



***Stigmina koyanensis* – a new conidial fungus from Western Ghats of India**

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Abstract

An interesting fungus collected during investigations of foliicolous fungi in Western Ghats of India is described and illustrated. *Stigmina koyanensis* sp. nov. is distinguished by having conidia with a pale apical beak.

Key words – biodiversity – microfungi – taxonomy

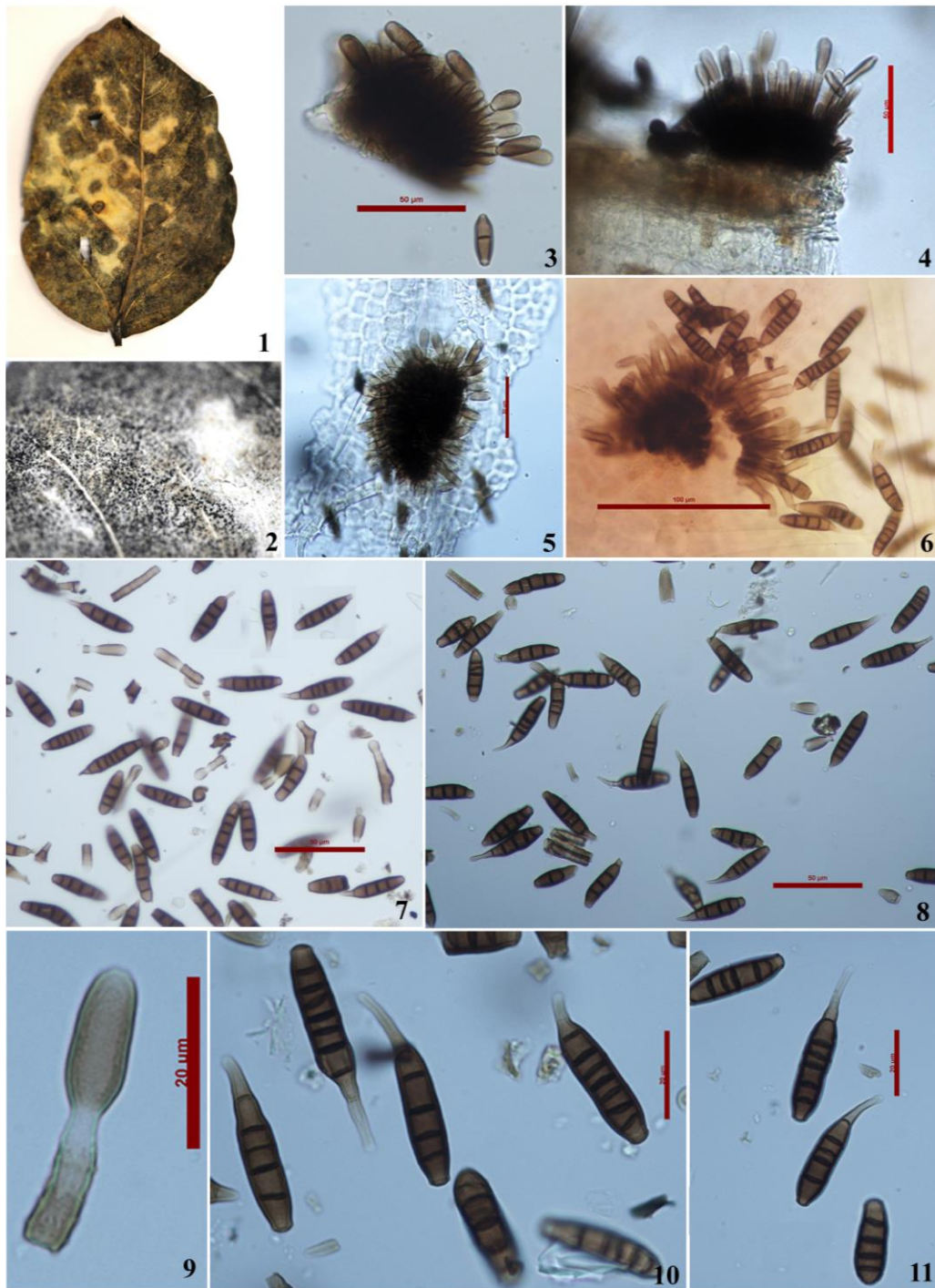
Introduction

Western Ghats is one of the 33 recognised ecologically sensitive zones in the world. It is situated in the southern west coast of the Indian peninsula and covers an area of about 160,000 km². The pristine natural forests, microhabitats, and tropical warm humid climate that prevail in the Western Ghats support many rare and new forms of fungi (Dubey & Moonambeth 2013 a, b, c, 2014). Koyana wildlife sanctuary, situated in Northern Western Ghats, covers an area of 423.55 km² with elevations ranging from 600 to 1100 m. During a mycological survey of conidial fungi from the dominating vegetation of Koyana Wildlife Sanctuary, an interesting species of *Stigmina* (Mycosphaerellaceae) was collected from dried leaves of *Ficus* sp. buried in moist soil and showed morphological differences from all previously described species (Anonymous 1989–2015). According to Mycobank and Index Fungorum databases 170 species of *Stigmina* have been reported. Three species, *Stigmina fici* Pagvi Singh, *S. fici-elasticae* Kapoor, and *S. fici-mysorensis* Muthappa have been reported on *Ficus* spp. The present species differs from other species in having a pale apical beak. The specimen is therefore described as a new species.

Materials & Methods

Isolates and morphology

Samples of dried leaves were placed in paper and aluminium foil bags, taken to the laboratory, and prepared according to Castañeda-Ruiz (2005). Mounts were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol). Photomicrographs were taken using a Nikon eclipse 50 i microscope connected to a Nikon DS–Fi 1 camera. Scanning electron microscopic images were captured using a Zeiss scanning electron microscope (Model EVO 18–12–97). The type specimen is deposited in Botanical Survey of India, Western Regional Centre, Pune.



Figs 1–11 – *Stigmina koyanensis* sp. nov. – 1 Infected leaf of *Ficus* sp. 2 Punctiform colonies of *S. koyanensis* over the host leaf. 3–5 Stromata. 6 Conidiophores and conidia. 7–8 Conidia. 9 Conidiophores showing annellations. 10–11 Conidia with apical beaks. – Bars – 3–5, 7–8 = 50 μ m; 6 = 100 μ m; 9–11 = 20 μ m.

Results

Stigmina koyanensis Dubey Sengupta **sp. nov.**

Mycobank: MB813869

Etymology – species named after the place of collection (Koyana Wildlife Sanctuary, Maharashtra, India).

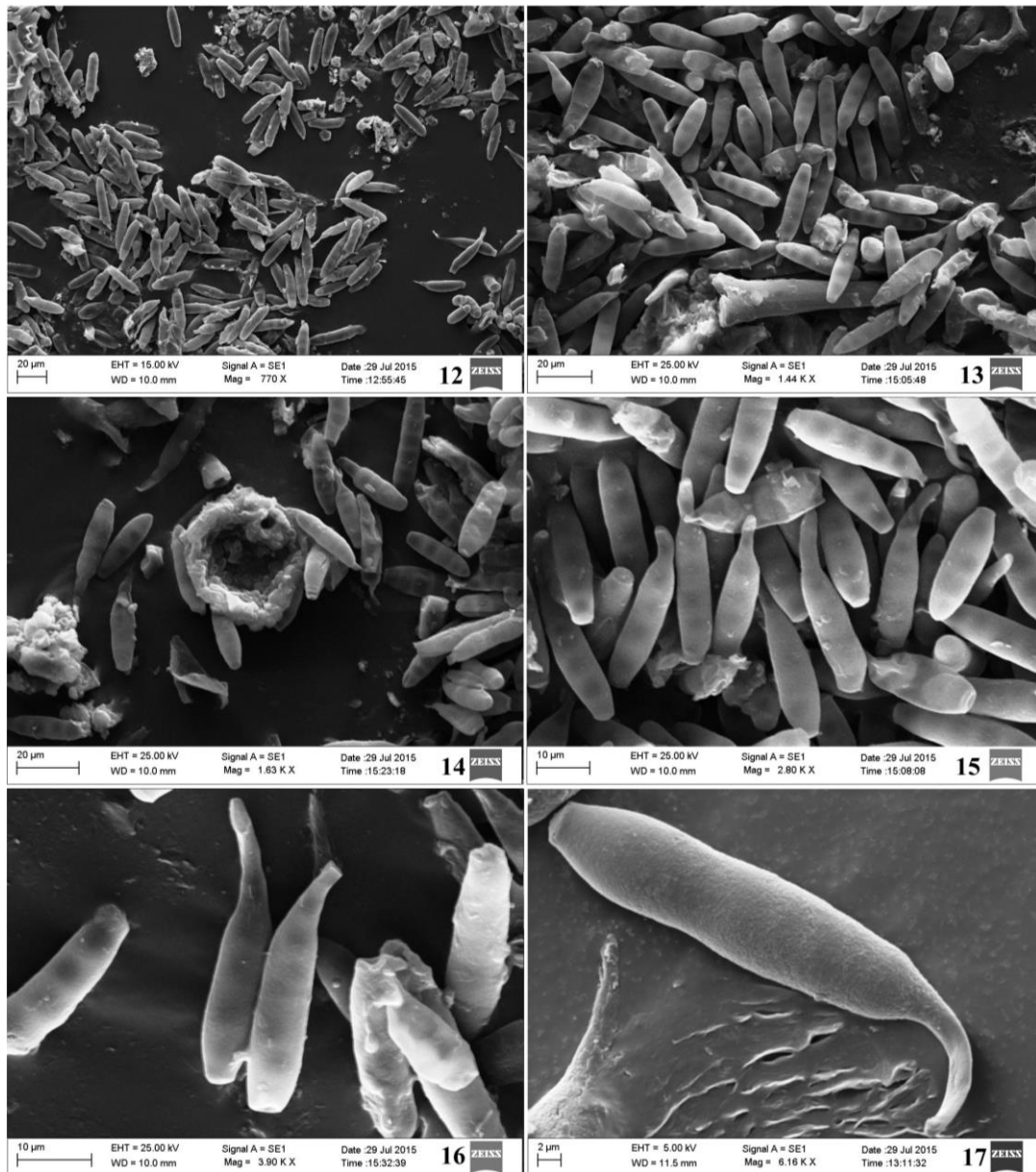
Sporodochia on underside of dried and dead buried leaves, minute, punctiform, dark olivaceous brown, stromata 60–100 μ m wide. Conidiophores cylindrical, straight or flexuous, rust

coloured, up to 50 μm long, 6–10 μm thick with up to 4 annellations. Conidia mid rust coloured with a pale apical beak, clavate, smooth, 3–7 septate, 22–60 μm long, beak up to 20 μm long, 8–10 μm thick in the broadest part, 4–5 μm thick at the base.

Sexual state – Unknown.

Known distribution – Koyana Wildlife Sanctuary, Maharashtra, India.

Holotype – India, Maharashtra, Koyana Wildlife Sanctuary, on dried and buried *Ficus* leaves in soil, 13 Feb 2015, Rashmi Dubey, B.S.I. (W.C) Accession No. 134149.



Figs 12–14 – SEM images of *Stigmina koyanensis* sp. 12–13 Conidia. 14 Stromata. 15–17 Conidia with prominent apical beaks.

Discussion

Six species of *Stigmina* have been reported on family Moraceae, and three species, *Stigmina fici* (Pagvi & Singh 1966), *S. fici-elasticae* (Kapoor 1968) and *S. fici-mysorensis* (Muthappa 1973) have been reported on *Ficus* sp. from India (Bilgrami et al. 1979, 1981, 1991, Jamaluddin 2004). Conidia of *Stigmina* species reported on *Ficus* sp. are rough-walled and without a beak, whereas conidia of the new species are smooth with an apical hyaline beak. The present taxon also

resembles *S. phaeocarpa* (Ellis 1959) in having conidia with a pale beak, but in *S. phaeocarpa* the beak is very long (20–130 µm) and the conidia also have oblique septa, whereas in *S. koyanensis* the conidial beak is up to 60 µm long and the conidia are without oblique septa.

Key to *Stigmina* species reported on family Moraceae

Conidia always less than 20 µm long.....	<i>S. fici</i>
Conidia more than 20 µm long.....	1
1. Conidia frequently with longitudinal septa.....	<i>S. obtecta</i>
Conidia without longitudinal septa.....	2
2. Conidia smooth-walled.....	3
Conidia rough-walled.....	4
3. Conidia without a beak.....	<i>S. sudanensis</i>
Conidia with a hyaline pale beak.....	5
4. Conidia 8–10 µm thick.....	<i>S. fici-elasticae</i>
Conidia 11–12 µm thick.....	<i>S. ficus-mysorensis</i>
5. Conidia with more than 7 septa.....	<i>S. maculata</i>
Conidia with less than 7 septa.....	<i>S. koyanensis</i>

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