

Two New Species of *Marasmius* : Addition to the Macrofungi of West Bengal, India

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Abstract

The enormities of phytogeographical and ecological facets and resultant biological diversity have made West Bengal an abode for wide varieties of macrofungi. *Marasmius androsaceus* and *Marasmius siccus*, members of Marasmiaceae were collected from, different villages and natural sal forests within the lateritic region of West Bengal and were reported for the first time from the state. A detailed macro and microscopic features were presented in this paper.

Key words : *Marasmius androsaceus*, *Marasmius siccus*, New record.

Fungi belong to one of the mega-diverse groups (1, 2) and the generally accepted estimate of the number of species of fungi on earth is a conservative 1.5 million but only 5% of it has been explored (3) and in India is generating highest number of new species about 913 (4). West Bengal treasures diverse ecological domains with wide array of altitudinal, climatic and edaphic amalgamations which creates favorable conditions for flourishing diverse group of organisms including macrofungi and this virgin sphere is anticipating scientific pursuit and inventorization. In this direction, our laboratory have been engaged in surveying different areas of West Bengal and collected many unreported macrofungi, and some of them already have been reported (5—12). In this paper we reported *Marasmius androsaceus* and *Marasmius siccus* for the first time from West Bengal. Earlier *Marasmius androsaceus* was reported from Saharanpur, UP (13), *Marasmius siccus* from Nagpur (14) and Lukhnow, UP (15).

(The authors are grateful to Department of Environment, Government of West Bengal for financial assistance).

Methods

The study materials were collected during the field trip of lateritic region of West Bengal (2008-2009). The morphological and ecological features were

recorded and photographs were taken in the field. The specimen was brought to the laboratory and microscopic features were determined by using Carl Zeiss AX10 Imager A1 phase contrast microscope. The specimen was identified according to Singer (16) and Ramsbottom (17). The voucher specimen has been deposited in Mycological Herbarium of the Department of Botany, University of Calcutta.

Results and Discussion

Micro and Microscopic Observations of Marasmius siccus (Schwein.) Fr. (Fig. 1)

Common Name : Orange Pinwheel.

Pileus 5—16 mm, rusty orange in color, surface dry, smooth, slightly depressed in the center with radially sulcate striations (Fig. 1a). Lamellae white, distant, 1-2 mm wide, with 1.5—2.5 mm spacing, regular, lamellulae one tiered, free to adnexed, margin even, discolorous (darker). Stipe slightly flattened, concolorous with pileus up to 2/3rd length from base then fading to creamy white, 30—48 × 0.5 mm, mostly equal or slightly tapered at apex, shiny and smooth, exannulate, evolvate, base inserted and broad. Spore print white. Basidiospores subglobose to ellipsoidal (Fig. 1c), hyaline, double walled, hilar appendage conspicuous (7.88) 8.67—10.24 (11.82) × (7.29) 7.88—8.67 (9.06) (9.52 ± 1.3 × 8.16 ± 0.45), Q=1.08—1.30 (1.167) (Q = 1.16 ± 0.09). Basidia 4.73—5.91 × 2.58—4.14 μm

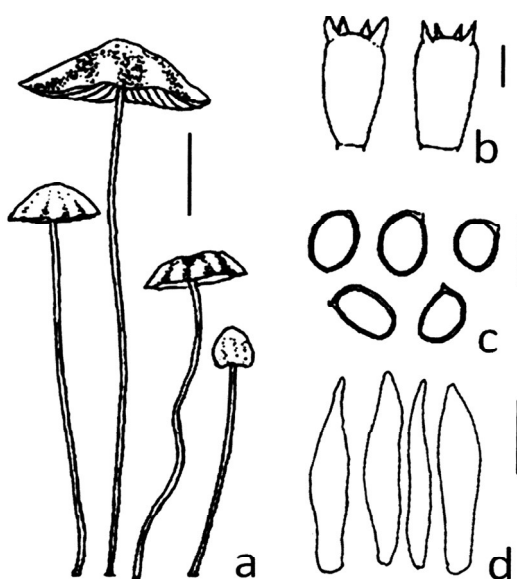


Figure 1. *Marasmius siccus* (Schwein.) Fr. (a) Basidiocarp bar = 10 mm; (b) Basidia bar = 2 μ m; (c) Basidiospores bar = 10 μ m; (d) Pleurocystidia bar = 10 μ m.

(Fig. 1b), hyaline, clavate, sterigmata (4) with pointed apex and broad base, 1.97 μ m long. Pleurocystidia cylindrical to elongated (Fig. 1d), hyaline, 23.64—27.58 \times 5.12—5.91 μ m, with pointed to blunt apices. Broom cells numerous with 3.152—4.728 μ m long projections, projections equal and hyaline. Stipitipellis composed of elongated, septate and yellowish hyphae arranged parallelly 2.76—4.93 μ m broad.

Ecology: Grows gregariously in moist and shady areas upon fallen and decaying Sal leaves and twigs within sal forests of lateritic region of West Bengal, during July—September amid monsoon season.

TaxonomySource: <http://www.indexfungorum.org/Names/genus-record.asp?RecordID=18018>

Name: *Marasmius siccus* (Schwein.) Fr., *Schr.naturf. ges. Leipzig* 1: no. 677 (1822)

Basionym: *Agaricus siccus* Schwein. 1822

Position in Classification: Marasmiaceae, Agaricales, Agaricomycetidae, Agaricomycetes, Basidiomycota, Fungi.

Deposition: The voucher specimen has been preserved in Mycological Herbarium of the Depart-

ment of Botany, University of Calcutta, Kolkata, West Bengal, India (CU/BOT/MS/132).

Macro and Microscopic Observations of Marasmius androsaceus (L.) Fr. (Fig. 2)

Common name: Horsehair fungus.

Pileus creamy buff to clay pink with reddish brown center when young turning into violaceous black at maturity, 3—5 mm broad, surface dry, smooth, convex to broadly convex with papilla (Fig. 2a), context thin, <1 mm thick. Lamella clay pink in color, attached to collar, regular, lamellulae absent, even, concolorous. Stipe 15—80 \times 0.3—0.9 mm, smooth, equal, central, slightly flattened when young and often spirally twisted at maturity, dark brown when young turning violaceous black at maturity, exannulate, evolvate, base inserted and broad, sometimes caespitose. Spore print white. Basidiospores ellipsoidal (Fig. 2c), slightly flattened at distal end, hyaline or with yellowish content, hilar appendage conspicuous with an indentation, (10.44) 11.03—11.82 \times (7.80) 7.88—8.08 (8.12) (11.36 \pm 0.41 \times 7.97 \pm 0.12), (Q = 1.34—1.46 (1.41), (Q = 1.42 \pm 0.036), walls up to 1.97 μ m thick. Basidia clavate to cylindrical (Fig. 2b), hyaline, tetrasterigmatic, 12.61—13.40 \times 7.09—7.88 μ m; sterigmata-4, pointed, 3.15—3.94 μ m long. Pleurocystidia varying in shape (Fig. 2d), clavate, pointed to smoothly constricted, sometimes with vacuoles and apical thickening, hyaline, 14.97—27.58 \times 5.91—7.88 μ m. Broom cells numerous, globose to subglobose, 17.73—19.7 μ m with irregular finger like processes up to 1.18 μ m long. Stipitipellis yellowish brown with compactly and parallel cells, 3.94—7.68 μ m.

Ecology: Grows gregariously in moist and shady to exposed areas upon fallen bamboo and paddy straw and husks in the villages of lateritic region of West Bengal, during June—September amid monsoon season.

Taxonomy Source: <http://www.indexfungorum.org/Names/Names Record.asp? RecordID=207938>

Current name: *Marasmius androsaceus* (L.) Fr. *Epicr. syst. mycol.* (Upsaliae): 385 (1838) [1836—1838]

Synonymy: *Agaricus androsaceus* L., *Sp. pl.* 2: 1175 (1753)

Agaricus pineti Batsch, *Elench. fung.* (Halle): 73, tab. 3: 9 (1783)

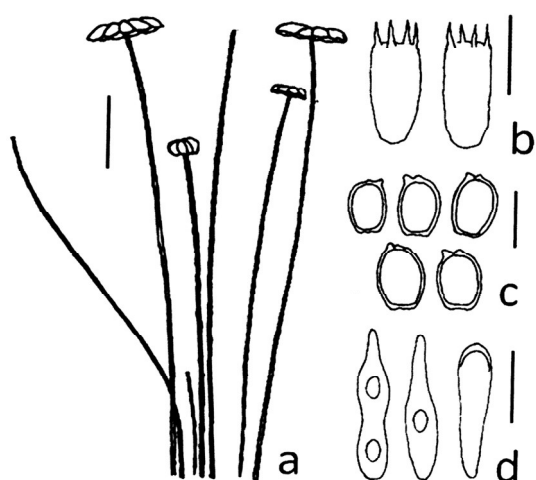


Figure 2. *Marasmius androsaceus* (L.) Fr. (a) Basidiocarp bar = 5 mm; (b) Basidia bar = 10 μ m; (c) Basidiospores bar = 10 μ m; (d) Pleurocystidia bar = 10 μ m.

Androsaceus androsaceus (L.) Rea, *Brit. basidiomyc.* (Cambridge) : 531 (1922)

Chamaeceras androsaceus (L.) Kuntze, *Revis. gen. pl.* (Leipzig) 3 : 478 (1898)

Gymnopus androsaceus (L.) J. L. Mata & R. H. Petersen, in Mata, Hughes & Petersen, *Mycoscience* 45 (3) : 220 (2004)

Merulius androsaceus (L.) With., *Arr. Brit. Pl.*, Edn 3 (London) 4 : 148 (1796)

Setulipes androsaceus (L.) Antonin, *Ceska Mykol.* 41 (2) : 86 (1987)

Position in Classification : Marasmiaceae, Agaricales, Agaricomycetidae, Agaricomycetes, Basidiomycota, Fungi

Deposition : The voucher specimen has been preserved in Mycological Herbarium of the Department of Botany, University of Calcutta, Kolkata, West Bengal, India (CU/BOT/MS/133).

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