thallus of *Nitidochapsa leprieurii* with ascomata, A-B. Thallus with ascomata, on *Mangifera* tree bark in East Kalimantan, FSF 160; C-D. on *Syzygium* tree bark, FSF 166; E-F. on *Mangifera* tree bark in Halmahera, FSF 75. Scale bars: A, C, E = 1 mm; B, D, F = 200 µm.

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Identification. Thallus corticolous, crustose, dark green, smooth to rough (depending on the substrates); cortex prosoplectenchymatous in the upper part, irregular. No microcrystals found. Ascomata erumpent, angular-rounded, dark grey disc, exposed, with white lobulate margin, 3–7 recurved lobules, felted, individual ascomata 0.8 × 1.1 mm broad. Columella absent. Excipulum prosoplectenchymatous. Hymenium hyalin, 73.8–82.6 µm high. Paraphyses non-branched. Ascus contains 8 ascospores, 71,6–78,5 × 10.3–12.1 µm. Ascospores brown, oblong, 3 septate with thick wall and lenticular lumina, 10.3–13.4 × 4.8–5.5 µm.

Figure 2. Microcharacters of *Nitidochapsa leprieurii*. A. Section of ascoma; B. Ascus; E. Ascospores. Scale bars: A = 200 µm, B = 10 µm, C = 20 µm.

Chemistry. No chemical reaction

Distribution. Species are distributed in the pantropical region including Indonesia, Central America, Central Africa, Asia: India, Thailand (Poengsungnoen et al. 2014), Sri Lanka, Malaysia, Philippines, Papua New Guinea, and Australia (GBIF 2026).

Habitat. Corticolous, semi-shaded area, found on a mango tree along the district main road of Halmahera; mango tree from Sangatta, East Kalimantan.

Specimens examined. INDONESIA. MOLUCCAS ISLANDS, North Moluccas, Halmahera, Mango tree along the district main road of Halmahera (0°27'06.2"N, 127° 34'22.8"E), 17 September 2022, FSF 75; KALIMANTAN, East Kalimantan, Sangatta (0°24'21.8"N, 117°28'26.4"E) 10 August 2024, FSF 160, FSF 166.

Note. This species is easily recognized in the field by its white recurved margin and dark green thallus. This species is similar to *N. siamensis* in its thallus morphology, ascospores size, and the absence of secondary metabolite substances (Poengsungnoen et al. 2014). *Nitidochapsa leprieurii* contrasts with *N. siamensis* by having large of ascomata, felty surface and recurved margins.

Nitidochapsa leprieurii is the type species for *Nitidochapsa,* and was previously known as *Chapsa leprieurii*. This species was segregated from *Chapsa* due to its brown ascospores (Parnmen et al. 2013). In Indonesia, *Chapsa leprieurii* has been reported from Java, where it grows on *Durio zibethinus* and lirellae as a reproductive form (Kusmoro et al. 2019). In contrast, *Nitidochapsa* forms apothecia with an exposed disc for sexual reproduction (Parnmen et al. 2013). Unfortunately, the author could not access either photos or specimens of *C. leprieurii* from Java to support this study. Consequently, we exclude those specimens from this research.

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