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Pseudocolus fusiformis, an uncommon stinkhorn new to Turkish mycobiota

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Abstract — *Pseudocolus fusiformis* is the first representative of the genus to be recorded from Turkey. The species is characterized by basidiocarps with three apical arms that are distally fused and inner surfaces covered by a dark greenish mucoid gleba. A short description and macro- and microphotographs are provided.

Key words — *Basidiomycota,* biodiversity, new record, *Phallales*

Introduction

Pseudocolus Lloyd is a small and uncommon stinkhorn genus, which includes *P. fusiformis*, which is characterized by white to pale orange stem bearing usually 3-4 apical arms united at the their tips and dark greenish mucoid gleba covering the inner surface of the arms (Hemmes & Desjardin 2002, Meyers 2004, Phillips 2005). According to current checklists (Solak et al. 2007, Sesli & Denchev 2010) and latest records (Uzun et al. 2010, Kaya et al. 2010), the genus has not yet been reported from Turkey. Our recent collection of *P. fusiformis,* therefore, constitutes the first report of the species and genus for Turkey.

Materials & methods

The fungi samples were collected from Yomra district of Trabzon province on the east of Black Sea coast of Turkey. Specimens were photographed, and their morphological and ecological properties were recorded in their natural habitats. Thereafter the samples were taken to the laboratory for further investigation. Some reagents (distilled water, Melzer's reagent, 5% KOH) were used for microscopic investigation. Microphotographs of basidiospores were taken under a light microscope (Leica DM 1000). The specimens were identified based on their macroscopic and microscopic features and aided by the literature (Sumstine 1916, Blanton 1977, Blanton & Burk 1980, Quadraccia 1983, Hemmes & Desjardin 2002, Meyers 2004, Phillips 2005). A short description, images,

habitat, geographical position, locality and collection date of the species are also provided. All specimens were deposited at the herbarium of Ankara University (ANK).

Taxonomy

Pseudocolus fusiformis (E. Fisch.) Lloyd, Syn. Phalloids: 53 (1909). Fig. 1

≡ *Colus fusiformis* E. Fisch., Neue Denkschr. Allg. Schweiz. Ges. Gesammten Naturwiss. 32(1): 64 (1890).
= *Colus javanicus* Penz., Ann. Jard. Bot. Buitenzorg 16: 160 (1899).
≡ *Pseudocolus javanicus* (Penz.) Lloyd, Mycol. Notes 2: 358 (1907).
≡ *Anthurus javanicus* (Penz.) G. Cunn., Proc. Linn. Soc. N.S.W. 56: 186 (1931).
= *Pseudocolus rothae* E. Fisch. ex Lloyd, Phalloids Australas.: 20 (1907).
"*Colus rothae*" E. Fisch., Neue Denkschr. Allg. Schweiz. Ges. Gesammten Naturwiss. 33(1): 23 (1893), nom. inval.
≡ *Colus rothae* (Lloyd) Sacc. & Traverso, Syll. Fung. 19: 389 (1910).
≡ *Anthurus rothae* (Lloyd) G. Cunn., Proc. R. Soc. N.S.W. 56: 188 (1931).
= *Colus schellenbergiae* Sumst., Mycologia 8: 183 (1916).
≡ *Pseudocolus schellenbergiae* (Sumst.) M.M. Johnson, Ohio Biol. Survey Bull. 22: 338 (1929).
= *Pseudocolus jaczewskii* Woronow, Izv. Kavkaz. Muz. 11: 196 (1918).

Immature fruit body 12–16 mm broad, globose to subglobose, resembling pear to egg shaped; peridium white to whitish gray or pale gray, thin, smooth, opening irregularly along three seams; rhizomorphs whitish, filiform, attached to the base. Mature fruit body 40–70 mm height, forming a stalk with tapering three united arms and a volva, arms 2–4 times length of stipe. Stalk white to whitish gray or pale gray, 15–30 mm height, 5–20 mm wide, not extending past volva, thin-walled, hollow, chambered, transversely rugose, flaring toward the upper end. Arms are three in all samples, bright orange to red orange, lanceolate, spongy, united at apex, cylindrical to flattened, transversely rugose and chambered. Gleba olive-green to dark green and slimy. Volva white to whitish gray or grayish, rugose and tough.

Basidiospores 2.8–3.2 × 4.9–5.6 µm, ellipsoid, smooth, hyaline. Basidia with 6–8 spores.

Ecology solitary or scattered, on disturbed soil in deciduous, coniferous, or mixed forests, gardens; also on old woodchip mulch, thick grass, leaf mulch and humus.

Specimen examined: **TURKEY—trabzon**: Yomra, İkisu Village: in common hazel (*Corylus avellana*) garden, in soil, 40°56′30″N - 39°48′55″E, 84 m, 21 August 2009, leg. Akata and Doğan, Akata 2141.

Discussion

Pseudocolus fusiformis is characterized by its onion shaped fruiting body when young and 3–4 (occasionally up to 6) arms when mature (Blanton & Burk 1980). From our measurements taken from 15 fresh specimens, the radius of the four unopened onion shaped fruiting bodies averaged 12–16 mm. All

Figure 1. *Pseudocolus fusiformis*: a,b. mature fruit body; c. immature fruit body; d. spores.

specimens bore only three arms. Mature fruit bodies measured 40–70 × 12–30 mm, and the lengths of the arms were 34–57 mm. These results are confirmed in Blanton & Burk (1980) and Quadraccia (1983).

In the literature, basidiospore sizes for *P. fusiformis* are reported as 1.7–2 × 4.5–5 µm by Burk (1976), 1.8–2 × 3.2–5.5 µm by Quadraccia (1983), and 1.5–2 × 3.75–4.5 µm by Blanton (1977). The spore sizes in our collection —2.8–3.2 × 4.9–5.6 µm — are greater than those given in the relevant literature.

This species appears not to require a specific habitat. *Pseudocolus fusiformis* occurs in habitats possessing mulch, wood mulch, or humus, and has been reported from Africa (La Réunion), Asia, Australia, Europe, North America, and South America (Blanton & Burk 1980).

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