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Cyathus montagnei of North Sumatera (Basidiomycota: Nidulariaceae)

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***Cyathus montagnei* of North Sumatera (Basidiomycota: Nidulariaceae)**

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Abstract. Three specimens of *Cyathus* spp. were collected during a field survey conducted in Tongkoh village and Taman Hutan Raya forest, North Sumatera. The three specimens were preliminary identified leading to one species, namely *Cyathus montagnei*. A description of North Sumatran *C. striatus* is given. From our knowing, this is the first report of *Cyathus montagnei* collected in North Sumatera with locality of Karo regency. Hence, further exploration upon identified species and remaining unexplored species is needed to reveal their assemblages or species richness in North Sumatera.

1. Introduction

The genus *Cyathus* Haller from family Nidulariaceae, is classified and described as a taxonomic clade in Basidiomycetous fungi [1]. The fungus is characterized by a unique three-layered bell or vase-shaped *basidium* with propagational structure known as peridiole attached into the inner wall through funicular cord apparatus. The peridioles are shaped like bird's eggs filling the empty space of vase structure resembling a bird's nest appearance [2].

The genus, *Cyathus* is reported to consist of 45 species with global distribution ranging from temperate to tropical region, though rarely found in polar or glacial region [3]. In Indonesia, members of *Cyathus* have been collected and reviewed through herbarium specimens revisions and descriptions [4]. However, information of their distribution within diverse habitats in Indonesia is still limited in contrary to its study of prospective mycochemicals. In addition, studies upon their distribution and assemblage across habitats is still needed as an update on *Cyathus* diversity and species richness in Indonesia.

During an exploratory survey in tropical forest of North Sumatera, we found three specimens of unidentified *Cyathus* species inhabiting forest floor of Tongkoh and *Taman Hutan Raya*. The unidentified species are anchored firmly on top of decayed woods in colonies. Furthermore, the specimen is described to obtain the identity based on herbarium specimen examination.

2. Methodology

Specimens collected during a survey in Tongkoh village and Taman Hutan Raya forest, North Sumatera were stored in paper wrap and delivered to Laboratory of Plant Taxonomy, Department of Biology, Universitas Sumatera Utara. The specimens were then identified mainly based on morphological and anatomical characteristics through stereoscopic and light microscopic images [5–7]. The stages chosen in this study were based on previous report. Specimens of *Cyathus* from North



Sumatera were described from its macromorphological features (shape, size, colour, outer and inner surface of peridium) and supporting micromorphological features.

3. Species Description

Cyathus montagnei Tul. *Ann. Sci. Nat.* 1:70, 1844

Peridium small to large, slender at the base, 6-29 mm high and 5-12 mm wide of the mouth, campanulate; attached to the substratum by a light brown (6D4) to rust brown (6D8) mycelium; lip of mouth faintly sulcate, surface of the lip fimbriate. Exterior layer is plicate, leather brown (6E6,6E8); hairy present, not velvet, stiff shaggy and scattered; Interior layer plicate (2 mm from the top), greyish brown (6F3) to pale brown (6E5,6E8), shiny; mouth fimbriate and the margin freely sulcate. Peridiole 2-3 mm in diameter, about 0.5-0.6 thick, lenticular, greyish brown (6E3,6F3), dark brown (6F4) to black, shiny, one layer, tunica present. Basidiospore small, $10-20.9 \times 7.7-12 \mu\text{m}$, thick walled ($2 \mu\text{m}$), oval to ellipsoid, smooth, viscosity of wall nearly hyaline. Hyphae 2-3 μm in diameter.

Material examined: JAVA, East Java, Malang, 8 Dec. 1936, *P. Groenhart* 1064, 1065, 1066, 1067, 1068, SP17779 (BO); East Java, Malang, 10 Feb. 1937, *P. Groenhart* 1069, 1071, SP 16083, 18114 (BO)

Habitat: Gregarious on decayed wood



Figure 1. Colonies of *C. montagnei* documented in North Sumatera, White bar represent a length dimension of $\pm 6 \text{ mm}$

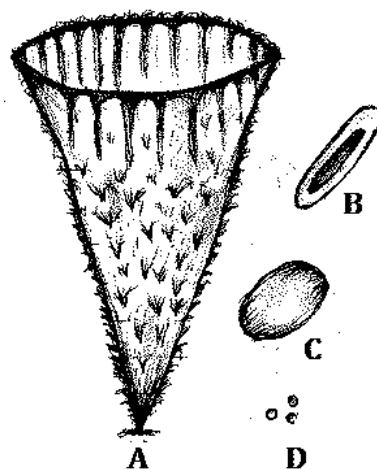


Figure 2. Illustration of macro-morphology: **A.** Basidiocarps, Bird's nest fungus (*Cyathus montagnei*), **B.** Peridiole layer, **C.** Peridiole (± 2.5 mm), **D.** Basidiospores (± 10 μ m)

Distribution: Indonesia (Sumatra, Java), South America (Venezuela, Brazilia) [8–10]

Remarks: The species can be distinguished from other plicate *Cyathus* characterized by the combination of the small campanulate-shaped cups, coarse shaggy hair, pale brown colour of peridium and small basidiospores. Formerly this species is recorded as *Cyathus byssisedus* (Jungh.) Tul.

4. Conclusion

Cyathus montagnei recorded in this study is new to locality information of *Cyathus* distribution in Indonesia. Specimens of *C. montagnei* were found inhabiting tropical forest of North Sumatera, in Karo regency. Further investigation and exploration is needed to reveal the possibility of other unrecorded species of *Cyathus* in this area.

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